

THE SOUTH AUSTRALIAN

DAIRYMEN'S . . .

Journal



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THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL



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And, if we have enough vets now, can we be assured that the position will always be as satisfactory?

Can we be sure that the number of vets available will keep pace with increasing stock numbers, and that the number of men engaged in research will keep pace with the increasing tempo of development as world demand for dairy products increases?

Perhaps, most important, will the qualifications and ability of the new men coming on be as good as those of the present practitioners?

All these questions are vital to dairyfarmers and this Association has frequently discussed among its members, and also with the appropriate authorities whether all that should be done is being done.

Because of his experience as a veterinary practitioner with a large, predominantly dairy, practice and as President of the South Australian Division of the Australian Veterinary Association, there is probably no one better equipped to answer these questions than Mr. Don. Mackie, B.V.Sc., of Murray Bridge, and for these reasons Mr. Mackie was asked to address the Annual Meeting of the Central Council.

The timeliness of Mr. Mackie's address has now been underlined by the news of the quota arrangement in the veterinary schools during the current year, and because of the importance of the subject to the primary producer, and the

necessity to decide soon on the course of action to be taken we publish below Mr. Mackie's opinions on the adequacy of veterinary services in this State and the means that should be used to ensure that sufficient trained replacements are available.

The Adequacy of Veterinary Services in S.A.

As I have just said, there is a shortage of veterinarians in this State as far as staffing is concerned, but at the moment the number of practitioners is nearly adequate for what we are asked by you to do. Gentlemen, I give you this thought. When a veterinarian is worked to capacity, and beyond, by demands on his time and services then he will find more men to provide the service that is being demanded.

The age of the "fire engine practice" is rapidly going, although it will still exist to a certain extent for the urgent cases. Today, with the increasing numbers of sophisticated farmers who understand what a veterinarian specialist can provide and the increasing demand for specialist advice, the tendency is toward the prevention of disease and herd management. These things can be provided in conjunction with existing practices provided you, the farmer, requests them and are prepared to pay for them.

Too often I have heard the comment that it is too expensive to call your veterinarian. Is this really so? Bearing in mind the cost of getting to your property, the cost of drugs, which must be used at ten or more times the dose rate of the same drug in humans, the time involved in doing the case and the facilities provided, and, by no means least, the cost of communications necessary to provide the shortest possible time lapse from your 'phone call to the actual arrival at the case, is the cost really so great?

Costs are at a minimum and have been evolved over many years by discussion and usage within the profession, with economies to the farmer being foremost in those discussions. Veterinarians are perhaps far more conscious of the economics of farming than most farmers as this is part of their training.

Backing these costs for veterinary services is a unique situation in South Australia in which the practicing veterinarians and the government veterinary officers work in very close liaison so that the practitioner may call for full support from the wide resources of government departments at any time to assist you with your problems. This gives you a very much better service than could otherwise be provided.

One of the most discussed factors in cost is that of mileage. I can say most definitely that **better services can be provided by larger group practices further apart than smaller single unit practices operating closer together!** The smaller single unit practice is a relatively short duration venture which can only provide emergency services because the opportunities are not available for the time-consuming advisory work. The tendency towards multiple practices obviates the fatigue problems and provides for fuller service.

Remember that the person who objects to a moderate mileage charge is unlikely to make full use of a veterinarian if that mileage is minimal because it is the total cost to which he objects. Very often this person leaves a case until it becomes urgent and a special call is required; had he contacted the veterinarian earlier the case could have been done with others in the area. Remember also that half-a-dozen people wanting a veterinarian "in the area" do not provide sufficient income for a successful practice.

The cost of developing a practice in rural areas is great, with an average of eight years elapsing before the practitioner going into a new area is able to make an income equivalent to that being offered in positions without the risk associated with private practice.

When the decision is taken to make a single unit practice into a multiple practice, unless more work is available immediately the work demands are halved and so too is the nett income, which reduces the rate of development of facilities for service. Gentlemen, the cost of veterinary services must be looked at from a broader aspect than simply the cost of attendance at one case! The cost should be considered as an annual total amount against the total value of the stock, not against the value of just one cow, for it could have been any one of the fifty head which needed treatment. I think you will agree when I say that most farmers spend more money on repairs and running costs on their cars which bring in no income than on repairs and running costs on the herds of cows which bring in all their income.

There are, in addition, unseen benefits to the farming community from a veterinary practice. The veterinarians can disseminate ideas from one farm to another; they can guide farmers in the use of drugs and new techniques. There are many advisory matters which are passed on from farmer to farmer without the veterinarian visiting a property.

The farmer is only charged, and the veterinarian can only claim a fee, for work done, which means that cases attended or advice actually given provide the veterinarian with his sole means of income.

The next time the cost of veterinary services is raised, consider these factors: the time for the veterinarian to get to the property, do the case and return, the cost of the drugs, the cost of running the car, the cost of staff to handle the call, the cost of accounting, the cost of communications, both telephone and radio, all of which amounts to approximately 70 per cent of the gross amount you pay to the veterinarian himself. Consider also that although you pay him only because and when you need his services, yet he may be considered a permanent member of your staff as he is available to you every day and night of the year, and consider then the number of cases or calls, similar to your case, which he must do throughout the year to ensure a reasonable income.

I must apologise for all this reference to cost of practice but it must surely be a governing factor in regard to the number of veterinarians in a given area. We, as veterinarians, realize and appreciate the terrific advances in farmer-veterinarian relationships in the last ten years, and also the awareness by farmers as to what can be done for them. I am sure these and more sophisticated services will come about as understanding between our two groups improves.

Yes, gentlemen, services are adequate from the existing economic point of view but are **inadequate** when thought is given to what could be done. The adequacy of veterinary services and the number of veterinarians in a given area is in direct proportion to the amount of work the dairy farmer, the sheep owner, the beef raiser and, in fact, all persons directly associated with livestock production are prepared to ask of them.

ESTABLISHING A CHAIR OF VETERINARY SCIENCE IN S.A.?

This is a very big subject and involves many sub-sections, including—

- (i) The need for veterinarians in this State and throughout Australia;
- (ii) The present situation at Universities;
- (iii) The availability of teaching facilities in other States;
- (iv) The availability of trained staff for the faculty;
- (v) The length of time required to establish a faculty; and
- (vi) Economics.

- (i) The first section I shall deal with more fully under the next heading but suffice to say that at a joint meeting of FAO/WHO in Rome, 1963, the present need in Australia for veterinarians exceeded the supply by 27%.
- (ii) The present situation concerning faculties in Australia is thus:—
- (a) There is a long established faculty of Veterinary Science at Sydney University. Since 1910 this school has been providing graduates for the whole of Australia and New Zealand. In 1917 only two students were in attendance with 75 enrolling in 1961. For 34 years from 1908 the only school in Australia.
 - (b) The Melbourne Faculty produced graduates from 1908-1928, re-opening recently and is due to turn out its first graduates in this year (1967).
 - (c) The Queensland Faculty founded in 1935 abandoned in 1943 and re-opened in 1950.
 - (d) New Zealand has started its own faculty.
 - (e) Both Armidale in N.S.W. and Perth in W.A. are very seriously considering establishing a faculty. In fact Perth has carried out preliminary work on this matter.

The point to be made in this section is that if South Australia initiated negotiations to obtain a chair of Veterinary Science it might well be the sixth or seventh school in Australasia. Are our needs in Australia great enough to warrant the establishment of another expensive faculty in Australia? . . . whilst the three existing schools are labouring under financial difficulties.

- (iii) Students from S.A. may seek entry to either Melbourne, Sydney or Brisbane. Requirement for entry is matriculation. Melbourne has a quota system. Mr. Bywaters, M.P., set out the details of student entry to the three schools in a letter to the S.A.D.A., which was published in full in the previous issue of this Journal.
- (iv) In the event of a new faculty being established in S.A. one of the most important factors would be the availability of trained personnel to staff the school. The more the top men are thinned out to cover a greater number of teaching establishments the lower would be the overall standard. This problem has occurred in other countries. Hand in glove with teaching goes research, both in quality and quantity. These factors together put a faculty into top or second class categories. **The Australian Veterinary Association will support the establishment of any new faculty, provided it is not developed "on the cheap" and provided it is developed along top class lines so that the standard of veterinarians is not reduced.**
- (v) To start any faculty a University must have the blessing of the Universities Commission which allots monies for the development and financing of the faculty. This commission meets every three years. Assuming that it would take three years to initiate the school and then three years to build and staff the various sections of the school, it would be **eleven years** before the first graduates were available for duties as veterinarians. For the reason of this lapse of time, if for no other reason, the **idea of a faculty in this State must be constantly in the minds of all people concerned with livestock production.** It is possible that eventually every

State in Australia will have a faculty of Veterinary Science but this possibility is dependant upon the enthusiasm of all stock owners and persons connected with primary industry, and this enthusiasm must not be limited to merely recognizing the need for veterinary specialists but to having sufficient forethought to back their enthusiasm **financially**.

- (vi) This brings us to the big factor of economics. The cost of such a faculty is great. Here are some figures. In Great Britain the ratio of staff to students is 1:6, ideally should be 1:5. This is because of the increased amount of work on practical demonstrations and clinical and surgery work. In 1962 at Sydney University the average cost of training a student of any faculty was £415 whereas the cost of training each veterinary student per year was £1,511.

A faculty of Veterinary Science is an expensive faculty and requires financial backing, not only by the government but by private enterprise, perhaps more than any other field of teaching.

Teaching clinics and teaching farms must be provided and because of the specialized nature of the work these facilities must be devoted exclusively to the work, and cannot be provided in conjunction with other organizations.

From the point of view of economics, if a faculty in S.A. was turning out, say, 30 students per year, how many years would elapse before South Australia would be fully supplied with veterinarians? Veterinarians are urgently required in all fields of veterinary endeavours in this State at the moment. They are required in the Department of Agriculture, which is operating with about half the necessary staff. There is a shortage of veterinarians for Meat Inspection, Quarantine, Public Health, research and private practice, not to mention nutrition, genetics and animal husbandry. It is possible that an even greater demand will exist as scientific knowledge advances and the farmer demands more sophisticated services.

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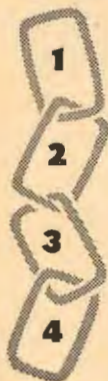
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PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1965	1966	1965/66	1966/67	1965	1966
Nov.	5,076	5,567	24,244	25,264	44,234	45,498
Dec.	4,673	4,943	28,917	30,207	48,907	50,441

SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1965	1966	1965/66	1966/67	1965	1966	1965	1966
Nov. ...	1,734	1,758	8,666	8,720	34.2	31.6	17.50	17.05
Dec. ...	1,751	1,702	10,417	10,422	36.8	34.4	19.58	18.56

Moving average quota for 12 months ended 30/11/66, 41.98%;
31/12/66, 41.66%.

INTERIM PRICES TO LICENSED SUPPLIERS

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

1966	Basic (per lb. butterfat)	C.M.B. 17.05	Total 53.74	3% 16.64	3.5% 4% 4.5% 5% (per gallon)			
					19.41	22.18	24.96	27.73
Nov.	36.69	17.05	53.74	16.64	19.41	22.18	24.96	27.73
Dec.	36.69	18.56	55.25	17.11	19.96	22.81	25.66	28.51

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	November		December	
	1965	1966	1965	1966
Butter—Choicest Australian	314/-	300/-	314/-	300/-
Cheese—First Grade Australian	235/-	240/-	235/-	240/-
Rindless Australian	260/-	265/-	260/-	265/-

INCREASE IN INTERIM BASIC PRICE

Retrospective To Follow

The interim basic price for milk received from licensed suppliers in 1966-67 will be increased as a result of a \$1.00 per cwt. rise in cheese values. It is estimated that the basic price will rise by about 2¼ cents to 38.9 cents per lb. butterfat.

The adjustment in prices paid for milk supplied since 1st July, 1966 will be made by means of a retrospective payment of approximately 1½ cents per lb. butterfat (equalized).

REFRIGERATED FARM MILK TANKS

Regulations made under the Metropolitan Milk Supply Act on the 15th September, 1966, state that any producer who requires milk to be collected from his premises by a tanker "shall provide and use for the storage and cooling of such milk thereon a refrigerated farm milk tank which conforms in every respect to the standard as at the date of the installation thereof for such tanks specified in the publication known as "Australian Standards N.46, 1963" published by the Standards Association of Australia as at the date of installation of the tank, provided always that any such producer using a farm milk tank installed by him prior to the date on which this regulation came into force may continue to use that tank on the premises on which it was installed for the purpose of storing milk to be collected by a tanker until that farm milk tank requires replacement."

District Supervisors have recently begun a detailed inspection of the bulk tank units which have already been installed and found that many of the tanks and the refrigeration units are not being marked as required under Section 7 of the Australian Standard N.46.

This matter has been brought to the notice of the various Companies but the vats continue to be installed without the markings stipulated by the Standards Association. In some cases the tanks are without the markings on either the vat or the refrigeration equipment and in other cases the vats are marked as required, but there is no information on the refrigeration units.

Producers are advised against accepting refrigerated farm milk tanks unless they are marked as required under Section 7 of the Australian Standard.

It is important also that when purchasing a tank unit producers should obtain from the distributor a warranty that the unit complies with the Australian Standard N.46.

R. B. CANT, Secretary.

33 Hutt Street,
Adelaide,
5th January, 1967.

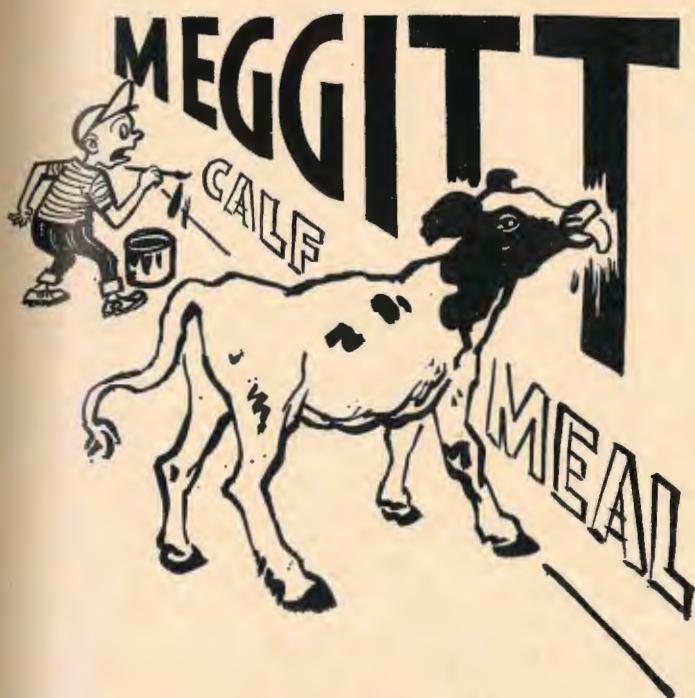
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MARGARINE ROUND-UP

BALANCED VIEW ON HEART DISEASE

In a comprehensive review "Coronary Heart Disease: Some Reflections on its Causation and Prevention" (Med. J. Aust. 53, 15: 607: 1966) Dr. E. H. Hipsley of the Australian Institute of Anatomy and Dr. S. B. Furnass of the Canberra Community Hospital set out the many and complicated factors associated with this disease. They achieve a perspective which is usually absent from more limited reports of particular research in this field. The full article is well worth reading. The major points presented in the conclusion are:

"Evidence is presented to support the view that there has been a progressive increase in the death rate from coronary heart disease in Australia over the past two decades. This increase appears to be mainly attributable to environmental influences rather than simply to aging of the population.

Amongst the possible causes of coronary heart disease which have been cited in the literature, the roles of diet, exercise, emotion and cigarette smoking are discussed, particularly with regard to biochemical correlations.

An integrative hypothesis is proposed, whereby coronary heart disease may be regarded as a disorder of energy metabolism, in which rates of energy income exceed rates of energy expenditure, under the influence of multiple environmental factors.

In the management of patients recovering from acute episodes of myocardial infarction, we advocate a regimen of restricted food consumption, early mobilization and the avoidance when possible of cigarettes and of emotion-engendering stimuli.

In terms of prevention of coronary heart disease, an increase in physical activity, the adoption of more tranquil attitudes of mind and a decrease in cigarette smoking may prove beneficial. In so far as diet may be involved in the genesis of coronary heart disease, we maintain that the consumption of smaller meals and the replacement of refined by unrefined carbohydrate may prove to be of greater protective value to the community than any large-scale substitution of animal fat by vegetable oils."

ALLEGATIONS THAT "INEDIBLE TALLOW" IS BEING USED IN MANUFACTURE OF MARGARINE

A report published recently on the front page of "Queensland Country Life," says that the observers at the meatworks claimed that most of the tallow for margarine manufacturers was classified "inedible" and came from highly suspect materials at meatworks.

The said margarine manufacturers were using tallow at three to four times the volume of vegetable oil products.

Edible tallow was only a small percentage of this.

"Not Sighted"

Edible tallow was inspected by Commonwealth and State meat inspectors, but inedible tallow was not sighted by them at any stage, they said.

They claimed some meatworks did not attempt to produce separately an edible or inedible tallow.

This material was picked up by trucks from meatworks plants in stainless steel containers and taken over the border, they continued.

The main concern was that inedible tallows included sweepings from the floors at meatworks, stained intestines, and even abscessed material cut from carcasses they said. Carcasses of dead cattle in meatworks paddocks

were cut up and dumped in tallow-making machines, they claimed. These cattle were never inspected.

The Commonwealth Department of Primary Industry, through staff shortages, had turned a blind eye to these activities.
No further interest

Having refused an export licence for tallow and declared the product inedible, it had no further interest in this tallow avenue.

As the materials were going over the border, the State department had no further interest in them, they said.

Tallow produced from diseased materials was never taken to higher temperatures than 180 deg. Fahrenheit, regarded as only fair sterilising temperatures to kill certain bacteria.

LEADING ACADEMIC'S VIEW

The widely-publicised letter signed by 10 agricultural economists opposing the quota legislation, has been taken to represent the view of economists in general. This is not the case.

Professor H. A. Edwards, Professor of Economics, Head of the School of Economics and Financial Studies, Macquarie University, New South Wales, has put forward this quite contrary view.

"Many Australian industries are protected against the competition of cheaper imported products. This protection usually takes the form of the government imposing a tariff upon the imported product, generally, on the advice of the Tariff Board. For example, the tariff on fully imported motor vehicles was recently raised to 45%, meaning that a car costing say \$2,000 in the country where it was manufactured would be half as expensive again if sold in Australia, thus enabling the Australian produced product to be made and sold at this higher price.

"The butterfat sector of the Dairying Industry also receives protection for a variety of reasons, including the industry's contribution to the national economy, especially decentralisation, and to exports and world food supplies. This has been estimated by Dr. Stuart Harris, Deputy Director of the Bureau of Agricultural Economics, to raise from 30 to 50% on a basis comparable to secondary industry.

"This protection necessarily takes two forms—protection against butter as such, meaning New Zealand butter, and protection against margarine, the rival product, which in its best forms is virtually indistinguishable from butter. Why does protection against margarine take the form of the much criticised quotas? Because, while the margarine itself is manufactured in Australia, it is manufactured largely from cheap imported materials. You cannot put a tariff on a product manufactured in Australia but you could put an excise tax on it. In this way you could raise the price of margarine to equal butter, just as the tariff on imported cars or textiles or paper, or what have you, raises the price of the imported car or textile to the level of the higher cost of the home-produced article. That would very effectively restrict people's free choice, but clearly, to impose a tax on margarine like that would deprive pensioners and other low income groups of the benefit of the lower price of margarine. It is this very price advantage of margarine for low income groups which has been emphasised in this discussion.

"The only alternative then, if the protection is to be afforded those at all, is the imposition of the quotas. They are more direct than a tariff, but they have the advantage that they do not mean a higher price.

"It is said that the quotas hold back the development of the Australian oil seeds industry. This is manifestly not the case. The only promising oil seed crop—promising in that it does not itself require higher protection against imports than does butter—is safflower seed, but the margarine products made from this, the so-called poly-unsaturates, sell at the same price as butter. Moreover, it is not the quotas at present which limit the sales of these products; indeed there is plenty of scope within the present quotas for sales large enough to utilize all the safflower oil likely to be produced in Australia for some years to come.

"With regard to peanut oil, the cost of producing this in Australia is almost prohibitive. The current level of protection is one hundred per cent, and the Tariff Board in its report of September last year, specifically stated that to grow peanuts for oil is against the interests of the economy.

"With the protection which the quotas give to butter producers importantly it is evident from what I have said that if it were mandatory to use Australian vegetable oils to produce margarine the butter producer would not have much to worry about; however, if the quotas were removed today imported oils would necessarily be used and the resultant cheaper product would be marketed with all the great resources for spending on advertising and other gimmicks that firms such as Unilever and the U.S. giant, Proctor and Gamble, can bring to bear. The money poured into the Mrs. Jones campaign would be a foretaste of such things to come.

"Against such an increased demand, largely by it noted a demand contrived by advertising, the quotas afford the dairy farmers a very significant protection. Perhaps to put a money figure on it of the order of \$10 million.

"To sum up, to lift the quotas would mean some gain to consumers, but then so would the removing of tariffs on motor cars, textiles and transistor radios, and one hundred and one other things. A campaign for an all-round reduction in the protection afforded Australian industry, with a consequent enlargement of consumers' choice that that would mean would make good sense, but the present self-interested outcry against the assistance afforded our large and important Australian industry is hardly a fair, nor is it a very edifying spectacle."

THE MARGARINE PROBLEM

At the time of going to press it is too early to provide any report concerning the outcome of the deliberations of the Australian Agricultural Council on the question of margarine quotas.

The subject was debated on many occasions by the Central Council and Executive Committee of this Association, and both the General President and General Secretary conferred with the Minister of Agriculture, whilst the General Secretary was joint leader with the Chairman of the Butter Manufacturers' Association (Mr. N. Mair) of a deputation to the Minister, representing all sections of the dairy industry.

As the Parliamentary representative of a region where dairy farming is widespread, the Minister of Agriculture is very well acquainted with our side of the case for quotas, and has always displayed a very sympathetic attitude to our case.



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We can, therefore, be assured that he will be able to make a positive contribution to the deliberations of the Agricultural Council, and his hand will be strengthened by the knowledge that South Australia has maintained, since the first introduction of margarine quotas, a level of quota that is very low in relation to most other States, and was able, by the special nature of this State's Margarine Act, to resist the importation of margarine from other States until the challenge to the legislation which was made in 1965 by the Marrickville organization under the protection of Section 92 of the Commonwealth Constitution.

Whether the quota position will remain unaltered or whether the Agricultural Council will allow some relaxation we do not at present know, but we do know that in all the sorry campaign of vilification carried on by Marrickville the heart-disease aspect received little or no mention, probably because, even in the eyes of its originators, it no longer holds water.

What a pity they were not prepared to recant this theory publicly, and to a wider audience than that which heard Mr. B. W. Robertson, the general manager of Marrickville Margarine Pty. Ltd., say that neither he nor anyone else in his company knew of any health benefits for poly-unsaturated margarine. This statement was made by Mr. Robertson to a recent conference held by the Queensland Retail Traders' Association.

There is no such lack of knowledge about the health giving qualities of butterfat, and no greater exponent than Mr. George Coombs, general manager of the Queensland Butter Marketing Board, who, late in 1965, presented details of further developments in research work being undertaken into the therapeutic properties of butter fat. The calibre of Mr. Coombs' address was such that the Central Council directed that the text be published in the Journal.

HEALTH ASPECT IN THE PROMOTION OF BUTTER AND BUTTER-FAT

In the "battle of the fats" there is no more doughty a warrior on the dairyfarmers' side than George Coombs of the Queensland Butter Marketing Board, whose research into the use of butterfat in the treatment of stomach disorders has received recognition around the globe, and was reported in this Journal in July-August, 1965.

It is a tragedy for the dairying industry and for sufferers from stomach disorders that George Coombs' work does not receive the same promotion that is given to the claims for margarine, and that the distribution of butterfat products other than table butter is not handled with the same degree of expertise.

Recently in an interview on the ABC, Mr. Coombs' contribution to the discussion was of such importance that the Central Council recommended its inclusion in this Journal, but we regret to report that the interview was unscripted and consequently the text is not available for printing. However, Mr. Coombs had, a short time before, given an address to the Victorian Division of the Australian Society of Dairy Technology, and the text of that address, with the material printed earlier in this Journal in summarized form, follows by courtesy of the Society.

Introduction

According to the latest release of the Bureau of Agricultural Economics consumption of butter in Australia continues its downward trend. Consumption per head has fallen from 30.6 lbs. in 1953/54 to 23.4 lbs. in 1963/64, and the Bureau estimates that the decline will continue in 1964/65. This assumption is in line with industry figures which show a decline of approximately 5,000 tons in 1964/65, which is equal to a further drop of 1 lb. per head of population.

INCREASING CARRYING CAPACITY

A short while ago, an old friend of ours whom we shall call Harry, called into see us. During a most interesting conversation about old times he happened to mention that he had rather an awkward problem. His son who had just finished his education wished to join him in partnership on the property and to start up a small Guernsey stud.

The problem was that Harry and his brother had shared some 800 acres for nearly thirty years. They now discovered that the property could not support both families economically, so it was decided to split up and farm 400 acres each.

Harry decided to seek our advice on concentrate feeding. He wanted to know how Wetmore could assist him in this predicament. After some careful consideration we decided that the best way out for him was to grow his own protein, and sharefarm his carbohydrates.

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There seemed to be no vitamin or mineral deficiencies in Harry's vicinity, so to balance his ration it was decided to use a small amount of Linseed meal and Bran or Pollard.

So far using this method, Harry has shown quite good financial returns, the ration which he is using for the Guerneys is as follows:

60% Cereal or clover hay	5% Linseed Meal
30% Crushed Barley or Oats	5% Bran or Pollard

This ration has proved to be quite sufficient and has boosted their production. He now uses the same method with a different ration to run nearly forty baconers. Harry also claims to be able to get these baconers to market a week to a fortnight earlier than previously.

Harry wrote to us the other week saying that this was one of his wisest decisions to seek our advice, as he and his son are now using "Glutton" to contract mill for other farmers in the district.

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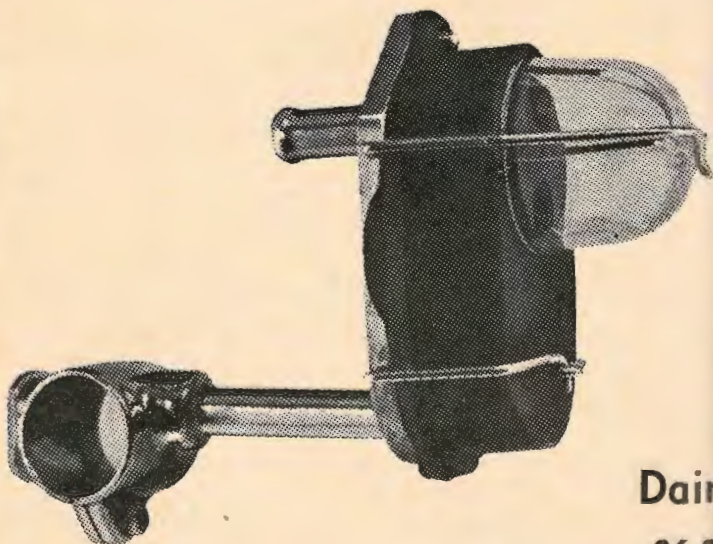
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The Bureau also stated that during the six months ended December, 1964, a total of 12,482 tons of table margarine was produced, or 3,887 tons more than in the same period of the previous year. This indicates an increase of 45.22%—a proportion of which would be at the expense of butter.

In round figures, a decreased consumption of 1 lb. per head on a population of 10/11 million means a loss in sales of 5,000 tons. Taking this quantity off the local market means increasing our exports by a similar tonnage. The net return from exports is approximately \$400 a ton below the net return from local sales—which means a yearly loss of \$2,000,000 on 5,000 tons.

If the figures for 1964/65 show a consumption of 22.4 lb. per head, it means a drop of 8 lb. per head in eleven years, which is equal to a loss in returns of \$16,000,000 yearly to the industry. In other words, 60% of the subsidy benefit has been lost. These figures must deeply concern all persons with the interests of the industry at heart. The illusion that price was the deciding factor has been shattered by the margarine industry, which has brought its prices almost up to butter, yet has increased its sales by 45%.

The bolstering up of the image of a product, by sustained advertising with a specific aim in view apparently influences the public to accept an increased price. Is the image, and thus the consumption, of butter declining because of the animal fats-cholesterol theories? If so, there is much that we can do about it.

Answering the cholesterol theory

It has been shown that ischaemic heart disease tends to be associated with elevated levels of serum cholesterol, both in populations and in individuals. There is also evidence that population levels of serum cholesterol are sometimes correlated with (among other characteristics) a high intake of animal fats and a relatively low intake of unsaturated vegetable oils. Attempts to demonstrate such a correlation in individuals between customary diet and serum-cholesterol level have been unsuccessful; but the level may be altered by changes in fat intake.

The American heart foundation is supporting the use of poly-unsaturated fatty acids in the reduction of serum cholesterol and is recommending dietary changes along these lines. On the other hand the American Medical Association does not see fit to recommend any such dietary changes. The death rate from arteriosclerosis in countries which have adopted the poly-unsaturated diet does not appear to support the American Heart Foundation's reasoning. For example, in America, where the butter consumption has dropped to 7.5 lb. per head per annum, the death rate from heart disease has soared to 307 per 100,000, while in New Zealand, where butter consumption is very high, 42.9 lb. per head, the death rate from heart disease is only 252 per 100,000.

The latest literature available on this subject is interesting. Rose et al (1965) reported that, in testing heart-disease patients, those treated with corn oil (a poly-unsaturated fat) had the worst experience. At St. Mary's Hospital, London, 80 heart patients were divided into three groups—Group 1 continued their usual diet; Groups 2 and 3 were instructed to avoid foods rich in animal fat, and to restrict their intake of milk, butter and eggs. Group 2 received a daily supplement of 80 g of olive oil, which is rich in the mono-unsaturated oleic acid, and Group 3 received a similar quantity of corn oil, which is rich in the poly-unsaturated linoleic acid. The levels of serum cholesterol remained steady in Groups 1 and 2, and were reduced in Group 3 to 20-30 mg. per 100 ml. below the original level. After two years the proportion of patients alive and free of fresh myocardial infarction was 75%, 57% and 52% in the respective groups.

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Although corn oil reduced the cholesterol level, 48% of patients on this diet died, as compared with only 25% of those whose diet included dairy products. In other words, those who cut out dairy products and changed to the poly-unsaturated diet, reduced their cholesterol level and at the same time increased their death rate 92% as compared with those who continued their normal diet.

The statistics in Table 1 would appear to support the views expressed above.

Table 1
Butter consumption and death rate from arteriosclerotic and degenerative heart disease in 1960

	Yearly butter consumption lb. head	Death rate per 100,000
New Zealand	42.9	252
Republic of Ireland	36.1	314
Australia	25.1	256
France	24.3	79
England and Wales	18.8	311
Scotland	15.6	357
Norway	8.6	209
U.S.A.	7.5	307

It is interesting to note the low French death rate; in this country butter is used extensively for cooking purposes—is this the reason why? In the higher butter consumption group, the average death rate is 225 per 100,000, whereas in the lower butter consumption group, the death rate average is 296 per 100,000, or 31% above the higher butter consumption group.

The Journal of the American Oil Chemists' Society, July, 1965, cites a statement on diet and cardiovascular disease by Margaret J. Albrink (1965) of West Virginia University. She states that a review of the dietary habits of mankind and the changes in these habits suggests that an increase in total calories rather than of dietary fat coincides with the increase in atherosclerotic vascular disease in affluent countries. Serum tri-glycerides, unlike serum cholesterol, are associated with various measures of body fatness and may thus be used to test the importance of caloric excess in the pathogenesis of coronary artery disease. The fact that elevated tri-glyceride concentration is more closely associated with coronary artery disease than is serum cholesterol concentration, particularly after age 50, supports the possibility that over-nutrition in general, rather than an increased intake of dietary fat may be responsible for the increased incidence of coronary artery disease.

According to Turner (1965), pregnant women who go on low-cholesterol diets may have mentally retarded children. Cholesterol is essential for normal growth and development, particularly of the nervous system. Elimination of cholesterol from the diet could be disastrous, particularly for pregnant women.

Dr. Aloys L. Tappel (1964), Professor of Food Science and Technology at the University of California recently stated that: "People who eat too much in the way of vegetable oils may greatly increase the rate at which they grow old and decay." Americans, who are very "heart conscious" are being bombarded by propaganda from the manufacturers of vegetable oils and foods made from such oils. They are promised long life and happiness if they forsake animal fats and change to "purest golden corn oil." Dr. Tappel believes the opposite, but having issued his warning, he went on to say that people who ate a lot of lettuce (or some other source of vitamin E) would increase their life span by many years.

Unsaturated fatty acids are highly reactive when taken into the body. They react with oxygen to form free radicals and according to Dr. Tappel most ageing phenomena can be accounted for by this process. What happens is that the highly reactive free-radicals pick up hydrogen atoms from a protein. Thus in turn, the protein molecules tend to increase in weight and lump together. Particularly affected, according to Dr. Tappel, are proteins which serve in structural function. There is a consequent loss of elasticity and function in muscles and other tissues.

Classification of fats

Clear classification of the various types of fat in the diet is essential to consideration of their relative roles in human health.

Recent thinking in scientific circles is that the general grouping of fats into "animal" and "vegetable" should be discontinued, as this is not usefully descriptive.

Some vegetable fats such as corn oil, cotton seed, soyabean, sunflower seed, safflower grain, peanut and sesame contain poly-unsaturated fatty acids; yet other vegetable fats—coconut oil and cocoa fats are very saturated, and olive oil has only a low poly-unsaturated content, which is confusing to say the least!

The animal fats classification is just as confusing. For example, carcass fats contain nine known fatty acids, yet butterfat contains sixty-five. Bhalerao et al (1959) stated that butterfat contains tri-glycerides which are acetone insoluble and are able to counteract the effect of toxic products caused by heat. Carcass fats do not possess this virtue, neither do vegetable fats. Both butterfat and carcass fat are influenced in composition by fodder, but are quite distinct fats formed in different ways.

When animal fats are subdivided, and milk fats are regarded in their own right, butter and butterfat may be tested on their own, in relation to heart and other diseases. As far as I am aware, no research group has done any work on heart disease wherein animal carcass and vegetable fats are excluded from bodily intake, and only the fats of milk are consumed.

Cooking with butterfat

Under the butter and butterfat (ghee) regimen which we have been using in Queensland the total fat intake is estimated to be reduced by about 25%, depending upon the former eating habits of each individual. Butterfat intake is increased, but other fats are almost eliminated. Overweight people invariably report a weight reduction when following the regimen, which in itself is beneficial. This factor alone deserves confirmation by controlled testing. In America 40% of all adults believe they have a weight problem. With millions on a diet, this situation represents continuing sales losses for the dairy industry. The butter and ghee regimen is not a diet, it is a way of cooking which drastically reduces hidden fat in many of our fried and roasted foodstuffs. It seems that dairy foods, and in fact any foods used correctly, are not fattening. We must promote this message to the public.

The results we have noted in some dyspepsia sufferers, who were also heart cases, gives hope that herein lies an aspect of research yet untouched, which may be beneficial to mankind and to the dairy industry.

I can assure research workers that there are no side effects from this method of butterfat cooking. I quote one heart case (male 54 years) with a cholesterol reading of 413 mg per 100 ml which was considered dangerous. After 14 weeks on the regimen the government pathologist's report indicated a reduction to 166 mg per 100 ml. Two other heart cases likewise improved.

If the Heart Foundation is looking for new leads, then the butter and butterfat regimen and the effect of heated fats deserves consideration for controlled testing over a large group of heart sufferers for an extended period.

The greatest inroads made by the edible oil industry into our market has been in the cooking field, yet I consider that this is where they are most vulnerable from a health point of view. Over eight years ago, my Board commenced the Judith May Cooking Clinic, coupling this with research into the effects of heated fats in the human body. Herein lay a field wide open for research. The industry knows little about the performance of heated butterfat and other fats in the human body, although the effect of heated fats on animals was well known.

Research on heated fats

The work we have done on this subject in Queensland was recently reported (Coombs et al, 1965) and the report is summarized here.

Over recent years considerable attention has been focused on the nutritional effect of heated oils and fats on laboratory animals. Early workers in this field used fats oxidised far beyond the stage ordinarily reached in cooking. However, Johnson et al (1956) fed corn oil, margarine base stock and butterfat heated at 200°C for 24 hours to weanling rats. With corn oil the rats suffered severe diarrhoea, a decrease of food intake, and were characterised by rough fur. Under similar conditions, margarine base stock gave slight growth depression, but with butterfat no adverse effect was observed.

With mature rats fed the same diet, including 20% corn oil, heated at 200°C for 24 hours, within eight hours the animals began to exhibit diarrhoea and a lower food intake; after 17 days several of the animals died, and by the 24th day all were dead. Other tests showed that where rats were transferred from the thermally oxidised to the fresh corn oil, they recovered, indicating that the toxicity was caused by heat.

A series of experiments were also carried out in which large amounts of several vitamins and a mixture of vitamins were fed by dropper daily. None of the vitamins counteracted the depressing effect of the heated oil. This indicates that the loss of vitamins alone was not the cause.

Matsuo (1962) reported feeding once a day 0.8 ml of autoxidised ester to four healthy rabbits. They all died. Upon autopsy it was found that fairly severe deterioration and destruction had occurred in the mucous membranes of the stomach and intestine, and in one a stomach ulcer had formed. Of special interest was the finding that the intestines were less pliable and apt to break when stretched.

Irwin et al (1938) reported that factors other than destruction of essential nutrients are involved in the harmful effects of oxidised fats. These authors demonstrated that oxidised fat does not appear to be completely absorbed in the rat. Reduced absorption means a reduction in digestibility, and these changes are most noticeable in the more unsaturated fats.

Perkins (1960) also noted that oils thermally oxidised are not completely absorbed in the intestinal tract of the rat. He also reported the presence of enlarged livers. Poling (1960) reported that laboratory heated fats when fed to rats caused liver enlargement in three days. Kummerow (1962) found that ricinoleic acid fed at 10% level resulted in increased liver weights and decreased growth when fed to rats.

If this heat induced toxicity resulting from the ingestion by animals of fats other than butterfat applied also to humans, it would be of considerable

importance to human nutrition. Bhalerao et al (1959) stated that butterfat contains triglycerides which are acetone-insoluble and are able to counteract the effect of toxic products or prevent the formation of toxic products during the thermal polymerisation of a fat. Whilst there are biological differences between the bodies of animals and humans, nevertheless science over the years has relied upon the work on animals as a guide to what may be expected to happen in the human body. There are obvious difficulties in studying toxic effects of heated fats in the human diet, and this is no doubt partly responsible for the limited amount of work that has been done in this field. To evaluate the relative effects of different fats after heating would demand extensive clinical observations on many patients under rigid dietary control.

Evidence of one such test has been reported by Horwitt (1962), who stated that nine out of 23 (human) subjects who had been on a diet in which fat had been oxidised to a peroxide number of 50 had evidence of active duodenal ulcers. This test was carried out to assess the effect of the loss of tocopherols which had been destroyed on heating. The examiners never anticipated this result, which however bears a direct relationship to our findings.

In our work we selected subjects suffering from ulcers, digestive disorders and gastro-intestinal disturbances similar to disorders which had been induced into animals by the feeding of oxidised heated vegetable and animal carcass fats. We eliminated all vegetable and animal carcass fats from the diet and allowed only the fats of milk (butter and ghee) to be consumed.

Experiment 1

In this study there were selected 38 volunteers who, as diagnosed by their own medical practitioners, were suffering from gastric and duodenal ulcers and digestive disorders. One of our team, Dr. D. A. Kaye, a medical practitioner confirmed the diagnosis to ensure the validity of the selection, but at this stage no X-ray examinations were made. The examination of the patients continued at regular intervals during the trials. In this experiment the effect on gastro-intestinal complaints of substituting butterfat for other cooking fats previously used by the patients in the preparation of fried and roasted foods and other foods containing fats were studied.

Observations over periods of from six months to two years on 22 duodenal and gastric ulcer patients who had an age range of from 28 to 76 years and a duration of illness from one to 45 years, indicated that 17 of these patients were cured or improved to the point of not suffering pain or distension after eating meals fried or baked in butterfat. One case was X-rayed by her own doctor two years before commencing treatment and showed ulcer in X-ray plate and screening. She was still suffering when she adopted the butterfat regimen. Another X-ray taken three months after commencement of the butterfat cooking indicated that the ulcer was not detectable in either the X-ray plate or screening.

Sixteen dyspepsia patients were examined, suffering from two or more of the following: flatulent dyspepsia; heart burn; nausea; distension; vomiting and water brash. These patients ranged from 40 to 72 years and had been ill from one to 47 years. Of these, 15 were cured or improved to the point of not suffering from any of the dyspeptic symptoms indicated after adopting the modified diet for periods ranging from six to 12 months.

Experiment 2

These tests were carried out with four persons over a three-week period using butterfat and household used beef and mutton dripping in coded containers both coloured and indistinguishable. Persons concerned were not aware that tests were being made with the fats used in the preparation of their foods.

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Neither the arranger of the experiment nor those preparing the foods were aware of the nature of the fat used at the point of issue.

All four persons were able to tolerate the food cooked in butterfat but when the alternate fat was used, pain, distension and disorders suffered previously, returned. One, a male of 18 years, suffered from a liver disorder all his life with symptoms of dizzy headaches and vomiting; the second case was a male of 38 years who suffered from stomach ulcers from four to five years; the third was a male of 37 years who had been suffering from a duodenal ulcer for 20 years; the fourth case was a male of 52 years suffering from nervous dyspepsia for six years.

The reaction of these patients to tests, when they were totally unaware that they were being used for test purposes, eliminates the possibility of psychological or suggestive influence over such tests. Instructions were given, however, that if the patient reacted adversely to any one fat, the use of this fat was to be discontinued. These instructions were obeyed by the persons preparing food.

Experiment 3

The cases reported below record the effects of the dietary regimen described in this paper on two patients suffering from gastrointestinal disturbance.

Case 1: A returned soldier, as a prisoner during World War II, had been constrained to work for over a year on the construction of the Burma railway line. On his return to Australia he continued to suffer from chronic dyspepsia, vomiting and diarrhoea, and was unable to work. Three years ago he was put on the dietary regimen. After three months he returned to work as a labourer. Since then he has suffered no digestive disorders nor gastrointestinal disturbances, and is still working.

Case 2: A returned soldier 57 years of age had been diagnosed as suffering from ulcerative colitis for 19 years, with chronic haemorrhaging and diarrhoea up to twelve motions a day being not unusual. After three months on the dietary regimen, the haemorrhaging had ceased and diarrhoea occurred only after emotional stress.

In regard to this case it was interesting to note that this person had been ordered to use only margarine and poly-unsaturated fats and eliminate all dairy fats from his diet.

The effect of duodenal and gastric ulcers on health and national economy.

In the United Kingdom alone 30,000 human stomachs are removed in the operating theatres every year. These operations become necessary because of the ulceration and perforation of the food tract canals. Whilst we must have a most profound admiration for the skill of the surgeons and the success in so many of these operations, yet the question must be asked—why are such operations necessary? What is the cause of the perforation of the food tract canals?

At a world asthma conference held early this year in London, it was stated that asthma was second only to gastric and duodenal ulcers in the cost of loss of working time. The figures given for both gastric and duodenal ulcers combined, indicated that they cost 262 days incapacity per month per 10,000 of the adult population. Working on a population of 57 million in Great Britain, and counting half of these as being adult, it would mean in round figures that 700,000 days, or actually 2,000 years of work per month were lost in England through this cause alone. Taking the 700,000 days lost per month, at a round figure of \$6 per day in loss of wages, it would mean that ulcers alone are costing Britain \$4 million per month, or \$48 million per year, without considering the pain and suffering involved.

If we apply this ratio to Australia, on an adult population of five million

it would mean that there would be 131,000 working days lost every month. Taking the average working wages of \$8 per day, duodenal and gastric ulcers could be costing Australia in the vicinity of \$1,000,000 per month, or a total of \$12 million per year in loss of wages alone; again to say nothing of the pain and suffering.

Is it not, therefore, of great national importance to endeavour to locate the cause of this ulceration and perforation of the food tract canals?

Why should the butterfat diet be so beneficial in such cases? It is interesting on this subject to review the research work of Fracer quoted by Haubold (1954). This research worker "expressed the significance of butter as a natural fat of circulation and set forth that the milk fat particles, in by-passing the liver in the form of small emulsion (emulsified) particles, enter the lymphatic system directly through the small villi of the human intestine. From the lymphatic vessels of the intestine—via the lymphatic system—they reach the circulatory system and, together with their vitamins, are carried to the individual organs of the body."

According to Haubold, this is the reason for the easy digestibility of butter in the case of small children and many sick people. Therefore it does not only depend on the digestibility of a fat or on its rate of absorption, or on its melting-point, but primarily on the path it follows in the organism.

The above quotation indicates that 11 years ago Fracer noticed the good effect of butterfat on the liver, yet in the meantime little has been done. Our work in Experiments 1 and 2 and the simple case history support Haubold, in so far as we have noticed the easy digestibility of butterfat by sick people.

Rationale of the butterfat regimen.

In some circles it has been suggested that we must isolate the toxin to prove our case. My reply is that to date no machine has yet been developed and no allergy test for heated fats has been devised, which can measure the sensitivity of oversensitive bodies. Furthermore the answer may or may not be found in actual toxicity, in lack of absorption, in possible liver enlargement or intolerance by the liver of heated fats, other than heated butterfat. It may be an allergen in heated vegetable and carcass fats, it may be a combination of all.

The reduced absorption affects the digestive organs, the liver, the linings of the stomach and may cause brittleness or hardening of the intestine tract; the constant use of other heated fats over three or four decades is, I consider likely, the reason why the over-forties suffer so much although young susceptible people may also suffer, possibly from allergic reactions. The change to heated butterfat apparently removes the cause, and the remarkable natural healing powers of the body take over.

Lea (1965), discussing what is the likely hazard in human food, stated—
 "Granted that strongly heated and badly oxidised fats are undoubtedly toxic in some degree, the question still remains as to whether or not any significant risk is likely to arise from the consumption of commercially or home cooked fatty foods and this is a much more difficult question to answer."

Lea continues—"that ill-controlled heating during domestic frying can cause much more extensive chemical changes in fat than occurs during carefully controlled laboratory or commercial frying operations. Fleischman and co-workers have stressed the same point. With an average temperature co-efficient of 2.0 per 10°C, a chemical reaction will be proceeding about a thousand times faster at 200° than at 100°C. Rapid oxidative destruction of vitamin E,

vitamin A, or carotene if present will occur in fats used for frying. Sahasrabudhe and Bhalerao have recently determined non-urea-adduct forming acids (i.e., polymeric and cyclic material) in a few samples of frying oils in commercial use and in fats extracted from market samples of fried foods. Three out of ten frying oils contained as much as 4.5% of NAF acids and two out of eight samples of fat extracted from fried potatoes contained 2-2.5% as compared with usually 0.5% in fresh oils."

Man is a carnivorous animal; this is proved by the structure of his teeth. As such he must consume some animal fats. Irrespective of what food he consumes he builds his own store of animal fats. No matter what type of food he consumes the excess will be built into his own human animal fats.

Considering that man is dependent on animal tissue, and also that he converts excess foods into animal fats on which he draws in time of emergency, we would have to assume the highly improbable proposition that nature has built in man, not one, but two self-destructive mechanisms. It would be safe to consider that animal fats, if consumed in the natural state, are not harmful to man's metabolism.

We have reason to say that animal fats may become dangerous to man when subjected to the severe heating of which modern stoves are capable. This alters severely their nutritional properties. Ever since man discovered fire he has been interfering with the chemistry of his food. Fortunately for him this interference has the least lethal effect in the case of one type of animal fat which is brought to him in the milk of his mother, or for that matter any mammalian mother.

So I suggest that today we are facing the situation that, irrespective of the origin of the fat, frying, cooking or baking may convert it from a nutrient into a toxin, producing an irritant or an allergen. We are fortunate, however, that even under these conditions, milk fat is the toxic, if toxic at all.

Our hypothesis calls for extensive testing under controlled conditions. These tests cannot be done in part, but must be done in whole, following the regimen in all detail. The disorders which tend to improve are digestive disorders including heartburn during pregnancy; liver disorders, duodenal and gastric ulcers, gastrointestinal disturbances, including haemorrhage, diarrhoea and constipation. The present work has not included the possibility that the method of frying and of food preparation itself could have contributed to the beneficial results obtained, and this must be checked.

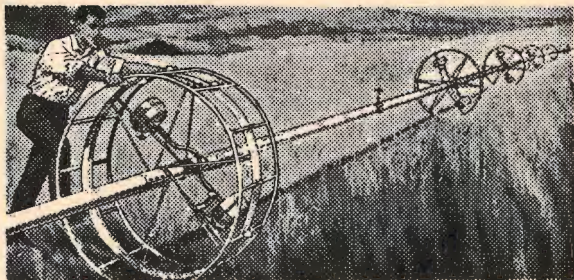
Conclusion

The dairy industry must support research to find the truth in regard to health and the consumption of dairy products. Whilst the margarine industry has used and is still using the cholesterol theory to blacken the image of butter and promote the image of their product, I have submitted one hypothesis in regard to the presence of an allergen in heated fats other than butterfat, well as clinical evidence of numerous cases of chronic diseases benefiting from the use of butter and butterfat for all cooking purposes and for spreading.

The knowledge we already have on this matter could well be used to combat the unjustified attacks on the health value of butterfat. Public relations officers, health lectures, health cooking, cooking demonstrations, radio and TV talks, chef courses, industrial cooking courses, lectures to medical seminars, in fact every facet in which personal contact can be used should be employed to this end. A concentrated effort by the whole industry is necessary.

Attack is our best defence. Let us prepare to attack, our markets to win back and the health of mankind to improve.

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JAPANESE EATING MORE DAIRY PRODUCTS

The sharply increased consumption has put pressure on the government to allow more imports of manufactured dairy products, including non-fat dry milk, butter and natural cheese.

The reason for the need for such imports is that there is a sharp rise in the amount of milk that is being channelled into the growing fluid milk market. Despite an increase in milk production, consumption is going up far more rapidly.

Last year, production was 7,100 million pounds, seven per cent. more than the previous year. Consumption of fluid milk also rose seven per cent. and milk used in processing by six per cent. But during the early part of this year, milk production increased seven per cent compared to an increase in consumption of fluid milk of 17%.

Japanese ice cream and confectionery manufacturers have asked the government to allow imports of 25 million pounds of non-fat powder this year, 19% more than in 1964. Dry whole milk imports also are being considered for ice cream and confectionery manufacturing.

Increases in butter imports are being requested and are expected to total 8-10 million pounds this year compared to less than 250,000 tons two years ago. Natural cheese imports are expected to increase again this year about 20% more than last year to a total of 25 million pounds. In 1964 they rose by 27% and last year by 20%.

14th ANNUAL AUTUMN JERSEY FAIR

To be held on 8th March

Twenty-two jersey breeders have entered stock for competition at this year's Jersey Fair. The prize catalogue abounds with trophies, in fact it is hard to find a class that doesn't carry a trophy for first prize. In all, trophies to the value of \$330 have been offered for competition.

Breeders making their debut at the Fair are: V. M. Hall of Wunka, W. T. Judd of Tarpeena, C. R. Blacker of Kangarilla and R. A. & O. B. Emmerson of Nairne. It is some years since there was an interstate exhibitor present, but this year W. J. Clark of "Glenavon" Stud, Victoria, has entered five exhibits.

Mr. Graham Robinson of Correna Stud, Tongala, Victoria, will be the judge. He is a member of the Victorian State Committee, and is held in high esteem as a judge in the Eastern States.

Last year a judging competition was introduced to the Fair, and this event created so much interest that it is to be staged again this year. The competition will be judged by Mr. Graham Robinson, and the time of this contest will be announced during the morning.

As usual, admission to the Wayville Showgrounds is free, and ample space is available for parking vehicles. The judging will be on the grassed area to the South of the Jersey Pavilion.

Mr. David Robinson, of Jamestown, President of the S.A. Branch of the A.J.H.S., said this week that, apart from the judge, a number of interstate Jersey enthusiasts are expected to attend the Fair. Mr. Robinson added that this is the Jubilee Year of the South Australian Branch, and many local Jersey breeders will attend to admire the high quality stock which all have come to expect at the Autumn Fair.

Stewards who have been appointed to assist Mr. David Robinson are Mr. H. L. Bowey of Salisbury and Mr. Peter Whitford of Myponga. These three men have been working together as a team for many years now and have attained a high degree of efficiency. In fact, interstate visitors are always loud in their praise for the competent way in which the Jersey Fair is conducted.

The committee of the S.A. Branch is most grateful to those firms and individuals who have donated trophies. Their generosity considerably helps to make the prize schedule so attractive.

CAN YOU SPONSOR THIS MIGRANT?

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If you can help, a call to this office, 51 3034, would be appreciated.

DO YOU ENJOY PAYING TAXES?

Basic Facts:

Australia has Commonwealth Taxation and State Taxation. There is one Federal Treasurer and six State Treasurers—all of them are required to raise annual amounts of tax that increase substantially year by year.

What is more, as the members of our Association will accept at once, we, as Dairymen, employed in our own enterprises, are among the more heavily taxed groups of our Community.

The Taxes We Pay:

Our businesses are taxed with stamp duties, sales taxes, income taxes and various other imposts—often including a profits retention tax that hits many of us.

Personally, we pay stamp duties, gift duties, sales taxes, excise duty, income tax and finally, death or estate duties. And this is not a complete list.

What to Do:

Let us accept that, as responsible citizens, we recognize the necessity for taxation. Equally, however, as responsible business men, enlightened self-interest requires that we should take advantage of the remissions of tax legally provided in the various pieces of legislation enacted.

We must also recognize, for our own sakes, that the tax provisions governing our financial lives are not "once-for-all-time" enactments. They change over time and it is generally true that greater restrictions are imposed as time passes. An ever present danger, particularly with estate duties, is that tax changes can be retroactive. Plans made thoroughly and carefully, say, ten years ago, to legitimately avoid tax, may be set aside by some later alterations to the Acts concerned.

So realism demands that we make periodic reviews of our business and family financial arrangements.

Our Advice:

It is beyond the scope of our function to provide Association members with a comprehensive, unbiased tax-survey service. This is not one of our activities.

However, we, as members of the South Australian Dairymen's Association, have available to us the tried and proven resources of our affiliated Company, Federation Insurance Limited. Over many years, this organization has given to our members an unexcelled General Insurance service and, since the beginning of 1964, the Company has been actively engaged in the Life Assurance field also. Thus, we receive from Federation Insurance Limited a comprehensive insurance service covering all fields of insurance. It is necessary to realize that it was in response to the interest displayed by its affiliated Associations, that Federation Insurance Limited entered the Life Assurance field and, further, set up self-employed persons and employees Retirement/

Superannuation Funds of a type particularly designed to meet our needs. It is an extension of this service that, in the last two to three years, our Associated Company has made an extensive survey of the Income Tax and Death or Estate Duty Legislations of the Commonwealth and Australian States. This was done because estate planning is essential if taxes are to be legitimately avoided to the maximum, and accumulated estates preserved so far as it is possible, for the benefit of our heirs and successors.

Space does not permit us to give a comprehensive statement of all that Federation Insurance have done to further their knowledge and the quality of their service to us as an affiliated Association. We urge, instead, that you take full advantage of the service which is freely available to you in order to ensure that:

- (a) *You are paying no more income tax than is necessary.*
- (b) *That your estate is protected to the maximum against estate or death duty inroads.*
- (c) *That you are making the best possible use of taxation provisions for the tax free accumulation of adequate retirement or superannuation benefits.*

Unless you are absolutely certain that nothing further can be done for you in the three areas named above, it is strongly recommended that you contact Federation Insurance Limited as soon as it is reasonably possible for you to do so and get from this Company their advice with regard to your own situation.

VICTORIAN FRIESIAN BREAKS NATIONAL BUTTERFAT RECORD

A record-breaking yield of 1473 lb. butterfat in 300 days, the highest ever in Australia, has just been completed by Mont Pellier Royal Duchess, a five-year-old Friesian owned by A. and M. Turner, of Red Bluff, in north-eastern Victoria.

The previous Australian record, 1292 lb. in 273 days, was established in 1924 by an Australian Illawarra Shorthorn, Melba 15th of Darbalara. (Melba's lactation was continued to 365 days to yield 1614 lb. fat.)

Duchess's milk yield, 28,350 lb. at 5.2 per cent test, eclipses by 1749 lb. the Victorian all-breeds record set in 1949 by a Friesian, Ingolston Gwen, owned by P. Goodfellow and Sons, Longwarry.

The Friesian Cattle Club of Australia states it knows of only one other cow in the world which has given more than 1400 lb. fat in 300 days or less. She is a United States of America Friesian, Princess Breezewood R. A. Patsy, which gave over 1500 lb. in 300 days, but had the advantage of being milked three times daily.

Duchess's sire is a Riverina-bred bull, Galaview Royal Reward. Her dam is Mont Pellier Darcy.

During her record-breaking lactation, she was check-tested four times by the Department of Agriculture.

Her performance is all the more remarkable because she suffered on occasion of acetonaemia in the eighth month of her test.

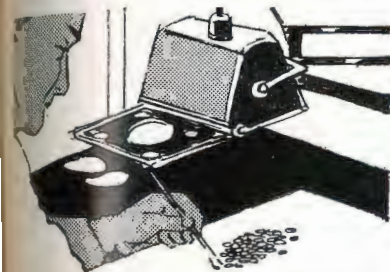
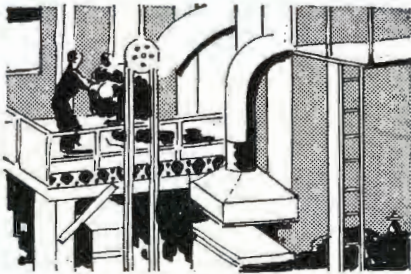
During the lactation she was also exhibited at provincial shows in northern Victoria.

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THE SOUTH AUSTRALIAN

DAIRYMEN'S . . .

Journal



Official Publication of the

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Vol. 6, No. 5

Adelaide, MAR.-APR., 1967



—Photograph by courtesy of "The Chronicle"

INVERLAW SYRIAN BOUQUET 4th

— Award Cow in Milk, Best Udder — Autumn Jersey Fair, 1967

and Exhibited by M. R. & J. E. MCKENZIE — VYNETTE —

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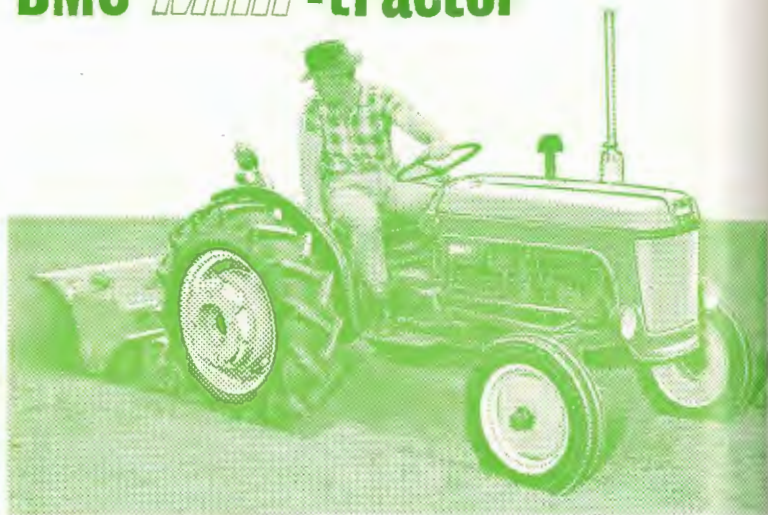
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New Stabilisation Plan Closely Follows Industry's Submission

The November-December issue of this Journal contained full details of the proposals submitted to the Federal Government by the Dairy Industry Council as to the form the new Five-Year Dairy Stabilization Plan should take. The proposals emphasized the necessity to continue the bounty scheme at least at its present rate, to lift the underwriting of opening values, to provide financial assistance for dairy-farm and dairy-factory reconstruction and to retain legislative control over margarine production. It is gratifying to be able to report that the Council's submission has been accepted almost entirely as the form the new stabilization legislation now being considered by the Federal Parliament.

The Second Reading speech of the Minister for Primary Industry (the Rt. Hon. C. P. Adermann) is printed below:

DAIRYING INDUSTRY BILL 1967

The current Five Year Dairying Industry Stabilization Plan, which is the fourth such successive plan, is due to terminate on 30th June next. In his policy speech on 8th November, 1966, the Prime Minister stated that it would be the Government's policy if returned to office, to consult with industry bodies on a further five year plan. This policy was given the endorsement of the Australian electorate.

As an element of each of the five year plans which have operated over the past 20 years successive Commonwealth Governments have provided a production bounty for the benefit of the Australian dairying industry. Such a provision is regarded as a sound investment in a vital area of primary production. The aim of the bounty is to maintain at reasonable levels the cash returns received by dairy farmers who supply milk and cream for manufacturing purposes. Moreover the fact that the farmers receive such returns through the operation of the bounty means that the prices of butter and cheese paid by Australian consumers can be held down to levels that would otherwise not be possible. The dividends from the provision of bounty can be clearly seen in increased production, im-

INVERLAW SYRIAN BOUQUET 4th

Winner of the Aged Cow in Milk Class and Best Udder at the 14th Jersey Fair, 1967, and Reserve Champion (with Best Udder) at the Brisbane Royal Show in 1964 is by the imported Jersey Island BOUQUET'S DREAMING HECTOR, out of INVERLAW DREAMING SYRIA 4th. The dam of this cow's sire, SEER'S BOUQUET, was four times judged Champion Cow of Jersey Island.

proved productivity and increased foreign exchange earnings from the export sales of our dairy products in the face of the keen competition that exists in the international trading of these products.

In October last, representatives of the industry submitted proposals for a Five Year Stabilization Plan to begin on 1st July next immediately after the end of the current plan. The Government looked at these proposals in the light of the Prime Minister's statement on the dairying industry and decided on the plan which I shall now outline.

Bounty To Continue At \$27m.

On the matter of bounty I am pleased to announce that the Government has decided to allocate for each of the five years of the new plan a sum of \$27 mil. as bounty on butter and cheese and related butterfat products produced in Australia. This was the amount provided for each year of the current Plan.

Under the existing legislation, which authorises the payment of bounty and specifies the procedure to be followed in disbursing the bounty to dairy farmers, bounty is payable only until 30th June, 1967.

The purpose of this Bill is to extend the provision of the legislation to provide for the continuation of the payment of the bounty on the production of butter, cheese and other related products containing butterfat for a further five years ending on 30th June, 1972.

The Government has also decided that the bounty payable on the export of processed milk products will be continued for each of the five years of the new plan. The Government's decision in this regard is reflected in a Processed Milk Products Bounty Bill which I am introducing in conjunction with this Bill and would wish to be considered concurrently with this Bill.

The bounties provided for in this Bill and its complementary Processed Milk Products Bounty Bill are not, of course, the only features of the Plan but they are the only two that require immediate legislation. Those points of the scheme that will ultimately require arrangements between the Commonwealth Government, some State Governments and industry bodies cannot be spelt out in legislation, at least at this stage.

Underwriting Increased to 34 Cents

The Government has also decided to continue for the duration of the Plan the principle of underwriting equalisation values for butter and cheese at levels which will enable the Commonwealth Dairy Produce Equalisation Committee through the factories to make a reasonable first payment, including bounty, to dairy farmers.

The level at which equalisation values are to be underwritten will be determined each year. For the first year of the new stabilization plan, 1967-68, the values will be underwritten at a level which will enable factories with average manufacturing costs to pay producers 34 cents per lb. commercial butter basis. This is an increase of approximately 1 cent per pound over the rate which has been underwritten since the inception of the arrangement in 1958.

The underwriting arrangement was never intended to be a price support measure and the Government does not intend to underwrite a figure in any year which is going to involve it in a residual financial liability. If returns in any year are estimated to fall then the level at which returns will be underwritten will also fall. The industry is aware of this and appreciates that the value of the arrangement lies in the ability of the Equalisation Committee to make higher initial interim payments than would be otherwise possible.

Industry Reconstruction To Be Assisted

In its submission to the Government the industry made certain recommendations seeking measures of assistance specifically to aid marginal producers to build up their properties to profitable working units, or, in some cases, to leave the industry.

By instituting the Commonwealth Development Bank, by establishing the Term Loan Funds and by setting up a Farm Development Loan Fund administered by the trading banks to supplement the previously existing sources of farm finance, I believe that this Government has ensured that economically viable dairy farmers, in common with other primary producers, have access to finance for soundly based investment to increase farm efficiency and farm profitability. But there is a group of marginal dairy producers whose farms fall into a different category. These are farms which, for a number of reasons, commonly because they are too small, are not able under normal circumstances to become payable propositions with today's production methods and today's markets. If such people are to share in the advantages of increased living standards in our country they will need to be helped. For some this may be to enable them, if they so desire, to leave the industry to take up some other occupation. For others it may be in the form of assistance in the reconstruction of farms to the stage where they can be operated on a payable basis whether in dairying or in some other line of production.

The Government has agreed in principle to assisting the industry with respect to the problem of the marginal dairy farmer but the ways in which this help can most effectively be given have yet to be worked out. Much thought has still to be given to the practicable ways and means to achieve this end and there will of course need to be discussions with the industry and with State Governments.

Consequently the Government feels that at this stage it need only signify to the industry that it is willing to provide assistance to high cost and marginal producers. At the same time the Government will ensure that there will not be any undue delays in getting such an important scheme under way.

With the view of further improving the economic position of the industry and of overcoming some of the problems of the changing marketing patterns of dairy products the industry also recommended that Government assistance be given on the one hand to Australian factories to develop facilities for diversifying production away from butter and on the other to the Australian Dairy Produce Board to expand its overseas milk recombining plants.

In this respect where it can be demonstrated that funds are not available from normal financial sources the Government will be prepared to examine applications by factories or by the Board for a Commonwealth loan or guarantee.

Now that I have outlined new arrangements which will operate during the new Five Year Plan I should like to turn to a further matter, which is of major importance to the dairying industry and which has received considerable publicity lately. I refer to the quotas imposed by the State Governments on table margarine production.

Margarine Controversy

All members are aware of the butter-margarine controversy which has engaged considerable public attention for some time.

This controversy arose out of the prosecution by the N.S.W. Government of Marrickville Margarine Pty. Ltd. a holder of a New South Wales table margarine quota. The history of the prosecution of this company is well known. It culminated in the refusal by the Judicial Committee of the Privy Council of special leave for the company to appeal against the unanimous judgment of the Australian High Court that New South Wales legislation had been contravened.

During the course of the litigation and since, the Marrickville Company has conducted an extensive public relations campaign aimed at arousing public support for its cause and bringing pressure on the New South Wales Government to increase or abandon quotas. I am sure Honourable Members are familiar with the Marrickville campaign.

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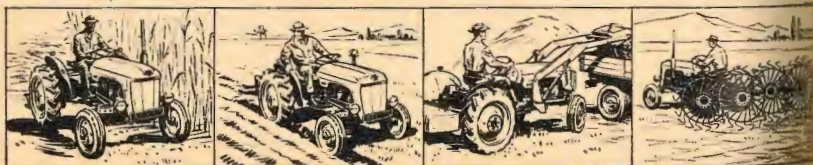
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Imitation Milk Poses Serious Threat

Filled milk, banned in Australia, is posing a threat to the milk industry in California (U.S.A.) and the dairy industry is seriously concerned.

Writing in "Farm Journal," the associate editor evaluates the position as follows:

"Will milk substitutes grab a piece of the fresh milk market, now that milk prices are going up? A lot of people think so, and dairymen are afraid so.

"I've just checked market people here in California, the one state where 'filled' milk is legal, and can only conclude that it is a real threat to milk. (In filled milk, the butterfat is replaced with vegetable oils.)

"California law governs minimum milk prices, but the 'imitations' sell in an unrestricted price world all their own. So they're moving.

Making a Splash

"Three imitations are making a splash in the Los Angeles milk shed. They sell for 39c a half gallon, and no law keeps them from selling for less. In San Francisco, where another filled milk sells for 45c a half-gallon, regular milk brings 59½c at stores.

"The big danger to dairymen is the fact that manufacturers of imitation milk are coming closer to a product like cows' milk.

Isolated Areas

"Filled milk has been used for years by the armed forces at isolated bases, because vegetable oils don't turn rancid in storage as rapidly as butterfat does. A 40-year-old law makes it illegal to ship it across State lines.

"Scientists are experimenting with imitation milk made from soybeans. They're looking for something to feed babies who are allergic to cow's milk.

"Obviously, we'll be hearing more about imitation milk."

One reason why the imitation milks now being sold in California are able to cut prices below regular milk is that the manufacturers are able to buy nonfat dry milk solids, which they then recombine with their cheaper vegetable oils, at prices that are lower than what dairy companies pay to farmers for fluid milk for bottling. The non-fat dry milk provides most of the nutrient values in the filled milk products.

The Federal Government is not statutorily involved in table margarine production quotas but through the Australian Agricultural Council the Federal Government provides a forum for discussion between State Ministers for Agriculture on margarine.

In the course of the Australian Agricultural Council's meeting last February, Ministers discussed in detail the situation with regard to margarine quotas in Australia coupled with the related subjects of the position of the dairying industry and of vegetable oilseeds production.

Ministers unanimously agreed that the principle of quotas on margarine production was sound and that the quota system administered by the States should continue to operate. It was agreed that the whole question will be kept under constant review by the Council.

Oil-Seeds Not Restricted

It has been claimed that the States' table margarine quotas are inhibiting the development of the Australian vegetable oilseed industry and that a position of over-supply of oils from these crops, particularly safflower oil and cottonseed oil, is being reached which can only be overcome by additional table margarine production. Members of the Australian Agricultural Council agreed that on figures presented at the meeting such a pessimistic conclusion was not warranted.

In reaching this conclusion the Australian Agricultural Council accepted an estimate that Australian usage in 1965-66 of edible type vegetable oils including those used in table margarine manufactured in excess of quotas was about 59,000 tons. Of this some 16,500 tons were used for industrial purposes. Usage for edible purposes could therefore have been as high as 42,500 tons.

Usage of vegetable oils for edible purposes exclusive of oils used in table margarine manufactured in excess of quotas, is in the vicinity of 35,000 tons a year. This quantity together with the 16,500 tons of edible type vegetable oils used for industrial purposes, would allow an annual total usage of some 51,500 tons of edible type vegetable oils if table margarine production is confined to quotas.

The Council also accepted an estimate of production of edible vegetable oils from Australian grown oil seed crops in 1966-67 of 16,850 tons. Coconut oil produced in Australia from copra imported from Papua-New Guinea amounts to some 18,000 tons each year.

Production of edible vegetable oils from Australian grown oilseeds and from copra imports from Papua-New Guinea will thus total 34,850 tons. The margin between this figure and the total estimated quantity of 51,500 tons of edible type oils which would be used even with table margarine production confined to quotas, is 16,650 tons. As there is a high degree of substitution possible in the usage of various edible vegetable oils, there would be considerable scope for expansion in local production of oil seed crops without cutting into imports of copro from Papua-New Guinea.

Imports need to be made to meet the shortfall between local supplies and the total usage of edible vegetable oils. For instance in the first eight months of 1966-67, 3,738 tons of safflower oil were imported into Australia compared with 1,547 tons imported for the corresponding period of 1965-66.

No Shortage of Poly-Unsaturates

With regard to table margarine itself it has been claimed that as a result of the enforcement of production quotas there is a shortage of one brand of the poly-unsaturated variety of table margarine. I would not wish to enter into arguments over particular brands but it would appear that other brands of poly-unsaturated table margarine made from vegetable oils which have comparable properties, are freely available.



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Country Rep.: J. Simmons,
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291/S

The largest Australian manufacturer has stated that poly-unsaturated margarine represents less than 20% of all table margarine production, that many manufacturers produce it and that any increase in demand could readily be met within existing licences. It would therefore appear that supplies of this product which is claimed to have special properties would continue to be available within the existing quota arrangements.

In Western Australia, where a shortage may have been developing, the Western Australian Government has licensed the manufacture of the remaining 200 tons of the State's overall agreed quota of 800 tons. This should help to overcome any immediate shortage in supplies which may have been developing in that State.

The Australian vegetable oil industry is only one primary industry with a stake in the table margarine quota question. Another industry vitally concerned is the dairying industry, an industry which ranks fourth in Australian primary production. The dairying industry depends heavily on the fortunes of its main product, which is butter, and it is most important that sales are not eroded by the substitute table margarine.

Value of Dairying to National Economy

The dairying industry plays an impressive part in Australia's economy. Current production excluding the value of pigs is worth about \$415 million a year. Capital investment is over \$1,400 million and the industry supports directly and indirectly 600,000 people, providing direct employment for over 100,000 of these. Moreover, no Australian industry does more for decentralisation throughout Australia. This industry assists secondary industries by substantial expenditure on containers and packaging, factory operation and maintenance and at the farm level, on machinery and equipment.

A further valuable contribution to Australia's economy, which I have already mentioned, is the export income earned by this industry. The dairying industry exports to 94 highly competitive, low priced overseas markets to earn annual export credits of over \$100 million essential to Australia's development and the maintenance of high standards of living. The industry is only enabled to do this by equalising returns from exports and local sales. The margarine quotas exist to aid the industry in maintaining its position in the home market. Any expansion of margarine production for domestic consumption alone would benefit imports and importers to the detriment of an industry that is decentralized, has diversified its production and markets and is earning considerable amounts of overseas exchange.

Opportunities to exploit export markets exist as much for the margarine industry as they do for the dairying industry; but the margarine industry is content to produce almost entirely for the higher priced local market and has shown no inclination to produce for the lower priced export markets.

Industry's Own Efforts Commended

Though the bounty has been an essential factor in the dairying industry's operations for many years now, the industry's own efforts in aiming for stability should not be overlooked. In the current financial year the dairying industry will have contributed over \$2 million for research, promotion and overseas marketing. Through internal co-operation between the producing, processing and marketing sectors of the industry and through their co-operation with the Commonwealth and State Governments, in the fields of research, promotion, extension and marketing, the industry has attained a reasonable degree of stability. Undoubtedly this stability has been assisted by the Federal bounty and the Government has decided that it is essential the bounty should be maintained.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1966	1967	1965/66	1966/67	1966	1967
Jan.	4,035	4,514	32,952	34,721	4,035	4,514
Feb.	3,026	3,446	36,158	38,167	7,241	7,960

SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1966	1967	1965/66	1966/67	1966	1967	1966	1967
Jan.	1,721	1,645	12,138	12,067	42.7	36.4	22.4	19.73
Feb.	1,674	1,720	13,812	13,787	52.2	49.9	26.50	25.31

Moving average quota for 12 months ended 31/1/67, 41.11%;
28/2/67, 41.01%.

INTERIM PRICES TO LICENSED SUPPLIERS

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

1966	Basic (per lb. butterfat)	C.M.B.	Total	3%	3.5%	4%	4.5%	5%
Jan.	36.69	19.73	56.42	17.47	20.38	23.29	26.20	29.11
Feb.	38.97	25.31	64.28	19.90	23.22	26.53	29.85	33.17

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	January		February	
	1966	1967	1966	1967
Butter—Choicest Australian	304/-	300/-	304/-	300/-
Cheese—First Grade Australian	235/-	240/-	235/-	240/-
Rindless Australian	260/-	265/-	260/-	265/-

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CERTIFICATES OF TEST OF PERFORMANCE

Model:	R150	R200	RH250	RL250	R300	R400	R500
Cert. No.:	D.P.65C9	C.P.66C3	C.P.66C11	C.P.66C10	C.P.66C8	C.P.66C13	C.P.66C9

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No. 8/4 COMPLIES WITH MILK BOARD REQUIREMENTS IN EVERY STATE.

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- New round design for minimum space requirements
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co-operative Ltd.

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MELBOURNE: 63 Charles St., North Coburg, Victoria. 35-2347.

BRISBANE: 491B Stanley St., South Brisbane, Qld. 4-5452.

(A unit of Dairy Farmers' Co-operative Ltd.)

MARGARINE LEGISLATION UPHELD BY AGRICULTURAL COUNCIL

Despite a high-pressure public relations campaign designed to influence political as well as public opinion in favour of abolishing the quota restrictions on margarine, the Australian Agricultural Council, which is composed of the Federal Minister for Primary Industry and the Ministers of Agriculture in each State, decided at its meeting in February to recommend to all State Governments, which are responsible for margarine legislation, the retention of the quota system.

The South Australian Dairymen's Association put before the Minister of Agriculture (the Hon. G. A. Bywaters) its views on the matter, and the Association's General Secretary (Mr. D. J. Higbed) was joint leader of a deputation to the Minister representing all sections of dairy production and manufacturing interests.

Our colleagues in the South East were active also, and at a public meeting in Mount Gambier, the President of the South Eastern Dairymen's Association, Mr. E. L. Gaffney, provided the farmers present with the facts necessary to defend their industry.

Because we believe Mr. Gaffney's address crystallizes the arguments which the industry has summoned for its protection we reprint it here in full.

+ + +

I absolutely refute all statements made from time to time accusing the dairying industry of being inefficient, and the tendency to couple small farms with inefficiency.

Such statements have been circulated recently only for the purpose of gaining support for increased quotas for margarine.

My highest admiration goes out to all those dairy farmers in the south-east who had the foresight to form themselves into one united voice by the formation of the South-East Dairymen's Association of South Australia in 1939.

Up until then south-east dairymen had no say in their industry. They very quickly formed themselves into 11 branches with their central council in Mount Gambier.

This completed the full circle of all dairy farmers being united right throughout Australia on a State level, and linked together on a Federal level by the formation of the Australian Dairy Farmers' Federation, which is recognised by the Federal Government as the voice and the parliament of the dairying industry.

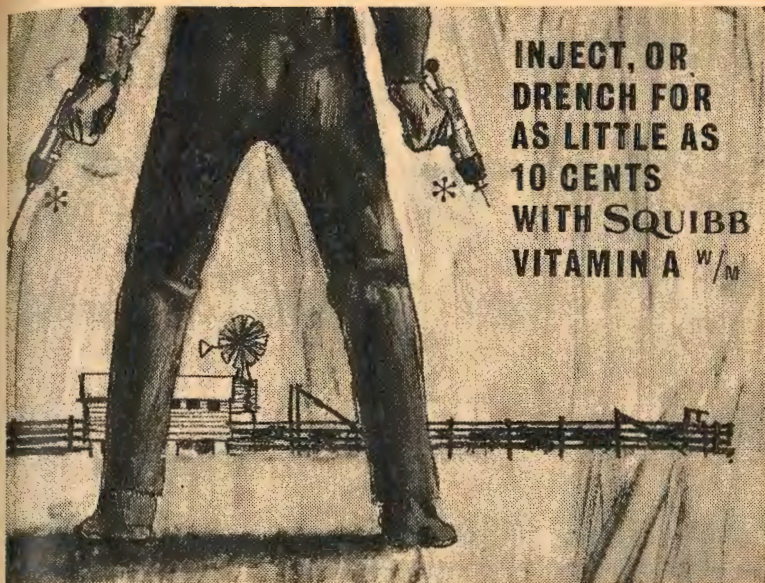
As it would not be possible for me tonight to give you full details of just how much you have improved the efficiency of your industry through your own specialist organisation, I have decided to ask your central council to approve of me writing a news letter to every dairy farmer in the south-east giving them a full and clear picture of the great value they have gained by being loyal members of their own association.

If you dairy farmers will take my advice, you will always remember a strong united voice is your strength and you will speak through your own association to your national parliaments when you have any problems to overcome.

You have solved many problems since 1939 and now you have this margarine question in which you must show your strength and unity.

You have a good case as dairy farmers and it's up to you through your own leaders to present your case.

Marrickville margarine interests, following non-success through the courts, launched a drive for an increase in the margarine quotas which, should it be granted, would weaken the dairying industry, as well as the economy of South Australia.



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Your industry is now very efficient and still fast becoming more and more efficient. Any increase in the quota of table margarine would retard further efficiency and weaken the dairying industry as well as the economy of South Australia.

TELLING POINTS

I feel the general community should be told how much the dairying industry does for the economy of Australia and I quote the following points which could be of great interest not only to dairy farmers but to the public in general.

- The dairying industry from its natural resources produces many highly nutritive foods such as cream, butter, numerous lines of cheeses, fresh milk, preserved milk and milk foods; the margarine industry cannot provide these numerous lines.
- The dairy industry supports more than 600,000 Australians. On Commonwealth statistics, fewer than 2,000 are employed in the manufacture of margarine.
- Dairy produce brings Australia over \$104 million a year in export earnings. Margarine earns Australia nothing.
- The dairy industry does not spend a cent on importing raw materials. Margarine manufacturers are major importers of materials used in production of this substitute product.
- Gross value of output from dairying runs at about \$477 million, compared with \$48 million from margarine factories.
- For every \$1 received in subsidy, the dairy industry earns \$4 in export income for Australia. Dairy produce is exported to 94 countries.
- Every 5,000 tons of butter displaced from the home market by margarine represents a loss of \$2 million to the national economy.
- Australians pay less for butter than any country in the world except New Zealand and the United Kingdom.
- Since 1958 the dairy industry has spent \$3,551,878 on research projects, including medical and nutritional research, improved production methods and animal husbandry.
- All medical authorities recognise butter, milk and cheese as natural products having considerable nutritive value. Medical opinion is divided throughout the world on the value of so-called Polyunsaturates.
- Dietitians have proved that butter and margarine contain the same amount of fat, and that butter has a lower calorie count.
- Decentralisation is Australia's greatest need and no industry does more in this respect than the dairy industry.
- Dairying supports secondary industry to the tune of \$68 million per annum in machinery and equipment purchases; \$20 million spent on containers and packaging, and \$236 million for the operation and maintenance of butter, cheese and milk factories. Other figures supporting the dairy industry's case have been researched and documented, and can be made available on request.
- Remember, when you are putting your case to the State and Federal Governments, always speak through your own dairymen's association, formed by the dairy farmers themselves, and your Australian Dairy Farmers' Federation is your Parliament.

And I say to you all: don't divide your voice; stay united and carry on the battle against any increase in quotas of table margarine for the benefit of Australia's economy.

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Detergents**

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Non-Ionic (Post-Rinse)**

Equipment, Refrigerator Shelves, Etc.

S.A. MINISTER SPEAKS OUT AGAINST MARGARINE

The dairying industry in South Australia has every reason to be grateful to the Minister of Agriculture (Hon. G. A. Bywaters) for his positive stand in the margarine controversy.

Not only has Mr. Bywaters given his assurances directly to the industry's spokesmen, he has also placed them before Parliament, as the following reply given to Mr. Hurst, M.P., on 1st March, 1967, indicates:

The Hon. G. A. BYWATERS: I cannot say how the industry the honourable member refers to would have been affected if quotas had been increased. If they had been increased I believe the allocation of that increase would have been decided by an independent committee, but the Agricultural Council decided unanimously that there would be no increase in quotas at this time. Mr. Deputy Speaker, the particular company the honourable member referred to (Unilever) wrote to me asking that the quotas be increased or, alternatively, that they be abolished altogether.

I also had this request from two other leading margarine companies. I asked the particular company concerned and two other companies what would be the result to South Australia if quotas were abolished, and where they would manufacture, and they all said that they would manufacture not in South Australia but in New South Wales. Therefore, if the quotas were abolished we would lose the industry referred to by the honourable member. I might add that one company that has had much prominence and spent much money on advertising claimed that it could manufacture wholly with Australian-produced vegetable oil. However, I doubt that very much indeed, and I have some figures here to confirm my doubts. This year the total quantity of vegetable oil produced in Australia was 16,850 tons, made up of 10,00 tons of safflower oil, 4,650 tons of cottonseed oil, and 2,200 tons of peanut oil, whereas the current Australian usage of edible type oils, including that used in excess table margarine manufacture, is estimated at about 59,000 tons, of which some 16,500 tons are used for non-edible purposes, such as paint and stock food, while usage for edible purposes could be as high as 42,500 tons. Members will see that there is quite a large difference there.

It is interesting, too, to note that in the case of safflower, although a record production of 10,000 tons will probably be achieved this season, imports in the first five months of the present financial year totalled 3,383 tons or almost as much as the importation for the whole of 1965-66, which amounted to 3,605 tons. Therefore, it appears that there is still an increasing amount being imported into Australia. Regarding Marrickville Margarine Pty. Ltd., it is pertinent to note that this company, which is at the centre of the table margarine quota controversy, produced 5,543 tons of table margarine between July 1 and November 10, 1966, while it had no licence. Since its licence was renewed on November 10, 1966, entitling it to produce 2,166 tons between November 10, 1966, and June 30, 1967, its actual production up to January 31, 1967, has been 336 tons. Thus its average weekly production since the renewal of its licence has been only 28 tons a week, whereas it could have been producing at the rate of 65 tons a week. Therefore, this statement does not add up with the claims it makes.

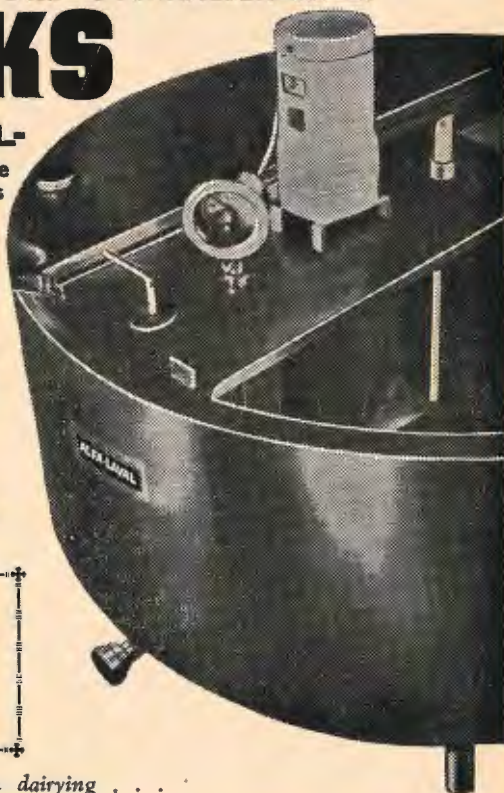
Regarding the suggestion that this company could manufacture wholly with Australian-produced vegetable oil, I wonder how this would be policed, because the company makes other products as well. There is a distinction between table margarine and cooking margarine, plus cooking oils and salad oils and other things they make, so this production would be difficult to police. In fact, I have estimated that it would take at least 60 employees of mine to be in one factory alone to police this, and, as I said, if one company did this other companies would do it. In effect, it would be an abolition of quotas if this took place, and this is what this company is aiming at; and if this happened there would not be any margarine manufactured in South Australia, on the admission of at least three companies.

BULK MILK TANKS

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FIRST** to meet the
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laid down by the
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"A production 200-gallon unit selected from a stock batch model has been tested by the State Electricity Commission of Victoria for compliance with specification No. ASN46/1-1963 of the Standards Association of Australia, and its report No. 64.C2/ASN46 may be inspected on request."



Higher quality milk! Less work!
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- The tank is mounted on stainless steel pipe legs with adjustable feet and is fitted with hinged, self-supporting, interchangeable, removeable covers for easy access.
- Highly polished walls, sloping floor, and 2 in. outlet pipe enables rapid draining, efficient cleaning and minimises milkstone formation.
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"UNDER ITS TRUE COLOURS"

Although the margarine quota system has again received the endorsement of the Australian Agricultural Council, there is strong opposition to it from many quarters, particularly the ranks of agricultural economists, and we should always be conscious of the fact that continued pressure from vested interests may eventually bring about its complete breakdown, as capitulation by a single State would make the whole quota legislation unworkable.

The argument against the quota system is usually on a moral basis, the restriction of the buyer's freedom of choice, but opponents of quota legislation completely overlook the moral aspect involved in the deceptive nature of margarine, **which relies for its sales solely on the fact that it pretends to be something which it is not.** The flavour, the type and size of package, and the colour are all designed to imitate butter.

Generally the housewife knows what she is buying, because the margarine is branded as such, although there are many instances where bulk margarine is sold as "butter", unlabelled and unbranded, particularly in butchers' shops, but the customer in the hotel, restaurant or sandwich bar has no way of knowing that he is being served margarine.

For this reason, and because the quota legislation does not control "cooking" margarine, which has a ready sale as a spread, the South Australian Dairymen's Association submitted to the Australian Dairyfarmers' Federation a proposal, based on the very effective "filled-milk" legislation, that **"uniform legislation be introduced in every State prohibiting the manufacture or sale of any product which is a colourable imitation of butter and which contains any substance other than salt or water not obtained from the lacteal secretion of the cow"**.

This proposal, which has been accepted by the Federation for possible future action, would have the effect of forcing all margarine to be marketed "under its true colours", namely near-white. This would not prevent housewives buying it when the household budget so dictated, or when, for imagined health reasons, a person wished to avoid "animal fats" (which are, of course, almost the sole ingredients in all except the high-priced "poly-unsaturated" margarines), but it would allow the consumer to know that it was margarine that was being served.

A further proposal also accepted by the Federation, submitted by the Tasmanian Formers' Federation, would require the constituents of, and the percentage of each of the ingredients in margarine to be prominently displayed on each pack offered for sale. In view of the sources of ingredients for margarine quoted in this Journal from time to time, such legislation could provide some very interesting reading.

U.S.A. TO HOST WORLD JERSEY CONFERENCE

The United States, for the first time, will play host to the Jersey cattle breeders of the world when the Sixth International Conference of the World Jersey Cattle Bureau is held in 1968 in Columbus, Ohio.

The five-day conference will be held October 7-11 and will afford member countries and individuals the opportunity to exchange research data, discuss common problems and visit Jersey farms, dairy plants and agricultural research stations. Delegates will also be able to attend the annual All-American Jersey show and sale to be held October 12-16 in Columbus.

Member countries of the World Jersey Cattle Bureau are the United States, Australia, Canada, Denmark, East Africa, England, France, Isle of Jersey, New Zealand, South Africa and West Germany. The previous five international conferences, which are held every four years, were hosted by the Isle of Jersey, England, South Africa, Canada and New Zealand.

Increased Activity By A.B. Board

The Annual Report for the year 1965-66, recently issued by the Artificial Breeding Board, reveals increases in the use of artificial breeding and in the non-return rate.

OPERATIONS

The same sub-centres provided services as in the previous year with minor territorial adjustments taking place in two areas. At Eden Valley some extension of coverage has been given westwards. In the Goolwa district success has been achieved in the non-return rate with chilled semen only and the district has now been joined with Myponga to offer wider breed choice by the use of deep-frozen semen.

After re-location of the Narrung sub-centre at Meningie, new farms were given service. This has unfortunately not brought results in increased cow numbers. The low number of cows being offered for insemination in this area is placing the continuance of the operation in jeopardy.

Results have been affected by herds with below average fertility. A casual attitude by dairy farmers to poor results does not assist the Board in its work. In the few cases of herd problems investigated, no causative organisms were found to account for the low fertility.

Despite continued advertising in Australia and overseas for a Veterinary officer to undertake more detailed investigation into the problem of fertility, no suitable application has yet been received.

Experimental deep-freezing of semen from the first intake of bulls was carried out during the early part of the year and this has provided basic knowledge required for the larger programme to be undertaken when our knowledge of our bulls is supported by progeny results. Liquid nitrogen equipment is on hand for use in long term storage.

SEMEN PRODUCTION

Some changes took place in the bull team during the year. One bull was eliminated because of a physical infirmity and another because of an unruly temperament.

Four new bulls have been added and the 18 bulls now on the centre are:

Friesians	Jerseys
Vynette Fondhope King	Francliff Rapturous 2nd
Anama Mars Jasper	Hampden Illuminators Finest
Vynette Tulip Paxton	Roslyn Vale Fifth Milestone
Strathaven Serenade Mitch	Mannanarie Prims Pride
Yadnarie Echo Captain	Randers Echo
Glenjoy Sylvia Serenade	Gumrella Petals Count
Hemaford Caddie Supreme	Garford Royal Banner
Jaylea Maple Elijah	Bradwell Spots Gunner
	Spring Glen Gold Spot
	Heatherville Ideal Dreamer

NON-RETURN RATES

The 30-60 day non-return rates for the different sub-centres is shown in the table below, all first inseminations:

	Per Cent		Per Cent
Mount Barker	68.8	Meningie	71.2
Myponga	66.8	Strathalbyn	64.1
Murray Bridge	65.5	Eden Valley	59.9
Mount Gambier	59.5	Northfield	67.3

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79 2619

The average for all areas at 30-60 days was 66.3 per cent, compared with 65.3 per cent for the previous year.

The comparable averages for chilled semen and deep-frozen semen were 66.9 per cent and 63.0 per cent.

NUMBER OF COWS INSEMINATED

The total of first inseminations for the year ended 30th June, 1966, was 22,027, an increase of 933 over the previous year. The popularity of semen from three Premium Friesian bulls in New South Wales increased. The extra fee for this semen remained the same.

BREED DEMAND

Choice of breed as shown by selection at first insemination was as follows:

	Per Cent		Per Cent
Friesian	57.5	Guernsey	2.8
Jersey	33.0	A.I.S.	1.3
Hereford	4.7	Ayrshire	0.7

DISTRICT STATISTICS

Area	First Inseminations	Active Farms	Cows per Farm	Miles per First Insemination
Mount Barker	7,485	587	12.7	9.9
Myponga (including Goolwa)	4,523	249	18.2	13.4
Murray Bridge	4,463	155	28.8	8.8
Mount Gambier	2,294	171	13.4	10.8
Meningie	907	43	21.1	26.2
Strathalbyn	1,444	110	13.1	11.8
Eden Valley	743	106	7.0	14.8
Northfield	168	—	—	—

ULTRA HEAT TREATMENT FOR MILK

The ultra heat process of milk treatment has been praised by Professor Sir Ronald Baskett, director of Britain's National Institute for Research in Dairying, who believes it may replace all other forms of milk treatment in the next few years.

He said the commercial advantages of the process were that it permitted long life without refrigeration. A limiting factor was packaging, but at least one successful carton system had been developed. There would probably be a future for the glass bottle for many years, although this would have to be aseptically filled.

Ultra heat treatment (UHT) was developed by Britain's Express Dairy Company after experiments extending over ten years. The milk is homogenised, heated under pressure to 275 degrees F., held for two seconds, cooled rapidly and fed into sterile cartons. It will then keep for five months or more, retaining a flavour said to be indistinguishable from fresh pasteurised milk. The company has already exported more than a million gallons of UHT milk to 23 countries, and is selling it to eleven major shipping lines.

A similar venture is now being planned by the National Dairy Producers' Association in conjunction with a Liverpool dairy company.

The system, however, requires delicate procedures to achieve the utmost in hygiene. Any lapse in this respect means a shutdown and resterilisation of the whole plant.

The extension of UHT milk to the home market has been discussed by some authorities in Britain. The rising cost of milk deliveries in big cities has already led to moves to replace daily deliveries by alternate-day supplies, and eventually housewives may receive milk only twice weekly. In this event UHT or some similar system will have to be adopted.

A plant for the production of UHT milk in South Australia is now going into production, but the milk will not be used in competition with fresh milk.

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FORECAST THAT MILK WILL GO BY POST

A British dairying expert has forecast that milk bottles will disappear and long-keeping milk in plastic envelopes will be delivered through the letter box.

He is Professor E. L. Crossley, professor of dairying at Reading University.

He said there was some distance to go before dried milk would be available, but powder was being produced.

Mr. DICK BOURKE RETURNS FROM U.S.A.

Mr. Dick Bourke, by the way, is a Stock Nutritionist for Messrs. Gorman & Taber, Stock and Station Agents and Merchants, with Branches throughout the Riverina in New South Wales.

Whilst in the United States, Mr. Dick Bourke made a study of lot feeding practices, and found that many of the major lot fattening projects were using various models of WETMORE Feed Processing Grinder Mixers and Mills.

"Some of these machines", said Mr. Bourke, "were highly automated, and in fact, electronically controlled." They were geared to produce different rations for different classes of stock, merely by pushing a button or consoles operated by Veterinarians in a centrally controlled office.

Mr. Bourke was so impressed with what WETMORE Grinder Mixers and Mills were contributing towards scientific feeding of stock that he investigated the history and principles of the WETMORE Company and product. From his investigations we learn that Mr. Ern Wetmore of Oklahoma in U.S.A. became interested in the processing of fodder for the feeding of stock in 1922. In his researches Mr. Wetmore endeavoured to design his feed processing machines to produce stock feeds for the farmer on his own farm, in the most economical way. In other words "On the farm feed making".

To do this the Mills combine the facilities of three machines.

- (1) A chaff cutter to handle roughage such as baled or sheaf hay, with a screen through which such coarse and damp materials could be discharged, incorporating in the mill chamber itself air ducts, or venturis if you like, to inhale or draw the feed into the mill chamber, and then to discharge it directly out through the screen at the top of the mill chamber.
- (2) A hammer mill to simultaneously handle grains.
- (3) A mixer to mix the total milled fodder and add any concentrates such as molasses (wet or dry) or other high protein concentrates together with any antibiotics.

The result is a machine that will mill and mix coarse high moisture content fodders such as required for beef and dairy cattle. "This", says Mr. Bourke, "is the reason why WETMORE machines are so popular in dry lots throughout U.S.A."

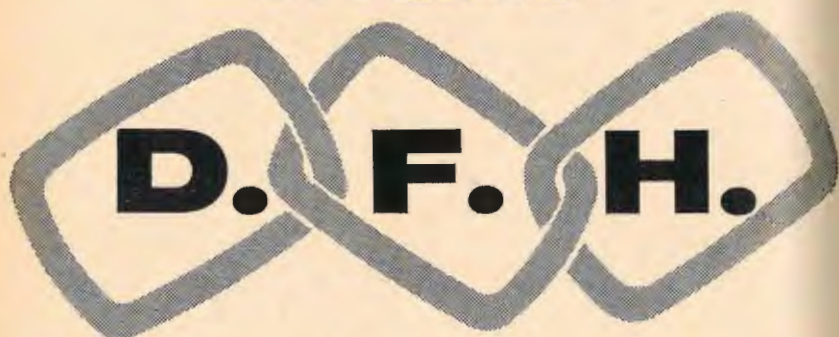
By the use of these mills and grinder mixers, fodder conserved in the Spring can be used to fatten stock in lean times. Stock fattened in such times always bring a premium in the markets as supplies of pasture fattened stock are not plentiful.

Feed costs are another important factor in favour of "On the farm feed making". Many of our cattle and beef raisers are already aware of the need for balancing stock rations, and seek to achieve this by adding manufactured feed, but it is commonly accepted in America that "The man who buys his feed in another man's bag puts his money in another man's bank".

It is true that stock rations and costs in America are different from that in Australia, but with a bit of pencil pushing after what he had observed in America, Mr. Bourke is convinced that the savings in "On the farm feed making" are very considerable and can very quickly pay for the outlay involved in acquiring the necessary Mills or Grinder Mixers.

The need for WETMORE Grinder Mixers and Mills in Australia was very apparent to Mr. Bourke, so much so that he urged his Principals, Messrs. Gorman & Tabor to get the WETMORE franchise for their Company's branches in the Riverina with headquarters at Wagga Wagga, N.S.W. They were pleasantly surprised to find that WETMORE was distributed throughout Australia by Primary Implements Pty. Limited, at 118 Glen Osmond Road, Parkside, S.A.

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Reproduction Management — Why Cows Fail To Come In Heat

(This address, given by **WILLIAM HANSEL** of Cornell University, is reprinted from the "Proceedings of the (U.S.) National Association of Artificial Breeders Annual Conference".)

The artificial insemination business depends upon proper timing and anything that disrupts scheduled operations leads to inefficiency and loss of profits. Failure to come in heat, often referred to as **anestrus**, represents a major cause of economic loss in both dairy and beef cattle operations. Animals that cannot be bred at the scheduled time are rarely profitable under modern systems of intensive production. Like many breeding problems, it has no single or simple answer and many of the causes of anestrus undoubtedly remain unknown. However, some things that cause the condition are known and the average farmer, his veterinarian and A.I. technician can often co-operate to minimise the problem. Recent studies serve to emphasise ten important facts concerning anestrus and knowledge of these facts is essential to maintaining a high conception rate in either beef or dairy cattle.

1. Many Heats Are Missed

The first of these facts is that many heat periods are missed because of inadequate checking. In our work in diagnosing the causes of breeding problems in dairy herds we frequently find that cows reported to be anestrus have, in fact, ovulated and that their ovaries contain corpora lutea (yellow bodies). The following picture (slide 1) represents the reproductive tract from such an animal. When the ovaries were palpated through the rectal wall the large corpus uterum shown on the left ovary was felt, as was the large follicle on the right ovary. The uterus and oviducts were judged to be normal. It is clear to an experienced observer that this animal was in heat about 16 days ago. She either ovulated (shed an egg) without showing the usual signs of heat or she was not observed carefully at the proper time and the signs of heat were missed. Ovulation without estrus can occur, as we shall see later, but in many cases poor heat checking is the cause of the trouble.

We have been able to get some indication of the efficiency of heat checking in a given herd by studying the breeding records. In herds where we find many corpora lutea in cows reported not to have been in heat we go through the records and pick out all of the cows for which the interval between heats was approximately two estrous cycles (38-44 days) in length. We then calculate back 19-22 days from the last recorded heat. If this date falls on a weekend in a high proportion of the cases, we suspect that a poor job of heat detection is being done. You might try this with the breeding records for your own herds some time. The results may surprise you!

Heat checking in beef cattle is a special problem deserving a few additional comments. Beef cattle are less active than dairy animals, particularly in hot weather, and the best times to check for estrous are shortly after dawn and late in the evening, or even after dark if some method of identifying the animals seen in heat can be devised. Gathering the herd together in a small field or corral, or at a feeding or watering trough, stimulates estrous activity and provides a convenient method for observation. In our work with estrous cycle synchronisation in beef cattle, we have found it convenient to use pressure cans filled with a brightly coloured paint to mark cows when many of them are in heat at the same time. Hormone treated steers or cows, marking harnesses, so called heat detection pads and similar devices have not proved particularly useful.

2. "Silent" Ovulations Contribute to the Problem

It should be emphasised however that all cows found to have corpora lutea in their ovaries do not show the typical signs of heat. The second important fact we wish to point out is that an appreciable number of cows develop follicles in

their ovaries which rupture, release an egg (ovulate) and form corpora lutea without actually coming in heat. This phenomenon is often referred to as "silent" ovulation. The following picture (slide 2) shows the ovary from such a cow. She ovulated about two days before the ovary shown was removed and although she was observed almost constantly for several days before slaughter she was not seen in estrus. An interesting recent experience serves to illustrate this point. At the termination of one of our experiments we slaughtered 40 three-year-old Holstein heifers on the 30th day after they calved. Somewhat to our surprise, all but one of these heifers had ovulated, and their ovaries were found to contain recently formed corpora lutea at slaughter, although about one fourth of them were not seen in heat prior to slaughter. Fortunately, careful observations of their behaviour were recorded daily, and in almost every instance the records show that the animals were restless, mounted other animals or showed some small signs of estrus shortly before the time that they apparently ovulated. Watching cattle closely during this period and observing them for signs of met-estrous bleeding can help to establish the cycle and aid in getting them bred at a later date.

3. Cows With Abnormal Uteri Do Not Come in Heat

In addition to the cows that cycle and are not seen in estrus and those that have "silent" ovulations there are many truly anestrus cows. These cows may go 60 to 90 or more days after calving with completely inactive ovaries and an absence of estrus. The third major point of this discussion is that the condition of the uterus is a major factor in determining whether or not ovulation will occur in such animals. The next picture (slide 3) shows the reproductive tract of a typical anestrus cow about 50 days after calving. The uterus is filled with pus and has not returned to its normal size and shape. The ovaries contain only small follicles and no corpora lutea. Animals in which the uterus does not involute (regress) properly are unlikely to come in estrus and ovulate. Doubtless, many of these cases may be diagnosed by rectal palpations and, if proper therapy is instituted at an early date, many of these animals will be ready to breed by 60 days after calving—the usual recommended date for first breeding.

However, the next picture (slide 4) illustrates how difficult the problem of diagnosis may become. This uterus shown was removed from a three-year-old Holstein slaughtered 120 days after calving. Her ovaries were inactive during the entire 120-day period and we had described her uterus as "normal" or "involved" at each of several rectal palpations performed during several months prior to slaughter. The cow, unfortunately, could not read our notes! Her "normal" uterus contained about 50 ml. of mucopurulent material, and this condition was probably related to her failure to come in estrus. The point is that these conditions are not always detectable by rectal palpations, and therapeutic measurements to improve the condition of the endometrium may sometimes be justified even though the uterus appears to have "involved" normally.

4. "Persistent" Corpora Lutea Have Been Over-Emphasised

The fourth point I wish to emphasise is that anestrus is rarely caused by a persistent corpus luteum, despite the fact that this is the diagnosis most often given as a cause for the condition. Most of the corpora present in cows reported to be anestrus are normal cyclic corpora formed either after "silent" ovulation or after heat periods that have been missed. Truly persistent corpora are rare and when found have invariably been associated with extreme degenerative changes in the endometrium or, in some cases, the absence of a large part of the endometrium. In one of the few cases in which the corpus luteum was shown to persist, the cow was later slaughtered and found to have very poor endometrial development characterised by the almost complete absence of normal endometrial glands. In fact, the only certain experimental method known to cause the corpus luteum to persist is hysterectomy, or surgical removal of the uterus. The next picture (slide 5) illustrates that neither weights nor progesterone contents of corpora decline for 20 days after removal of the uterus.

From a practical standpoint these results suggest that enucleation of the corpus luteum should be practised only in a limited number of cases where repeated observations give good evidence that the corpus is really a persistent one. The very real risk of causing adhesions in and around the oviducts by corpus luteum enucleation that may subsequently result in infertility is a further factor to be considered.

5. Short Cycles Are Produced by Uterine Irritation

The fifth major point I wish to emphasise is that the exact opposite effect—a failure of corpus luteum function and a return to heat after a shorter than normal interval—can be produced by dilating or otherwise irritating the uterus during a critical period lasting from the second to the sixth days of the estrous cycle. When small balloons (slide 6) were inserted into the uterus on the day after heat and inflated so as to stretch the uterine wall, most cows responded by coming into estrus between the 9th and 12th day, instead of the usual 19-21st day. The next picture (slide 7) shows the ovary from such an animal. Note the recent ovulation and the degenerate (cystic) corpus luteum.

Interestingly enough one can produce the same effect by placing a large volume of raw semen (containing no antibiotics) or a large number of non-specific bacteria in the uterus at or shortly after heat (slide 8). Workers at the University of California have recently produced the very same result by adding a virus (IPV) thought to cause infertility to the semen used to inseminate Holstein heifers. The typical short cycle (9-12 days) familiar to all dairymen is probably brought about by this mechanism. From a practical standpoint these findings suggest that every precaution should be taken to avoid the introduction of any bacteria or viruses into the uterus, and that only the minimum number of spermatozoa compatible with good fertility should be used for each artificial insemination.

6. Low Blood Hemoglobin Levels Are Associated with Anestrus

I should now like to turn attention to a discussion of some nutritional causes of anestrus and infertility in cattle. Perhaps the most important point to be made in this connection is that deficiencies of certain trace minerals, and perhaps other factors as well, serve to lower the level of hemoglobin in the blood and result in prolonged periods of anestrus and lowered conception rates. The data we have collected on 1,333 cows in 130 New York State dairy herds are most impressive on this point (slide 9). The levels of hemoglobin were significantly lower in the 530 cows that failed to come in heat or required four or more services for conception than they were in the 803 cows that had essentially normal reproductive performance. The difference was particularly noticeable in cows that had failed to come in heat for 60 or more days after calving and in anestrus heifers.

Cobalt and copper deficiencies accounted for some of the cases of lowered hemoglobin but, in others, the causes of the anaemia were never found. Adequate intakes of copper and cobalt should be maintained, and hemoglobin levels should be measured whenever attempts are made to diagnose the causes of anestrus. This subject is worthy of further research; studies on factors which influence the availability of these and other trace minerals from various forages may be particularly rewarding.

7. Phosphorus Deficiencies Cause Anestrus

The seventh major point to be made in this discussion is that phosphorus deficiencies can also cause anestrus and lowered conception rates. We have found relatively few herds in which the phosphorus intake was inadequate, but anestrus and repeated returns to service were characteristic of those herds with marginal intakes. In most cases these herds were fed forages low in phosphorus, and home grown grains constituted a large part of the grain ration. Blood levels of phosphorus are not always indicative of dietary intake, but levels below 4.0

mg. per 100 ml. of plasma in young animals were usually associated with inadequate intakes. Almost without exception, herds in which a considerable portion of the cows had low blood levels of phosphorus responded to a phosphorus supplement fed free choice, by showing more regular estrous cycles and improved conception rates.

8. Inadequate Energy Intakes Delay the Occurrence of First Estrus in Heifers

The discussion until now has been mainly directed toward mature cows, but anestrus heifers constitute an equally difficult problem. The eighth important fact I would have you remember is that underfeeding causes a very great delay in the occurrence of first estrus in heifers. In our experiments in which Holstein heifers were fed at low, medium and high levels of total digestible nutrients (TDN) the ages at first estrus were 8, 11 and 18 months, respectively (slide 10). Underfeeding is clearly the major cause of anestrus in heifers. The effect is primarily due to an inadequate intake of energy, although a protein deficiency may also contribute in certain circumstances. The effect is particularly noticeable in the late maturing breeds.

Unfortunately, underfed, anestrus heifers respond very slowly when placed on an adequate ration. A few years ago we purchased some of these heifers at less than the market price, with the idea that they would start to come in estrus after a few weeks of adequate feeding. This proved to be a most costly error! Some of these heifers did not come in estrus until they had been on a good ration for more than six months. In general, it is cheaper in the long run to prevent the condition from developing than it is to overcome it by good feeding. Injection of gonadotropins, or other hormones to induct estrus in underfed heifers of this sort is usually a waste of both money and time.

9. Inadequate Energy Intakes Delay the First Postpartum Estrus in Mature Cows

Similar effects have been demonstrated in mature beef cattle (Wiltbank et al., *J. Animal Sci.*, 21:219, 1962), and the ninth important fact about anestrus is that cows fed inadequate total digestible nutrients before and after calving are likely to fail to come in estrus for prolonged periods of time, and to be less fertile after estrous cycles begin. The data (slide 11) show that the average interval from calving to first estrus was 48 days in Hereford cows fed a high energy ration before and after calving (high-high), 43 days in cows fed on a high-low sequence, 65 days in cows fed on a low-high sequence and 52 days in cows fed on a low-low sequence. However, seventy-eight per cent of the cows fed the low energy ration both before and after calving failed to come in estrus in 125 days after calving. The conception rates were similarly affected; the cows fed the low-low sequence require 3.0 services per conception, while those fed the high-high ration required only 1.5 services per conception.

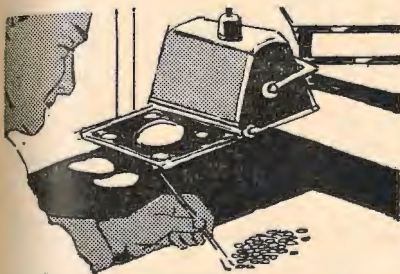
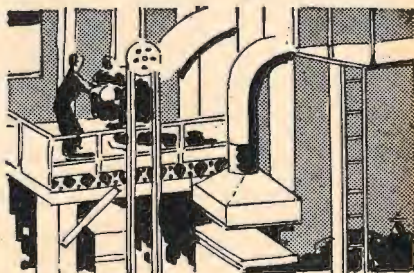
10. Cows Nursing Calves are Slower to Come in Heat after Calving

The tenth, and final point I would make is the generalisation that lactating beef cows are less likely to come in heat and conceive than non-lactating cows. Although there is good evidence for this fact, it is difficult to be certain, in most instances, whether or not the delay in estrus is due to the frequent suckling of the calf or to the nutritional deficiencies imposed by the added stress of lactation. Both factors may be involved in many cases under practical conditions. Wiltbank and Cook (*J. Animal Sci.*, 17:640, 1958) found that the interval from calving to first estrus was 30 days longer in nursed Milking Shorthorn cows than in cows of the same breed milked twice daily. The interval from first service to conception was also 27 days longer. Clapp (*Proc. Am. Soc. of An. Prod.* 1937, p. 259) reported that the interval from calving to first estrus was 46.4 days for cows milked twice daily, 69.4 days for cows milked four times daily and 71.8 days for nursed cows. Earlier in the discussion it was mentioned

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that forty three-year-old Holsteins were all found to have ovulated when slaughtered 30 days after calving. We recently slaughtered another group of similar Holstein heifers with suckling calves and very few of these animals had ovulated by 30 days after calving. The nutritional conditions were about the same for both groups and the difference was presumably due to the nursing calves.

However, the suckling stimulus itself may not be entirely responsible for these effects. In a recent estrous cycle synchronisation experiment 40 per cent of 115 cows from which a calf had recently been weaned ("lactating") conceived to first service as compared to 51.5 per cent of 241 non-lactating cows. This difference was statistically significant. Although there were no obvious differences in body condition between the two groups of animals, the effect in this case may have been a nutritional one since the calves were removed from the cows before the experiment was initiated.

Improved management and feeding practices based on these ten facts can reduce the incidence of cows that fail to come in heat at the proper times, and bring about marked improvements in the efficiency of artificial breeding operations in both dairy and beef animals. It should be obvious to all concerned that application of this hard-won knowledge calls for the best co-operative efforts of herdsmen, practising veterinarians and the personnel of artificial breeding organisations.

Canada Has To Import Butter

For the first time since 1952 Canada has had to import butter. This took place when New Zealand sold Canada 1,000 tons.

This tonnage represents less than 1 per cent of the yearly consumption in Canada.

It was forecast Canada would be in the position of importing butter in the latter months of 1966.

Quitting Industry

The Dairy Farmers of Canada estimates that 13,000 Canadian dairy farmers will quit the industry this year. Both producers and consumers are beginning to worry about future supplies of dairy products, especially butter.

Lower Butter Prices Failed To Stop Consumption Drop In Sweden

Sweden has again cut the price of surplus butter, the International Federation of Agricultural Producers reports.

Nine million pounds of cold-storage surplus butter is being released, mostly to retailers, by the Swedish Dairy Board.

Price of the butter is about US 18c a pound below the fresh butter price which recently has been around 41.5 cents.

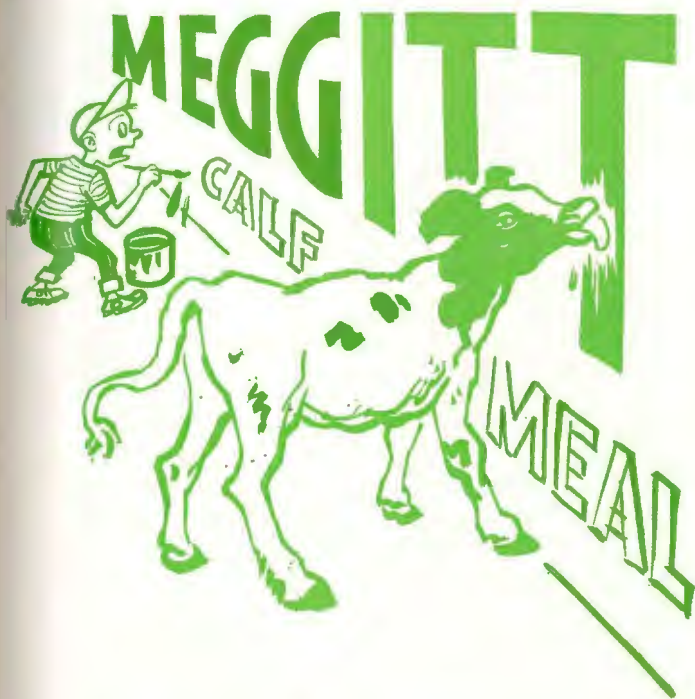
Earlier in 1966 the Dairy Board released 10 million pounds of surplus butter.

Surplus Stocks

Swedish surplus butter stocks continued to rise in 1966 even though production dropped by six per cent to 106 million pounds in the first seven months of the year. In the same period, exports doubled to 10 million pounds.

On September 1, stocks totalled 35 million pounds, up 60% compared with 1964.

Swedish butter consumption in 1966 fell by three per cent, despite lower domestic prices. Consumption has been dropping for the past two years.



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FAIRMEN'S . . .

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W. G. WHITTLESTONE, D.Sc., A.R.I.C., A.N.Z.I.C.

Senior Principal Scientific Officer

Ruakura Agricultural Research Centre, New Zealand

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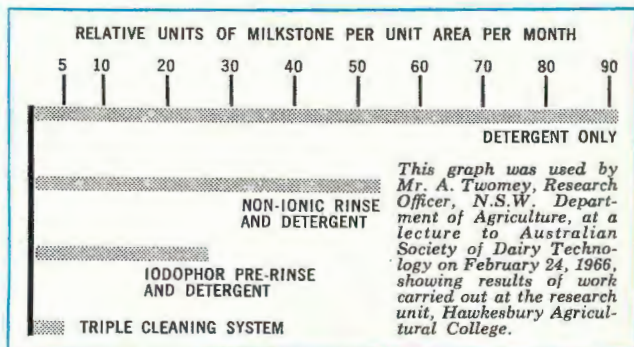
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Research Proves Triple Cleaning System

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

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DR. W. G. WHITTLESTONE

Graduated from Otago University with 1st Class Honours in Chemistry, holder of the Sir George Grey Scholarship in Science and the Duffus Lubecki Fellowship in Chemistry; spent three years as biochemist at the N.Z. Co-op. Rennet Company doing research on rennet action and manufacture; was at the Department of Agriculture's Wallaceville Research Station working on mastitis diagnosis, machine action and mastitis, machine action and milker rubberware testing. After six years, moved to Ruakura, developed work on milk ejection in cows, sheep and sows; evolved assay for milk ejection hormone and studied its action; associated with Phillips in development of machine testing system and evolution of improved machine milking components; developed system of milking machine detergent testing and evolved original Ruakura machine-cleaning system. This work led to the degree of Doctor of Science in 1954 and the award of the Research Medal of the N.Z. Association of Scientists in 1955. Was elected President of the N.Z. Dairy Science Association in 1952. Accepted post as Reader in Dairy Husbandry at Sydney University in 1958 and was awarded the Gold Medal of the Australian Society of Dairy Technology in 1962. In 1964 accepted the position of Senior Principal Scientific Officer at Ruakura Agricultural Research Centre.

Current Research

The development of improved methods of detecting mastitis; study of the hormonal control of milk ejection in the cow, with reference to the role of oxytocin and vasopressin; studies of the characteristics of the bovine teat and the changes in the mammary gland during milk ejection; long term study of machine action and management in relation to mastitis; the development of better systems of machine cleaning, farm tank cleaning and udder hygiene; studies of machine action in relation to milk quality (lipolysis effects and chemical contamination). Current research also includes use of radio carbon marked surfactant molecules to study adsorption effects.

DAIRY INDUSTRY PREPARES FOR CONTAINERIZATION

The application of the technique of pre-packing goods in standard bulk containers for quick loading on to ships, known as "containerization", to Australia's dairy exports will be examined by a special Working Party appointed in Melbourne last week at a conference convened by the Australian Dairy Produce Board.

"Containerization" will require radical changes in shipping, storage, handling and land carriage, but could result in much faster transport, with less handling, better care, and less risk of loss and damage. Where great distances or transshipment was involved the system was economically justifiable, because although lower freight should not be expected, the hitherto spiralling costs could most likely be controlled.

Ships equipped to handle containerized cargo would reach London from Melbourne in 23 days, with only three days for turn-around, thus allowing a vessel to do six round trips per year (carrying five times as much cargo) against the present two and a half trips per year.

MILK BOARD CONCERN OVER MILK QUALITY

The Metropolitan Milk Board, in its latest Report, has expressed its concern at the industry's failure to improve milk quality as shown by the methylene blue test, which has followed much the same pattern as that of previous years.

The Board states that observations over the years have shown very clearly that atmospheric temperatures exert a marked influence on milk quality and although there has been strong emphasis on dairy sanitation the position has now been reached where atmospheric temperature is the key factor influencing bacteriological quality of milk during the late spring, summer and early autumn months. In effect it is difficult to maintain quality during the hot months of the year with unrefrigerated cooling and storage methods.

Temperatures do not vary significantly in the various states of the Commonwealth and therefore producers, treatment plants and administrative authorities in all states have been confronted with similar problems. In the other states the hot weather difficulties have been countered by either reducing the time the milk is held on the farm at water cooled temperatures or by chilling the milk to a safe temperature when it is held on the farm overnight.

The most common practice has been to collect milk twice a day, although in Queensland the emphasis has been on refrigeration, while in Victoria there has been a significant growth in the refrigerated bulk collection of milk, particularly for manufacturing purposes. In three states it is a statutory requirement that milk be collected twice a day during the late spring, summer and early autumn months unless cooled by refrigeration when once a day collection is then permitted.

It is therefore apparent that to overcome the summer problem with milk quality the milk must be collected either twice daily or cooled and stored under refrigeration when the milk is held overnight on the farm. There are no other alternatives and if these measures are not adopted the unsatisfactory quality of the milk during the summer months will continue to be a problem.

The industry has already rejected twice a day collection in all districts except the River Murray Irrigation Areas on the grounds of economy. The structure of the Industry, particularly in respect to the size of herds and the distances travelled in the course of collection, is such that twice a day collection would be uneconomical for practically the whole of the City milk production area. In view of this it is apparent that the Industry has no alternative but to adopt farm refrigeration for the production of City milk.

This fact has already been well established and it is now recognized by all sections of the Industry that refrigeration must eventually become standard requirement for the production of City milk. Already 580 producers have installed refrigeration for the handling of milk in cans, while a further 82 producers are using refrigerated farm milk tanks.

As the initial step in implementing its policy of refrigeration for all licensed producers, the Board has already decided that in future it will approve only refrigerated farm milk tanks which comply with the Australian Standard N.46.

During the coming year the Board will be giving consideration to the practicability of fixing a target date by which time all licensed producers will be required to instal some form of refrigeration on their farms.

The Association is examining the Board's proposals for compulsory refrigeration which, if carried into effect, would have wide-spread consequences, particularly in regard to economic factors.

World Dairy Authority To Visit South Australia

W. G. WHITTLESTONE, D.Sc.,
A.R.I.C., A.N.Z.I.C.

Senior Principal Scientific Officer
Ruakura Agricultural Research Centre, New Zealand

will address dairy farmers on:

"MILKING PRACTICES AND MODERN CLEANING METHODS FOR MILKING MACHINES AND EQUIPMENT"

at

VICTOR HARBOUR in the Town Hall

at 10 a.m., Thursday, 22nd June, 1967

WOODSIDE in the Town Hall

at 2 p.m., Thursday, 22nd June, 1967

MURRAY BRIDGE in the Town Hall

at 10 a.m., Friday, 23rd June, 1967

Dr. Whittlestone's visit gives dairy farmers a unique opportunity to meet and discuss modern cleaning methods at dairy farm level.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

	PRODUCTION (000 gallons)					
	For Month		Total since July 1		Total since Jan. 1	
	1966	1967	1965/66	1966/67	1966	1967
March	3,195	3,387	39,353	41,554	10,436	11,347
April	3,056	3,068	42,409	44,622	13,492	14,415

	SALES (000 gallons)						C.M.B.	
	For Month		Total since July 1		Quota %		1966	1967
	1966	1967	1965/66	1966/67	1966	1967	1966	1967
Mch. ...	1,909	1,866	15,721	15,653	59.8	55.1	30.54	27.25
Apr. ...	1,761	1,828	17,482	17,481	57.6	59.6	28.74	28.96

Moving average quote for 12 months ended 31/3/67, 40.85%;
30/4/67, 40.97%.

INTERIM PRICES TO LICENSED SUPPLIERS

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

1967	Basic C.M.B. Total		3%	3.5%	4%	4.5%	5%	
	(per lb. butterfat)	(per gallon)						
Mch. ...	38.97	27.25	66.23	20.50	23.92	27.34	30.76	34.17
Apr. ...	38.97	28.96	67.93	21.03	24.51	28.04	31.55	35.05

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	March		April	
	1966	1967	1966	1967
Butter—Choicest Australian	304/-	300/-	304/-	300/-
Cheese—First Grade Australian	235/-	240/-	235/-	240/-
Rindless Australian	260/-	265/-	260/-	270/-

LIFT IN INTERIM BASIC PRICE

An increase of \$1 per cwt. in the interim value for cheese has lifted the interim basic price to licensed suppliers in the Adelaide milk supply area to 41.25 cents per lb. butterfat.

This increase will be made retrospective by the payment, early in July, of 1.39 cents per lb. fat (equalized) for all milk produced since 1st July, 1966.

Lean Period Production Again Record High

Average daily intake (on a monthly basis) from licensed suppliers in the Adelaide milk supply area reached a minimum in April of 102,255 gallons. This quantity is the highest minimum ever recorded and represented almost twice (1.896) the metropolitan requirements, compared with the lowest ration reached in April, 1958, when production was only 1.17 times consumption.

1 ONE FEATURE THAT PUTS McDONALD MILKERS WAY AHEAD!

It's the latest model **S.S.800 Releaser**. It's an entirely new design, all stainless steel releaser. Features "Uniweld" construction — no soldered joints, no copper or dairy metal. Satin smooth, slow speed operation reduces foaming. Opens top and bottom for easy cleaning. This new McDonald S.S.800 releaser also increases efficiency and flow capacity. Improves machine vacuum stability, too. It's just one of the **five** exciting features that put McDonald Milkers way ahead. Why not check them all? Call your McDonald rep. today.



McDONALD *Imperial* MILKERS

A. H. McDONALD (SALES) PTY. LTD.,
299 Prospect Road, BLAIR ATHOL, S.A.

Country Rep.: J. Simmons,
169 Shepherds Hill Rd., Eden Hills, S.A.

291/S

THE EXCITEMENT OF WINNING A PRIZE

Everyone gets a lot of enjoyment and excitement in winning a prize. Perhaps in our recent experience it was more a sense of satisfaction in having such factual assurance that the products which we are offering to the farming community of Australia, are judged by experts to be **THE MOST PRACTICAL—THE MOST ECONOMIC—THE GREATEST STEP FORWARD IN AGRICULTURAL ENGINEERING.**

WETMORE Grinder Mixer Model 19M353 was presented with an Award for these outstanding merits at the North Eastern Machinery Field Days held at Wangaratta, Victoria, last month.

We are very proud of the blue and gold Sash that was presented to us, evidencing the Panel of Judges' decision. In this case the Panel of Judges comprised four of Australia's top ranking Agricultural Machinery Experts. Their thoroughness and fairness is most noteworthy. In our case they spent over four hours of minute examination of WETMORE.

A picture of the Sash that WETMORE earned can be seen on the page opposite.

Contrasting with WETMORE'S Award for the greatest step forward in Agricultural Machinery, was a presentation of an Award to a Two Furrow Ransome Horse Plough, which was used by a Tasmanian, to win the Horse Ploughing contest. This man brought his own horses with him from Tasmania. Contestants for this event came from all corners of the world. The Field Days were combined with the International Ploughing Championship. The Tractor Plough Award went to Finland.

WETMORE can win benefits and earn money for you too. It is doing this for the rapidly growing numbers of owners throughout Australia, from whom we are receiving very glowing compliments. For example, Mr. C. W. Heath, of Edi, Victoria, wrote us on 28th May, 1967: "After calculating costs in making my own feed against that of buying ready made mixes, I find that I am saving in excess of \$40.00 per ton. It is my express wish in writing to you to encourage others with any feeding problems to follow my lead."

Another dairy farmer North of South Australia says that he is saving \$36.00 per ton.

Apart from the saving of money, there is today the dire need of saving feed. WETMORE does this too, by converting rejected fodders into palatable nutritious feeds, and by saving waste.

A cow with one mouth and four feet spoils four times as much as she eats.

We, at Primary Implements, provide free counselling on your stock feed problems. We can tell you how to convert that rejected fodder into good stock feed rations. We can tell you how to prepare the ration the way the experts like it.

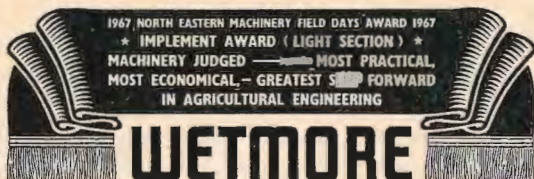
Monday, 5th June, 1967, becomes another milestone of progress for WETMORE. This is the opening date of our new Drive In Show Rooms where we will have displayed the entire range of WETMORE Products.

Primary Implements invite you to inspect this range, built in South Australia. You will find us at our Head Office, 118 Glen Osmond Road, Parkside, or if you would like to go direct to our new **Drive In Show Room**, turn into Davey Street, corner 128 Glen Osmond Road, Parkside, **then first turn right.** We shall be very pleased to see you.

PICK A WINNER!

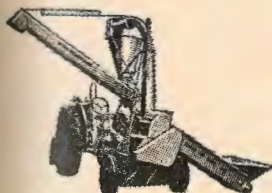
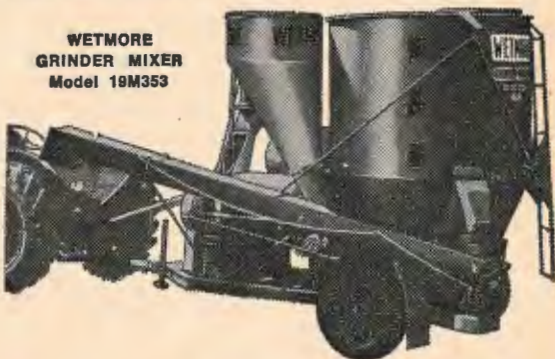
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 MIXES
 DELIVERS
 STOCK FEEDS
 WET, GREEN
 or
 DRY**

**WETMORE
 GRINDER MIXER
 Model 19M353**



**GLUTTON Model
 with Self Feeder
 and Collector
 Auger.**

"WETMORE saves \$40.00 per ton," says Mr. C. W. Heath, Edi, via Wangaratta, Vic.

After calculating costs in making my own feed with WETMORE against that of buying ready made mixtures, I find I am saving in excess of \$40.00 per ton. It is my express wish in writing to you to encourage others with any feeding problems to follow my lead.

*There is a **WETMORE** mill for every purpose*

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SALES PROSPECTS IN SINGAPORE

Mr. G. O'H. Giles, M.H.R., Angas, has written from Singapore to say that as a result of discussions held with the Trade Commissioner, Mr. Rowland, the following facts gained may be of interest.

Australian butter has by far the largest share of the market in Singapore. Its percentage varies between 80 and 90 per cent. Australian brands are in high favour in this area and will continue to be in great demand.

The Dutch Government appears to be subsidising their butter exports on to this market and is at present undercutting Australian prices.

As yet they have made no impact on the sales.

It appears that Australia might well have a case under the General Agreement on trade and tariffs in regard to this action.

The industry is not taking this matter lightly and a full scale promotional effort is due again shortly to assure a continuation of sales.

Sales of cheese to this area are not great apart from expatriates. In general Chinese of Singapore don't eat cheese. Kraft, however, are now producing a cheaper variety with an attempt to break through the traditional habits of the local population and encourage initial sampling and possibly sales.

The small increase apparent so far might well have as its basic reasoning the fact that some local males look on cheese as an adjunct to greater virility.

Sales of Ghee are continuing at around about the same level.

RECONSTITUTED MILK, ETC.

Frozen whole milk is imported from Western Australia and other companies here are reconstituting milk from its basic ingredients of water (solids, not fat) and butter fat. There has been a move lately to import greater quantities of U.H.T. milk, principally from Tasmania and also from Victoria. South Australians will be interested in this trend, as I believe South Australia Farmers' Union are building a U.H.T. milk plant. U.H.T. is ultra high temperature treated milk, which will allow it to be packed into packs and keep for three to four months without refrigeration whatsoever.

CONDENSED MILK

The Asia Dairy Company which was founded on joint capital from local sources on the one hand and capital from the Australian Dairy Produce Board on the other hand is continuing to sell sweet and unsweetened condensed milk profitably. With condensed milk very much a staple food today the sales are based on either domestic use or on coffee shops.

Other nations have not been slow to notice the competitive advantage given to firms providing local industry with local employment. We can anticipate over the next year or two, three and possibly more firms doing business in this way. It should be remembered that the basis of this particular deal is that the raw material for condensed milk is tied to Australian imports whilst the manufacturing process is carried out in Singapore. There is no question that this method of establishing joint enterprise is the most economic and efficient method of increasing our exports of a raw material that is capable of processing.

COMMON MARKET

CANNED FRUITS, CITRUS, WINES, DRIED FRUITS, BUTTER, CHEESE and SUGAR are the principal commodities that could be affected if Britain were to join the Common Market. As a result I will look at these particular export commodities as I travel to other countries of S.E. Asia and will report back on the position as I see it in relation to other export commodities than those dealt with above and also the position as it differs from country to country.

ANIMAL FAT BOGEY IN HEART DISEASE EXPLODED

Nutritionist Discounts Any Association

Professor of Nutrition and Dietetics at Queen Elizabeth College in the University of London, Professor John Yudkin, depreciated that animal fats were responsible for the prevalence of heart disease in the developed countries of the world, he attributed the prevalence of the disease to an excessive intake of sugar.

These conclusions were reached by Professor Yudkin after a three years' study inaugurated in London.

He stated that cholesterol, contained in milk, butter and cheese, is not a contributing factor towards heart disease.

Professor Yudkin believes that sugar may be the clue which medical research workers have been seeking to account for the epidemic of heart disease which had hit the civilised western world, while apparently leaving undeveloped countries relatively immune.

He pointed to the rising surge of sugar consumption which matches the rising graph of heart deaths in recent years.

Professor Yudkin said in 1750 the average Briton ate no more than 4 lb. of sugar a year. In 1850 his consumption had risen to 25 lb. a year. Now, in the coronary sixties he is eating a staggering 120 lb.

Sugar lays down excess weight which puts a strain on the heart and arteries. For sedentary workers this spare fat means that the heart is often jerked from its normal idling rate into a frantic gallop when they run for a bus.

Professor Yudkin said his attention was first drawn to the possibility of sugar when noting the association between affluence and heart disease.

The rise in heart disease coincided with a considerable rise in sugar intake.

The history of man's diet and his immediate descendants indicate he was carnivorous and not a vegetable eater. The human race has diverged from this diet to a diet to which he is not accustomed. It was not a diet that would kill man off. Man has always been a meat eater and consequently a fat eater.

Professor Yudkin said there are two or three examples where the relationship between fat and heart disease breaks down.

There is an African tribe who eat vast quantities of meat whose fat intake is higher than Britain and the United States and coronary heart disease is practically non-existent. They do not eat any sugar.

Immigrants to Israel from Yemen are coming to Israel without coronary heart disease. With a change of diet coronary heart disease is appearing.

On the Island of St. Helena where the people are active and have no mechanical transport and eat a moderate amount of fat, heart disease has a low incidence.

There will be a great deal less heart disease if people smoked less cigarettes and ate less sugar, the Professor said.

Professor Yudkin said heart disease is mostly associated with affluence. In the United States people get heart disease not because they are eating more fat.

A sugar eater has five times as much chance of heart disease as the person who does not eat sugar.

In a hospital survey in London people who had heart disease had an intake of sugar twice as much as the average.

Professor Yudkin said people who have heart disease eat twice as much sugar as those who do not eat sugar.

POSITION WANTED

preferably as Sharefarmer, by experienced dairy hand, married, 2 children.
Reference available. Apply in the first instance to this office.
Telephone 51 3034.

Professor Yudkin said eat as much butter and meat fat as you like provided you reduce your sugar intake.

In Britain each person eats $2\frac{1}{4}$ lb. of sugar a week, those with heart disease eat 50 per cent more than average and those who do not have the disease eat 50 per cent less.

Professor Yudkin is in Australia at the invitation of the Australian Dairy Produce Board and the Australian Dairy Industry Council. He will visit Sydney, Canberra, Melbourne. In Sydney he addressed doctors and dietitians at the School of Public Health and Tropical Medicine at the University of Sydney and took part in radio and television discussions.

In Canberra, Professor Yudkin conferred with Dr. Ralph Reader, Medical Director of the National Heart Foundation of Australia and scientists of the Australian National University and the department of Health.

In Melbourne Professor Yudkin conferred with medical directors and consultants of leading Melbourne hospitals and research units and dietitians. He also spoke to senior students and members of the Dietetic Association of Victoria and at the Emily McPherson College of Domestic Economy.

Professor Yudkin has eight degrees and is the winner of a number of awards and distinctions.

He has held the following positions: Supervisor in Physiology, Christ's College, Cambridge; Director of Medical Studies, Christ's College, Cambridge; Professor of Physiology, University of London, at the Queen Elizabeth College.

He has published nearly 200 articles in scientific and medical journals and is author of the best seller "This Slimming Business." He has also been editor and part author of "Changing Food Habits", and "Our Changing Fare."

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INCOME TAX FOR FARMERS AND GRAZIERS

The Minister for Primary Industry, Mr. C. F. Adermann has announced that the seventh edition of the booklet "Income Tax for Farmers and Graziers" has been published and is now available for distribution.

Mr. Adermann said that since 1965, when the previous issue was published, there had been a number of important changes in the income tax laws as they affect farmers and graziers. These included changes in the provisions relating to averaging of incomes and concessions designed to minimise the effects of drought, fire or flood.

"Income Tax for Farmers and Graziers" is issued under the joint authority of the Treasurer and the Minister for Primary Industry and copies may be obtained free of charge from the Department of Primary Industry, Da Costa Building, Grenfell Street.



**YOU CAN GET 10 YEARS OR MORE
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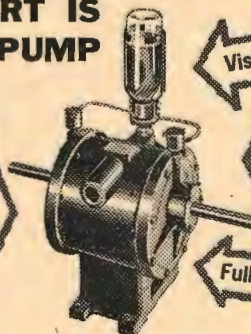
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TARIFF REQUEST REJECTED

Disappointment at Commonwealth Government Attitude

Referring to the announcement by the Acting Minister of Trade and Industry that there would be no increase in duties on fancy cheese coming into Australia, Chairman of the Australian Cheese Manufacturers' Federation, Mr. C. L. MacDonald, stated that the Australian Cheese Industry would be seriously concerned at the failure of the Government to provide reasonable protection for the fancy cheese industry in Australia.

The existing rate of 5 cents per lb. was fixed in 1928 and was at that time equivalent to 50 per cent ad valorem. Today the rate was completely ineffective against imports which were frequently subsidised in the country of origin.

The recent decision of the Commonwealth Government to continue to allow all types of cheese made from unpasteurised milk to come into Australia whilst sponsoring action by State authorities to require all Australian cheese to be made from pasteurised milk was a further example of the completely unsympathetic attitude toward this section of the Industry.

Whilst the Industry is endeavouring to lift fancy cheese manufacture in Australia, it is disconcerting to find that the Commonwealth Government does not support the Industry but rather provides advantages for the foreign manufacturer.

ONE MAN
CAN USE
IT



BUT

IT TAKES A TEAM TO PUT IT THERE

YOU have the problem

WE supply the solution

POPE makes the equipment

Your irrigation set-up tailored by a specialist to your requirements with equipment you can trust

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AUSTRALIA LEADS WAY IN AUTOMATIC CHEESE MAKING

A revolutionary development in cheese making in Australia was demonstrated by CSIRO at Highett, a Melbourne suburb, on February 24, when the first machine in the world to handle the cheddaring process automatically went into operation.

The machine was demonstrated before a gathering of State and Commonwealth Government representatives and executive members of research institutions and industry.

It is the culmination of 13 years of research into automatic cheese making by the CSIRO Division of Dairy Research, located at Highett, in collaboration with a machinery manufacturing firm.

The machine, given the name of "Cheesemaker 2," handles the second stage of cheese making — "cheddaring" or curd-fusing — which aggregates and fuses the curd into large blocks.

This has always been a laborious task with manual labour.

"Cheesemaker 2" is the first machine to provide automatic operation.

It produces cheese continuously at the rate of 6,000 lb. per hour and needs only one man to operate it, compared with about five men for manual production.

"Cheesemaker 2", which has been developed by a team headed by Mr. J. Czulak, promises to reduce labour costs by up to 60 per cent.

It will also provide quality control of the product and ensure the high hygienic standards now required by overseas markets.

THE GAP HAS BEEN FILLED

Cheddar forms 90 per cent of the 60,000 tons of Australian cheese produced each year and also represents about 60 per cent of world cheese production.

Approximately 24,000 tons of Australian cheese exported annually are valued at \$13 million.

The new machine measures 55 feet long, 9½ feet wide and 14 feet high. Its construction has had to overcome some difficult engineering problems.

It is composed entirely of stainless steel and driven hydraulically.

Automatic equipment has already been developed by CSIRO for the other stages of cheese making.

Introduction of the machine "Bell-Siro Cheesemaker 3" in 1960 provided automatic processing of the third stage of cheese making, in which slab cheese is milled into fragments, salted and hooped into molds.

But this machine could not handle the cheddaring and a gap remained in automatic cheese processing.

The new machine fills this gap.

Twenty three Australian designed "Cheesemaker 3" machines are already in commercial operation in Australia, New Zealand, UK and USA, and more are on order.

Export income already earned by Australia with these machines is expected to be augmented considerably by sales of many of the new "Cheesemaker 2" machines overseas.

Commenting on the demonstration, Dr. G. Loftus Hills, Chief of the CSIRO Division of Dairy Research, stressed the value of research in the development of national technology.

He said that the new machine illustrated the importance of thorough research into the production of new types of manufactures in Australia.

BULK MILK TANKS

ALFA-LAVAL-FIRST to meet the standard specifications laid down by the Standards Association of Australia.

The Standard Testing Authority, the S.E.C. of Victoria, reported:

"A production 200-gallon unit selected from a stock batch model has been tested by the State Electricity Commission of Victoria for compliance with specification No. ASN46/1-1963 of the Standards Association of Australia, and its report No. 64.C2/ASN46 may be inspected on request."



Higher quality milk! Less work!
More profit! Available in capacities from 100-485 gallons.
● Fully guaranteed. ● S.A. Kelvinator units used exclusively. ● All stainless steel construction, fully insulated with polyurethane rigid foam.

The very latest in modern dairying . . .

- The tank is mounted on stainless steel pipe legs with adjustable feet and is fitted with hinged, self-supporting, interchangeable, removeable covers for easy access.
- Highly polished walls, sloping floor, and 2 in. outlet pipe enables rapid draining, efficient cleaning and minimises milkstone formation.
- Circular design gives construction rigidity and all-round accessibility for easy cleaning.
- Agitator is driven by a totally enclosed electric motor incorporating a nylon-g geared reduction box to give 35 r.p.m. — no lubrication required.
- Other components consist of a centrally located dipstick calibrated in pounds of milk; a 4 in. dial-type thermometer with thermostat and a tank levelling device.

ALFA-LAVAL

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"INEFFICIENCY" CLAIM REFUTED

International Survey Reveals Cheapness of Australian Dairy Produce

The alleged inefficiency of the Australian Dairy Industry has been soundly refuted by the recent publication of a survey carried out by the International Dairy Federation.

CHEAPEST IN THE WORLD

This survey shows that in relation to the earning power of the average worker the retail prices of butter and cheese in Australia are the lowest in the world, with the price of milk being the fourth lowest.

BECOMING EVEN CHEAPER

Not only is this so, but the position is being accentuated by a relative fall in the Australian prices for all dairy produce, compared to increases in many other countries.

Because of the differences in wage rates, standards of living, currencies and standards of measure the comparisons have been made on the basis of the "minutes worked to earn" the respective products. The relative "prices" in minutes worked are:

MINUTES WORKED TO EARN

1 litre of milk

1963	1964	1965
Norway 5.4	Norway 6.0	Norway 6.0
Luxemburg 6.6	Denmark 6.0	Denmark 6.0
Denmark 7.0	Luxemburg 6.1	Luxemburg 6.1
F. Germany 7.1	Sweden 6.6	Sweden 6.3
Sweden 7.2	Australia 7.3	Australia 6.5
Australia 7.8	Fed. Germany 7.8	Fed. Germany 7.0
Switzerland 9.0	Switzerland 8.0	Switzerland 8.0
France 9.0	France 9.0	France 10.0
Finland 10.0	United Kingdom 9.6	United Kingdom 10.0
United Kingdom 10.2	Finland 10.0	Finland 10.0
Belgium 11.1	Netherlands 10.8	Netherlands 10.2
Netherlands 11.4	Belgium 11.0	Belgium 10.7
Austria 14.0	Austria 13.0	Austria 12.0
Eire —	Eire —	Eire —
Italy —	Italy —	Italy —

MINUTES WORKED TO EARN

1 kg of butter

1963		1964		1965	
Australia	53	Australia	52	Australia	49
Sweden	54	Sweden	57	Sweden	52
Denmark	67	Denmark	62	Denmark	58
United Kingdom	68	Luxemburg	64	United Kingdom	62
Luxemburg	72	United Kingdom	66	Luxemburg	64
Norway	79	Norway	74	Norway	66
Netherlands	95	Netherlands	97	Netherlands	94
Finland	100	Finland	102	Finland	101
Fed. Germany ...	123	Fed. Germany ...	117	Fed. Germany ...	110
France	136	France	126	Austria	142
Belgium	157	Austria	145	France	143
Austria	158	Belgium	152	Belgium	143
Switzerland	159	Switzerland	159	Switzerland	159
Eire	—	Eire	—	Eire	—
Italy	—	Italy	—	Italy	—

MINUTES WORKED TO EARN

1 kg of cheese (main type)

1963		1964		1965	
Australia	38	Australia	37	Australia	35
Denmark	52	Denmark	50	Denmark	46
Norway	58	Sweden	63	Norway	50
Sweden	64	United Kingdom	64	United Kingdom	59
United Kingdom	66	Norway	67	Sweden	61
Netherlands	76	Luxemburg	75	Netherlands	72
Finland	81	Netherlands	76	Luxemburg	75
Luxemburg	86	Finland	83	Finland	81
France	90	France	90	Switzerland	99
Switzerland	99	Switzerland	99	Belgium	105
Belgium	111	Belgium	109	Fed. Germany ...	111
Austria	120	Austria	110	Austria	114
Fed. Germany ...	124	Fed. Germany ...	118	France	116
Eire	—	Eire	—	Eire	—
Italy	—	Italy	—	Italy	—

Scientifically formulated...
and farm proven!

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MEDICATED

Milk Replacer



Benefit from a healthier herd
... and healthier profits.

KRAFCO MEDICATED MILK REPLACER is a specially-formulated, safe replacement for cow's milk. Containing high quality milk ingredients blended with necessary minerals, vitamins and antibiotics, farm tests have proven that dairy herds fed on KRAFCO benefit from increased growth rate, excellent bowel condition, better feed conversion. You benefit from lower feed cost—and KRAFCO mixes more easily in water, leaves no sediment.

Send for full details—and build a better herd.

To: KRAFT FOODS LIMITED,
Industrial Division,
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ADDRESS.....

KR290



where better nutrition
starts with milk

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CROSS BREEDING OF DAIRY CATTLE

By F. John Fullbrook

(Regional Livestock Husbandry Adviser of the National Agricultural Advisory Service, South Eastern Region, England)

Visitors to Great Britain, looking around our countryside, are impressed by the uniformity of our dairy herds. They see herds of Friesians, of Jerseys, of Guernseys, of Ayrshires and of others, but seldom are they mixed in one herd and few cross bred are seen. It came as a surprise to visitors to the 1966 Royal Show that the combined exhibit of the Ministry of Agriculture and the Royal Agricultural Society of England should be a demonstration of crossbred dairy cattle.

For many years, some breed societies might claim centuries, our pedigree dairy cattle have been bred pure; and cross breeding has been used only to change from one breed to another. The Longhorn gave way to the Shorthorn and this, in turn, to the Friesian, now our predominant dairy breed. To some extent the increase in this breed has been achieved by multiplying pure-bred Friesians, but crossing over from other breeds by the continuous use of a Friesian bull has played the major part. Planned cross breeding to maintain a herd of cross bred is largely a new development.

Experimental Work at A.B.R.O.

The Royal Show exhibit was based on research work into the cross breeding of dairy cattle which has been in progress for the last sixteen years at the Animal Breeding Research Organisation's station at Cold Norton in Staffordshire. Over a thousand cows of the Friesian, Ayrshire and Jersey breeds and their crosses have passed through this experiment. The results have shown an advantage to the cross bred in the characters of fertility and survival. Perhaps the most important advantage is in fertility. The crossing of two pure breeds has resulted in a 9 per cent improvement in fertility over the average of the pure breeds, while a cross bred put to a third breed of bull has resulted in a 14 per cent improvement in fertility. This, combined with the better survival characters of the cross bred, shown by 50 per cent fewer calf losses at birth, out of heifers, and 45 per cent better survival rate of one-year-old, makes the cross-bred cow worth considering.

The most interesting of the A.B.R.O. crosses was the one demonstrated at the Royal Show. This was produced by using a Jersey bull on a Friesian cow, and has been variously called the Jersian, the F/J hybrid and FX.J. (This, in itself, is a departure from the normally accepted practice of stating the breed of bull first, but with the A.B.R.O.'s complicated breeding pattern, this nomenclature was the most suitable.) The combination of the biggest and highest yielding and the smallest and highest milk quality breeds gives this cross its particular interest.

The Place of the Jersian

The production characters of cross bred are close to the average of those of the parent breeds, milk production being perhaps slightly above. It is, therefore, on the fertility and survival characters that the cross-bred cow might have a place. Two examples are suggested.

The Friesian breed has made vast strides in the improvement of the quality of the milk it produces, but there are still farmers with a milk quality problem, as is evidenced by the odd Jersey seen in some Friesian herds. The farmer in these circumstances might consider keeping Jersians along with his Friesians. Such cross bred would have better fertility and would be more likely than Jerseys to fend for themselves amongst the bigger Friesian cows. A farmer could ensure a suitable supply of Jersians by putting a Jersey bull to his Friesian heifers and a Friesian bull to his Friesian cows; the Jersians would be crossed for beef using a Charolais or Hereford bull.

Secondly, the farmer with a flying herd might see a solution to milk quality problems by contracting for a supply of Jersians, as the purchase of cows in the open market sometimes results in buying-in other people's culls. It would be possible to arrange with a Friesian herd owner to put a Jersey bull with his heifers and to buy the calves for contract rearing, thus ensuring a supply of quiet, highly fertile, easily handled, replacement cows giving good quality milk.

Beef from the Jersian

Some farmers who saw the Jersians at the Royal Show were concerned with the lower return from the beef by-product if they used a Jersey bull on their Friesians. The value of the cull cow will certainly be less, and the relative value of the Jersian bull calf is under investigation by Messrs. Spillers Ltd., of Middle Aston, Oxford, who are comparing Friesians, Jerseys and Jersians under an intensive beef system: their results are awaited with great interest. The loss in value of the beef by-product is less than might be expected. There is no problem in producing reasonable beef from the Jersian female if a Charolais or a Hereford bull is used. Figures from Gleadthorpe Experimental Husbandry Farm are awaited on the value of the calf produced by a black bull from a Jersian heifer. Many farmers already use an Angus bull on Friesian heifers for easy calving and will know the local market value of the calves produced. A Jersey bull will give equally easy calving. The cost of producing a Jersian heifer calf, out of a Friesian heifer, can be calculated simply by subtracting the value of a Jersian bull calf (almost certainly Bobby calf price) from the sum of the values of an Angus cross bull calf and an Angus cross heifer calf out of heifers.

How to Breed after the First Cross

Probably the most frequent question asked by farmers visiting the exhibit was: Having got Jersians what bull do I put to them? This question is answered to some extent in a preceding paragraph where it is suggested that they should be "crossed out" by using a beef bull.

The design of the A.B.R.O. experiment required an Ayrshire bull to be used on the FXJ. The FXJXA produced was then put back to a Friesian again to breed a FXJXAXF—a rotational cross-breeding policy. Some farmers with Jersians have adopted a criss-crossing policy using first a Friesian bull on the Jersian and then a Jersey bull on this cross. Both these latter schemes are complicated and, as Jersians can be produced so easily by using a Jersey bull on Friesian heifers, the best policy is probably to breed them to beef bulls.

The Future

Will dairy cross breeding spread? The advantages of cross breeding in beef cattle, sheep, pigs and poultry are well known. Certainly there will be a lot of Jersians born in milk-recorded herds because of the massive Milk Marketing Board field cross-breeding trial. Maybe a lot more Friesians in commercial non-recorded herds will be mated with a Jersey bull this autumn.

MILK AS A DETERRENT TO CANCER?

Milk may be a stomach cancer deterrent, according to Japanese studies.

The more affluent segments of the population who are dairy products consumers, have much less incidence of stomach cancer, the No. 1 Japanese killer, than do those not using milk.

Sir Ernest Marsden, of New Zealand, and Dr. T. Hirayama, of Japan, believe a secondary diet factor may be excessive use of salt fish, which may have accumulated radio-active elements from eating plankton, which absorb radio-active materials from the sea.

The cow screens out radio-active elements from her milk.

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THE FARMER'S SHARE

A survey on the farmer's share of the retail prices of a number of key agricultural products has been calculated for 1965 by the U.S. Department of Agriculture.

The survey shows a range of 71% for butter to 7% for canned beets. On a range of 62 key farm-produced foods, the study shows the U.S. farmer in 1965 got 39% of the money paid by housewives in retail stores. For these same items in 1947, the farmer received 51% of the retail price. The farmer's share has been steadily decreasing since 1947 to a low of 37% in 1964 and 1965, but it rose slightly to 39% in 1965.

Here are some of the food items and the farmer's share of the retail price:

Product	Retail Unit	Retail Value (cents)	Farmer's Share
Beef, choice	pound	70.8	60%
Lamb, choice	pound	70.0	56%
Pork	pound	52.3	51%
Butter	pound	74.4	71%
Cheese, American processed	½ pound	36.7	41%
Ice Cream	½ gallon	80.4	24%
Milk, evaporated	14½ ounces	14.9	43%
Milk, fresh— home-delivered	½ gallon	52.8	41%
Frying chicken	pound	36.3	54%
Eggs	dozen	51.5	57%
Flour, white	5 pounds	56.7	35%
Apples	pound	17.7	31%
Oranges	dozen	88.1	33%
Cabbage	pound	10.3	27%
Carrots	pound	14.9	23%
Celery	pound	15.7	31%
Lettuce	head	24.6	34%
Onions	pound	11.2	29%
Potatoes	10 pounds	75.7	37%
Tomatoes	pound	33.2	34%
Peaches, canned	2½ can	33.2	14%
Beets, canned	303 can	16.7	7%
Corn, canned	303 can	19.0	13%
Orange juice concentrate	6 ounces	31.0	48%
Peas, frozen	10 ounces	21.0	15%
Margarine	pound	26.0	28%
Sugar	5 pounds	64.0	37%

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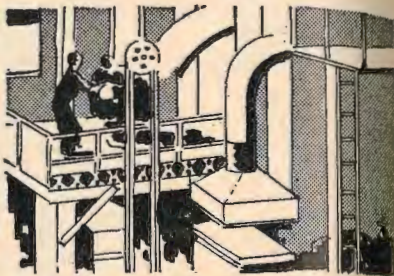


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MASTITIS—A MULTI-MILLION DOLLAR PROBLEM

By A. K. LASCELLES,

(Professor of Dairying, Husbandry Research Foundation,
The University of Sydney.)

The National Mastitis Committee reported recently that mastitis is costing the Australian dairy industry some \$35,000,000 annually.

The economic loss attributable to mastitis is considerable and it is worthy of the expenditure of funds by the industry on both applied and basic research to reduce it.

There is, of course, considerable fundamental knowledge about this disease. We know that mastitis is an inflammation of the udder usually caused by bacteria — the most common causes being staphylococci and streptococci. We know that the streptococcus is an obligatory intramammary parasite and that the damage produced by this organism within the udder is of a nature that permits adequate treatment with anti-biotics injected into the mammary gland. We also know that streptococci are rarely, if ever, penicillin resistant. On the other hand the staphylococcus is a much more difficult organism to deal with. Firstly it is ubiquitous in nature, grows on the skin, particularly the udder skin, and produces a lesion within the mammary gland such that antibiotics injected into the mammary gland are not able to gain access to the organism and kill it. Furthermore, staphylococci are very prone to become resistant to antibiotics and particularly penicillin.

We also know that heifers are usually free of this organism either within the udder or on the udder skin. Insofar as the spread of the organisms from cow to cow is concerned there is good evidence that this generally occurs at milking time by way of three agencies:—

1. The milker's hands;
2. Udder cloths;
3. The inflations.

There is no doubt in my mind that a carefully administered control programme based on the fundamental knowledge of this disease using improved hygiene methods, the culling of chronically infected cows, the diagnosis and treatment of selected quarters and correct functionings and handling of milking machines would significantly reduce financial loss.

However, the ultimate development in research for the control of mastitis would probably be something in the nature of a vaccine.

To turn to fundamental research in this field I would like to describe briefly some of our own work which has been concerned with **local immunity of the mammary gland.**

A considerable amount of research has already been done on the effects of vaccination of dairy cows, goats and sheep, by injection under the skin or into the muscle. This has given rather disappointing results, probably for two reasons:

1. The vaccines—these have not contained all the ingredients necessary.
1. Systematic immunisation depends upon the production of antibodies in the body and their circulation through the bloodstream. The mammary gland, however, is relatively impermeable to antibody molecules. Thus antibodies circulating in the bloodstream do not readily gain access into the mammary gland and its milk.

We have found, however, that the infusion of vaccines through the teat canal of animals during the dry period (about one month before the birth of

the young) gives rise to a significant immunity which persists throughout the following lactation. In other words specific antibodies to the vaccines are secreted into the milk at high levels. In non-vaccinated mammary glands the level of specific antibody is very low, even though the level in the blood is high.

Preliminary results have suggested that the antibody is made by cells within the epithelial lining of the gland. Although these initial studies were carried out using killed bacteria not normally involved in mastitis as it is seen in the field, these experimental results certainly have established the principle of vigorous and sustained local immunity. More recently, experiments have been carried out to test the effectiveness of intramammary vaccination of a variety of staphylococcal vaccines. One vaccine preparation was made at our laboratories and another was obtained from Commonwealth Serum Laboratories. The results indicate that a significant degree of protection is conferred on the gland by local vaccination. The best results were obtained with the C.S.L. vaccine. There is no doubt that this work has real practical possibilities although much more extensive testing of more elaborate vaccines which C.S.L. have agreed to prepare must be carried out in the future.

Work is also being carried out by our research staff on milk composition and secretion studies, lactational physiology with special reference to the formation of milk fat, milk quality studies and improved milking machine design. In addition, our mastitis programme will be extended to investigate the possibilities of immunisation against streptococcal mastitis; and in this connection we are receiving the full co-operation of the Institute of Research on Animal Diseases, Compton, England.

Here then is an example of research which is currently being carried out on one of the dairy industry's most important problems. It can be seen that this type of research should run hand-in-hand with applied research, **which is, after all, the application of fundamental knowledge tested in practical situations.** Both are essential in helping our industry overcome its many problems.

Artificial Insemination Bred Cows Out-yield Natural Service Counterparts

A Milk Marketing Board survey has shown that artificial insemination bred Ayrshires out-yield their natural service herd mates by 20 gallons, that artificial insemination bred Guernseys have a bonus of 18 gallons and that artificial insemination Jerseys have a bonus of 22 gallons.

These results are shown in three surveys which were conducted in much the same way as the British Friesian heifer survey — using figures for 1964-65 — which claimed a 35-gallon bonus for Black and Whites bred by A.I. The figures are based on 551 Ayrshire herds, 302 Guernsey herds and 395 Jersey herds all of which use both artificial insemination and natural service.

"These results, like the plus 35 gallons for Friesians, are the result of selecting bulls on the basis of their progeny tests," says Milk Board geneticist, Dr. Kevin O'Connor. "I did not expect A.I. bred Ayrshires, Guernseys and Jerseys to show as great a superiority as A.I. bred Friesians because the progeny testing programme for each of these breeds is not so well developed. It has been more difficult with the less popular breeds to progeny test accurately a sufficient number of bulls. But results are very encouraging."

PRODUCTIVITY RISE HOLDS UNIT COST STABLE

Board Cost Survey Shows Increased Efficiency

Despite higher prices and increased allowances for labour, licenced producers in the Adelaide milk supply area appear, according to the Metropolitan Milk Board's latest production cost survey, to have been able to further improve productivity and so keep down the calculated cost per gallon.

Overall prices of goods and services paid for by the farmer rose by 15½%, whilst the allowance for labour rise, in line with general wage increases by 7%, but there two increases were offset by an average production increase of 3,356 gallons on the survey farms brought about by a very creditable rise in per cow productivity to **704 gallons** (317 lbs. butterfat).

Major increases per gallon in paid-out costs were for fodder and concentrates, from 3.50 cents to 3.99 (14%) cents, "other expenses", from 2.81 cents to 3.03 cents (8%) and rates and taxes, from 0.68 cent to 0.72 cent (6%).

The figure for paid-out and imputed costs was 35.23 cents average cost per gallon, for an average output of 35,909 gallons per sample farm, milking 51 cows.

SATISFACTORY LEVEL FOR BUTTER QUOTA ON U.K. MARKET

But Low Price Under Fire

Australia's quota of butter for the United Kingdom market for the year beginning April 1 had been increased to 74,700 tons under a new total of imports announced this week by British Board of Trade President, Mr. Douglas Jay.

Advising the House of Commons that the quota system for butter would be continued for a further 12 months, he said that a total of 470,000 tons had been authorised, compared to 435,500 tons last year — although the actual import figure was higher.

For Australia, the initial allocation is 72,200 tons, with an additional 2,500 tons later in the year. This means that Australia has retained its share of the U.K. market for the next year. Last year, Australia's quota was 66,700 tons.

"Butter is in plentiful supply and prices are steady," Mr. Jay said. "We shall keep the situation under review and are prepared to authorise the import of an additional 5,000 tons after consultation with New Zealand and Australia, should this be necessary."

New Zealand will supply a total of 176,000 tons in the coming year, an increase of 6,000.

New Zealand, until last year, held the right to supply 40 per cent of Britain's butter imports, but this was lost in the latest trade agreement and replaced by an annual tonnage quota.

Mr. Jay said that of the total 470,000 tons to be imported, about 440,000 would be basic imports, and 30,000 supplementary quotas for import before November 30.

Australia and New Zealand are among only three major butter exporters which have had their basic quotas increased.

THE ROLE OF IFAP

One of the problems that confronts the National Farmers' Union of Australia is the divided opinion among its constituent member organizations concerning membership of the International Federation of Agricultural Producers.

It is only fair to say that the divided opinion derives not so much from doubt as to the value of membership of IFAP but from doubts concerning the wisdom of allocating to the IFAP membership subscription the large proportion of available funds that is required.

The Australian Dairy Farmers' Federation, as befits an organization representing an industry with a very large stake in stable overseas markets, is steadfast in its opinion that the NFU's membership in IFAP should continue, and has backed its policy with substantial financial contributions to N.F.U. for this purpose.

The continuation of membership in IFAP is still the subject of debate, and it is only reasonable that individual members of the organizations comprising the NFU should be informed on the issues at stake.

Because of the widespread lack of knowledge of the function of IFAP the Canadian Federation of Agriculture invited the General Secretary of IFAP, M. Roger Savary, to address its Annual Meeting, and we publish the following passages from M. Savary's speech.

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. . . To put the common thinking of IFAP member organizations in a nutshell I would say that their over-all aim is to transpose to world level approaches which have, over the past three decades, proved reasonably successful in mitigating the economic hardships of agricultural producers in their respective countries: create an environment conducive to increasing productivity; ensure, through orderly marketing, a degree of price stability on which to build reasonable production plans; secure a degree of parity of farm labour and management incomes in relation to those enjoyed in the non-farm sectors; bring about the unavoidable structural changes in an orderly and humane manner; expand and strengthen the network of farmer-owned and administered supply and marketing societies; preserve the freedom of the agricultural entrepreneur and work towards an ever-widening network of international co-operation.

. . . Member organizations can legitimately claim, after the last twenty years, that two major aspects of IFAP's task have been fully implemented. There are few sectors of human endeavour where mutual understanding and goodwill have benefited more from the activities of an international organization; and there are few sectors of international co-operation where liaison is closer between the competent intergovernmental agency and the competent non-governmental organization, than in the field of Agriculture and Food.

IFAP has won a reputation in international circles—and especially perhaps among the harried delegate to its conferences and meetings—for hard work. Neither the working papers placed before delegations, nor the themes discussed throughout long working hours each day, nor, indeed, the painstaking hammering out of reports (which have as a rule been adopted unanimously by delegations from 33 countries of different languages and backgrounds), conjure up the picture of pleasant relaxation in foreign surroundings which is all too often associated with international congresses. But these stringent methods have paid dividends. Farm leadership is undoubtedly more enlightened and progressive in many countries today as a result of years of working together on issues of mutual concern, and I know of no better recipe for de-fusing explosive issues and making progress in the direction of sensible compromises.

Similarly, our relationship with intergovernmental agencies can rarely be faulted. "The exemplary record of FAO and IFAP" is, in fact, the theme of an address to be given by Dr. Sen, Director-General of FAO, on the occasion of IFAP's Twentieth Anniversary. Several other international agencies maintain the

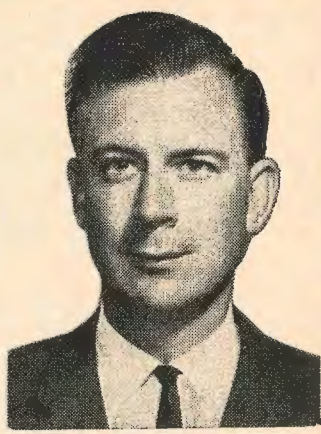
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same type of close liaison with farmers' organizations through IFAP: the Economic and Social Council of the United Nations and its regional commissions, the International Labour Organisation, the Organisation for Economic Co-operation and Development (OECD) and others.

It will be obvious to anyone with long experience in the complex field of relationships between a farmers' organization and government that the kind of representations which are likely to lead to effective action on the part of the latter are not always those which the rank and file would at first think most appropriate. It is essential for an international organization to apply the same rule in its approaches to intergovernmental bodies. I believe that IFAP has met this test of statesmanship and has never incurred the odium of being branded "irresponsible" even by the most severe critics of non-governmental bodies.

There are many who used to question the possibility of achieving a consensus among representatives of farming communities whose interests and aspirations would at first sight appear to be different and often conflicting. IFAP has proved beyond doubt, however, that the scope of international cooperation is immense. Through IFAP, national farmers' organizations are striving to fulfil the following aims:

First, a better, more balanced, and more comprehensive knowledge of agricultural conditions and policies in other countries.

Second, an unbiased appraisal of existing and foreseeable conditions on world markets.

Third, an exchange of experience which permits learning from each other successful ways to deal with all the issues which are of mutual concern to primary producers the world over: the unsatisfactory rewards of agricultural production in relation to earnings in other pursuits; the inadequate socio-economic development of most rural areas; the growing tendency for big business to take control of an increasing number of farming enterprises.

Fourth, evolving among producers' representatives a common approach to speed up progress on a global scale towards the key objectives of our time:

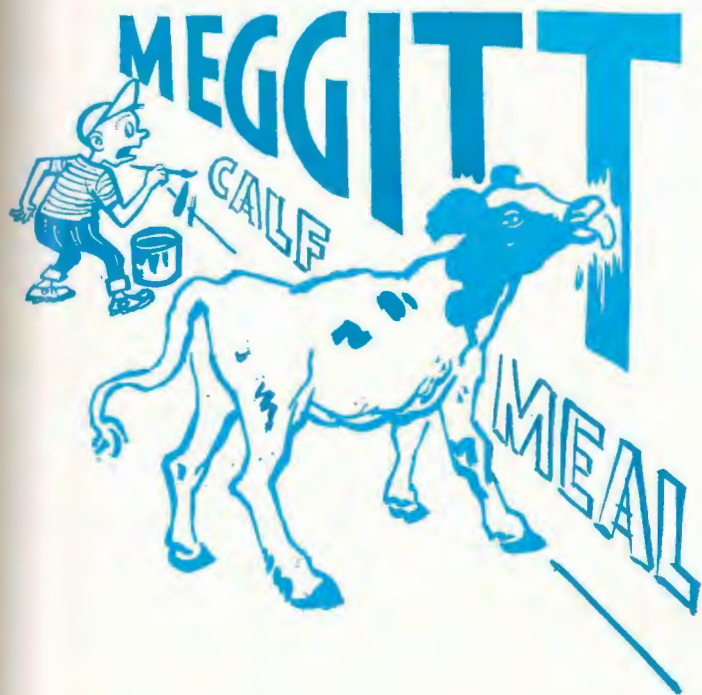
- an accelerated rate of economic growth in every country and especially in those where inadequate development is the root-cause of under-consumption;
- an expansion of international aid programmes including those directly aimed at supplying food.

Fifth, seeking solutions for the fundamental problem of international trade: that of reconciling the social objectives of national farm support policies with the requirements of an active inter-exchange of goods with due regard for comparative efficiency.

Sixth, and last, maintaining a permanent centre for the dissemination of the mutually agreed findings and conclusions, equipped to bring pressure to bear on governments—through member organizations at national level and through its elected office-holders and secretariat at international level.

Nobody would claim that farmers' organizations have been one hundred per cent successful in these endeavours. But it is a fact that the kind of approach outlined by their delegations to the founding conference of IFAP has been steadily, albeit slowly, making progress on all major fronts:

- The essential place of food production among all forms of human enterprise is steadily being given better recognition—and this is no small achievement in a century when the glamour of industrialization attracts so many.
- There is now in operation a World Food Programme, recently renewed for another three years and established on a continuing basis. This programme is the forerunner of the greatly enlarged multilateral food aid programmes which will obviously be required in the near future.
- The necessity of international commodity agreements for the orderly marketing of major agricultural products is no longer in dispute.
- Governments at the 1965 Conference of FAO have given the green light to the preparation of an Indicative World Plan. . . .



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Editor Mr. H. E. LOEHEL
General President

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MEADOWS

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JERVOIS

— on the property of MR. W. S. POLKINGHORNE, "CLAIR ROY", at 1.30 p.m. on Tuesday, 12th September, 1967.

MT. SCHANK

— on the property of MESSRS. W. L. SAUNDERS & SON, MacLean's Road, at 10.30 a.m. on Wednesday, 13th September, 1967.

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— A Film Evening by courtesy of the ALLENDALE EAST AGRICULTURAL BUREAU, in the Allendale Pavilion at 8 p.m. on 13th September, 1967.

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GENERAL PRESIDENT'S ANNUAL REPORT

SEASONAL CONDITIONS

I do not need to inform you of the seriousness of the present seasonal conditions; this has, for many months, been only too clearly apparent in your rapidly emptying hay sheds, in the paucity of grazing in your paddocks, in the condition and productivity of your stock, and in the reduction in your financial returns.

The steady increase in productivity per farm and per cow that has, in recent years been a feature of dairymaking in the Adelaide milk supply area has, by lack of rain and the shortage of fodder, been halted, and replaced since early May by declining yields.

ATTACKS ON THE INDUSTRY

In such circumstances it is disturbing to find our industry again subject to attacks on its alleged inefficiency, this time by a political group which regurgitates the arguments of the agricultural economists who have criticized the industry in recent years.

The facts are that, despite high tariff protection for secondary industry and a wages policy that appears to be blind to the existence of primary producers, the Australian dairymaking industry has, by the application of hard work, careful husbandry, and scientific method, achieved a level of efficiency which enables it to sell its butter and cheese on the home market at prices which are **the lowest in the world in terms of average wage rates**, and **third lowest in absolute terms**, only New Zealand and the United Kingdom being below the Australian prices.

PRODUCTION AND SALES

We need not, however, be unduly concerned by such criticism. Our best answer lies in performance and I am pleased to be able to announce yet a further increase in productivity, for the seventh consecutive year, in the Adelaide milk supply area, the total of 50,887,000 gallons representing an increase of 68 per cent during that period.

It is unfortunate that the sales of liquid milk, although higher, at 21,156,000 gallons, than in any previous year, have not increased in the same proportion as has production, and indicate a slight decline in the average rate of consumption per head.

THE CHEESE SITUATION

The extent of the increase in productivity is such that we are now supplying for the manufacture of cheese alone the equivalent of our total annual output prior to 1960, and it is most gratifying, in such a case, to be able to report that the demand for cheese, particularly for South Australian cheese, is being so well maintained. The steady improvement in quality that is being brought about by the adoption of new farm and factory techniques has increased the domestic demand and brought a ready acceptance of our produce on export markets at

prices above those of previous years, and on this basis the Commonwealth Dairy Produce Equalization Committee Limited has been able to recommend an interim opening value for cheese which will return to licensed producers in the Adelaide milk supply area an interim basic price of 38.05 cents per pound butterfat.

The consumption of cheese in Australia has increased by 20% in the last five years, and now stands at over 8 pounds per head, but we believe that even this figure could be substantially increased if the marketing of cheese, particularly in regard to grading and labelling, were improved, and we look confidently to the forthcoming meeting of Chief Dairy Officers for recommendations as to how this may be brought about. We are, however, disappointed that so much of this local consumption, in a country whose cheeses are often equal to the world's best, is supplied from overseas countries and that the Tariff Board has rejected the industry's request for an increase in the tariff protection afforded for non-cheddar type cheese which has prevailed unchanged for 39 years and is considered by the industry to be insufficient to allow, in the prevailing economic conditions, further development of fancy-cheese production by Australian dairy factories.

QUARANTINE REGULATIONS FOR CHEESE

However, our concern at the rising level of cheese imports extends beyond the economic aspects. In my report last year I referred to the regulations which had then recently been gazetted by the Federal Department of Health, and which required all imported cheese to be furnished with a certificate of pasteurization as a protection against the introduction of pathogenic organisms which might constitute a threat to public health or to the health of our livestock. It is to be deplored that these regulations, which devolved from the consideration by the National Health and Medical Research Council of the risks of outbreak of exotic diseases, were almost immediately revoked by the Commonwealth Government. In view of the stringent requirements that apply to cheese imports from this country, from whence there is absolutely no danger of introducing epidemic diseases, we consider the Commonwealth Government's capitulation in this matter, and the unnecessary re-exposure of the people and livestock of Australia to possible danger, to be completely unwarranted, and we call for urgent and unbiased attention to be given to the re-introduction of the regulations in their original form, without their force being diluted by time-lapse provisions which have been shown by scientific research in this country to be ineffective.

F.I.L. ACKNOWLEDGES OUR SUPPORT

The South Australian Manager of Federation Insurance Limited, Mr. G. R. Schlank, recently presented the South Australian Dairymen's Association with a cheque for \$2,500 representing over-riding commission on business transacted by his Company with Association members during the preceding year.

Being a specialist organization, dealing only with clients who are members of trade associations and hence may be classed as "good risks" in the insurance sense, F.I.L. has been able to provide outstanding service at rates considerably lower than those of insurance firms whose clientele are drawn from the general public, and, in addition, pays to the Association an over-riding commission in recognition of the Association's co-operation in its activities.

The increase in business done with our members in the last few years has been spectacular, and the presentation of a cheque of this magnitude marked a milestone in the association of the two organizations.

Insurance is a necessary part of dairy farm management today and insurance with F.I.L. is a sure way of keeping the cost of this factor down to the minimum commensurate with adequate protection.

THE BUTTER SITUATION

Although only a small portion of our produce goes into butter we share with the industry generally the concern at the decline in butter consumption in Australia, which has now fallen below 22 pounds per head, and at the unsatisfactory conditions prevailing in the export markets, and we have, as an Association, not hesitated to support such moves as the Butter Promotion Incentive to improve the present position. We have also deplored the brazen flouting of the law concerning the marketing of table margarine, giving our full co-operation to the Australian Industry Council in its opposition to this action, and successfully enlisting the support of the Minister of Agriculture in retaining, unchanged, the appropriate legislation in this State.

However, we are disturbed to find that, heedless of the action taken by the Federal and State Governments, disregard of the law continues, but in a different mode. Whereas there may have been grounds for genuine differences of opinion as to the acceptability by the public of the legislation controlling production of table margarine, the public cannot condone the impudent flouting of the regulations relating to the labelling and advertising of cooking margarine, designed to protect the public from the unwitting purchase of inferior substitutes, and we believe that action should be taken to prevent such counterfeiting, or, if the legislation is shown to be at fault, to have it corrected or revoked.

THE STABILIZATION SCHEME

Apart from this instance and the two exceptions cited earlier, we consider ourselves fortunate that we, as an Association, and the dairying industry generally, have continued to receive the support of State and Federal Governments, particularly in the continuation of the Commonwealth Dairy Stabilization Scheme in a form substantially identical with the proposals submitted by the Australian Dairy Farmers' Federation, of which we are a member organization, earlier this year. Although the 27 million dollars bounty no longer purports to bridge the gap between costs and returns it goes some way toward lightening the burdens placed on primary producers by the importuning of secondary industry, and enables us to continue to make our contribution to Australia's export earnings and her prosperity generally.

Because of our contribution it is unfortunate that this prosperity is not shared by a depressed section of the dairying industry; there is undoubtedly a large number of dairyfarmers who, despite incessant toil over long hours, are prevented, by reasons beyond their control, from achieving a standard of living commensurate with that of the rest of the community, and we applaud the Commonwealth Government for acceding to the Australian Dairy Farmers' Federation's request by initiating action designed to ameliorate the plight of this section of our industry.

IMPROVING THE POSITION

Apart from the marginal dairyfarmers the remainder have again managed, by dint of improved husbandry, greater efficiency, increased productivity, and more hard work, to absorb constantly rising costs, but there must come a time when the scope for further improvements vanish and we must, before then, look to other, more complex, measures than these homely, self-applied remedies.

For the members of this Association the first of these is obviously to increase the sale of liquid milk, but the means whereby this may be done is not so evident. The large sum now totalling half-a-million dollars annually, expended on the advertising and promotion of milk in other States has not increased the average consumption of milk, and the claim that, without this expenditure, consumption would fall even faster is contradicted by the position in this State, where average consumption remains practically stable with no promotional expenditure at all. We must give earnest consideration to any proposals intended to increase the consumption of milk, but we must ensure that we do not accept the easy way of spending money on promotion that may have no worthwhile effect with-

out insisting that the alternatives that are in common use in other countries, particularly the active marketing of whole milk products in a greater variety of grades, types, and packages, are undertaken by the processing and retailing sections of the industry.

The improving of the method of supplying milk to schools must also take precedence over mere advertising. Surveys and commonsense both reveal the necessity to keep school milk at a low temperature for both quality and palatability and it is to be hoped that approaches to the Education Department may soon be fruitful. If the present processing margin is insufficient, this Association will actively support an increase to cover the cost of cooling, and signs that the processors are taking the initiative in this matter would be applauded.

MILK QUALITY

But without doubt the paramount factor in increasing sales is the quality of the product. Great care is needed to maintain the necessary standards during the summer months, and the Metropolitan Milk Board has indicated its intention to examine the possibility of introducing legislation to make refrigeration compulsory. There is no doubt that refrigeration, properly used, can make a substantial contribution to the quality of milk, but there must be some doubt as to whether it should be applied by the force of law. The adequacy of the existing standards has not been questioned and the Board should surely seek to improve the methods by which these standards are policed before intruding upon our freedom of action.

PRIMARY PRODUCER UNITY

In these days no report on primary production is complete without some mention of "Unity", which poses as the cureall for our problems by enabling us to intimidate Governments and their officials by speaking with "one voice." Yet this philosophy overlooks the possible existence of two points of view, both perhaps equally valid and equally supported, and it overlooks the fact that Governments are more likely to be persuaded by reasoned and reasonable argument than by "one voice", however loud. In the long history of this Association, which under one name or another has existed for 65 years, we have found the Governments, the Ministers, and the Departments of the day always prepared to listen, and always ready to act if our case carried conviction. Certainly there are aspects of primary production which affect more than the dairyfarmer, and in these we are ready to enlist the support of the producers of other commodities, but only so that the wider application can be adduced as additional reason, not that we may speak with a louder voice.

APPRECIATION

Whether alone or with other groups we have, during the last year, found the Minister of Agriculture always sympathetic to our cause and ready to act on our behalf, as instanced particularly in the matter of margarine, and for this we express our appreciation and gratitude.

The staff of the Department of Agriculture and the Metropolitan Milk Board have also readily given assistance and advice when such has been requested, and our thanks goes to them also.

As President of the Association I am grateful for the support of the Executive Committee and the Central Council, and for the willingness of the staff.

Despite the uncertainty of the coming season a continuation of the spirit that has pervaded the Association during the past year will enable us to face our problems with hopeful expectation.

—H. E. LOEHEL, General President.

BLOATGUARD*

does what its name says. Prevents bloat.

Bloat Guard* lets you put cows on to high protein pasture to increase milk production without a bloat worry.

BLOAT GUARD*—the result of 8 years' intensive research—is the most effective bloat preventative. A small quantity mixed with each cow's morning bail feed, gives all day protection. It prevents stock deaths from bloat, does away with the need for pasture spraying and expensive electric fences, and lets

you use the valuable high protein pastures that can increase your milk production. Without the protection of Bloat Guard,* valuable pastures are wasted.


Additionally, Bloat Guard* is acceptable to stock, does not contaminate milk or animal tissues, and never falls off in effectiveness.



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You can buy Bloat Guard* in 5-lb. and 20-lb. drums—or just ask your feed manufacturer to mix it into your dairy meal.

BE READY FOR BLOAT THIS YEAR—order Bloat Guard* and Bloat Guard* Drench now from your supplier.

BLOATGUARD* 

More information from Smith Kline and French Laboratories (Australia) Limited, Warringah Road, French's Forest, New South Wales.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

	PRODUCTION (000 gallons)					
	For Month		Total since July 1		Total since Jan. 1	
	1966	1967	1965/66	1966/67	1966	1967
May	3,214	3,135	45,623	47,757	16,706	17,550
June	3,528	3,130	49,151	50,887	20,234	20,680

	SALES (000 gallons)							
	For Month		Total since July 1		Quota %		C.M.B.	
	1966	1967	1965/66	1966/67	1966	1967	1966	1967
May ...	1,786	1,858	19,268	19,339	55.6	59.3	27.50	27.41
June ...	1,738	1,817	21,006	21,156	49.3	58.1	27.46	27.25

Moving average quota for 12 months ended 31/5/67, 41.18%;
30/6/67, 41.57%

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)			(per gallon)				
1967								
May ...	41.25	27.41	68.66	21.26	24.80	28.34	31.89	35.43
June ...	41.25	27.25	68.50	21.21	24.74	28.28	31.81	35.35

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	May		April	
	1966	1967	1966	1967
Butter—Choicest Australian	300/—	300/—	300/—	300/—
Cheese—First Grade Australian	225/—	240/—	225/—	240/—
Rindless Australian	250/—	270/—	250/—	270/—

NEW HIGH IN OPENING PRICE

The sound position of cheese on local and overseas markets, aided by the increase of 1 cent per pound in the Commonwealth Government's underwriting of interim values, and the life in the bounty allocation for cheese has enabled the financial year to open with the highest interim basic price for 14 years. Licensed producers in the Adelaide city milk area will thus receive an interim basic price of 38.05 cents per pound butterfat.

PRICE FALLS IN AUGUST

Increases in cartage costs announced by the Prices Commissioner have resulted in the interim basic price reported above being reduced by 0.1 cent to 37.95 cents for August.

WANTED: RENT, LEASE or SHARE proposition, by dairyfarmer, with small but growing pedigree herd, who wishes to move to a larger property. Apply, in the first instant, to this office: Telephone—51 3034.

SHARE FARMING: Position wanted by experienced sharefarmer and son. Present property going out of dairying. Will consider immediate or future proposition. Apply, in the first instance, to this office: Telephone 51 3034.



Relieve Calf Scours in hours with new Neftin Tablets

Scours can strike—and spread quickly—at any time, on any farm, even well-kept farms. Bacterial scours are the greatest health threat to your stock investment. Overnight, a scours outbreak can turn profits into losses. And calves are valuable. Prompt, effective, 'Neftin' treatment is essential if your loss is to be kept to a minimum.

Time is the big factor—both for the infected animals and to prevent spread of the disease to others. 'Neftin' tablets work fast. Relief is apparent in a matter of hours

and calves recover in a day or so.

With 'Neftin', there are no future problems of bacterial resistance as there are with sulphas and antibiotics. And 'Neftin' is only half the cost of broad-spectrum antibiotics when used for a full 3 day course of treatment.

But 'Neftin' is so effective that just two doses, twelve hours apart, are often sufficient.

Your usual veterinary supplier will advise you. 'NEFTIN' tablets are the modern, effective, economical treatment for calf scours.

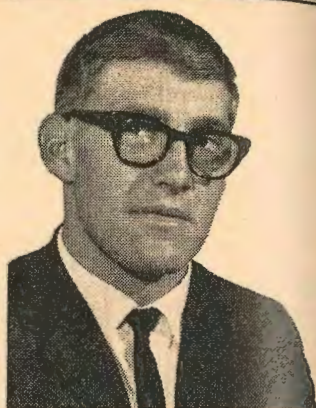


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CHANGE IN BOUNTY ALLOCATION BETWEEN BUTTER AND CHEESE

In recent years the amount of Commonwealth bounty paid per pound of butterfat in butter has been considerably higher than that for butterfat in cheese, a situation that is undesirable at a time when every effort should be made, in the interests of the dairying industry and Australia generally, to swing production away from butter, with its declining local consumption and overseas marketing difficulties, towards cheese which is experiencing increasing demand at home and ready acceptability in export markets.

In this belief the South Australian Dairymen's Association has in the last year fully supported the proposal that bounty should be allotted equally between butter and cheese on a butterfat content and in May the Australian Dairy Industry Council accepted the Association's approval to set up a special committee to examine the effects of such a move.

The Committee, after studying all aspects of the proposal, presented its report and recommendations to the A.D.I.C., which adopted them, and subsequently for 1968-69 and the subsequent years of the present Stabilization Plan the bounty for cheese be increased by \$400,000 for the current year (1967-68), and that for 1968-69 and the subsequent years of the present Stabilization Plan the bounty be allocated equally between butter and cheese per pound butterfat.

At estimated production levels this will mean that from 1968-69 onwards additional bounty at approximately \$900,000 annually will go towards cheese.

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N.F.U. MOVES TO CANBERRA

The National Farmers' Union of Australia has recently moved its centre of operations to a new office in Canberra.

Formerly located in Sydney, the changeover is the culmination of proposals which have been considered over a number of years.

The union represents 80 primary producer organisations throughout Australia in matters of common concern. These bodies and their branches are spread across the Commonwealth from Cairns in North Queensland to Carnarvon in Western Australia. Overall, these represent an estimated 160,000 individual farmers, graziers and orchardists.

The new N.F.U. office is located in Commerce House, Barton, in an area set aside by the National Development Commission for organisations of this kind.

B.I.G. IDEAS ABOUT THE DAIRYING INDUSTRY

Dairy farmers throughout the Commonwealth are receiving copies of two publications purporting to show up the shortcomings of their industry and the futility of the Stabilization Scheme. The campaign is being sponsored by the Basic Industries Group, B.I.G. for short, which is alleged by the Leader of the Country Party, Mr. John McEwen, to be an off-shoot of the Liberal Party with the intention of breaking-up the Liberal-Country Party coalition, and to be financed by a number of exceedingly wealthy anonymous persons with interests allied to secondary industry, in particular the margarine industry.

The cost of sending the publications to "every dairyfarmer in Australia" is claimed to be \$25,000, but much of this will obviously be wasted because the publications have been addressed not personally to the dairyfarmers but to "the private mail box and roadside bag holder," so that many will not receive a copy, and many copies will go to persons who are not dairyfarmers.

However, this merely indicates that the B.I.G.'s mailing system is about as inaccurate as its propaganda.

In fact, the propaganda contained in B.I.G.'s own book, "The Great Hoax," is not only inaccurate, it must surely be the most ineffectual propaganda ever printed, for it seeks, in a single publication, to influence two different groups against the other group, from different viewpoints in a way that will cause more laughs than any other reaction. The first half of the book tells dairyfarmers in Queensland and New South Wales that because things are so tough for them, they are the ones who deserve the subsidy, but since Victorian dairyfarmers are so good at dairying they produce 60% of the nation's dairy production and so steal away 60% of the subsidy from those who really need it.

The second half of the book tells the Victorian dairyfarmers that they are getting less for their produce than they should because Australia produces more dairy output than it can consume and so has to sell the surplus at a loss, the surplus being produced, as you may guess, by the inefficient no-hopers in Queensland and New South Wales.

Had the book been published in two parts, one part being sent to Victoria and the other to the northern farmers it might have had some effect. But then, they might have posted the wrong halves anyway!

The second book is a Current Affairs Bulletin originally published by the Department of Adult Education of the University of New South Wales, and subsequently re-issued by B.I.G. in conjunction with its own book.

Because the Bulletin, which is entitled "Milking the Economy," may, as a University publication, carry more authority than B.I.G.'s own futile attempt, the Australian Dairy Produce Board has issued a refutation which is printed below, and is followed by a general statement on the efficiency of the dairy industry in general which will be of value in convincing those outside the industry who lack the knowledge to see the fallacies in "The Great Hoax".

☆

☆

THE CURRENT AFFAIRS BULLETIN

The start of the article contains two obviously untrue stories (about the Indian economist and the dairy farmer's reply); although these stories are not meant to be taken seriously, it is significant that the lead-in sets the tone of innuendoes and the biased writing which follows.

The first inaccuracy appears on the first page — the reference to the \$27 million subsidy paid each year — as the writer mentions processed milk as coming within the subsidy.



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Because Meggitt Dairy Feeds are scientifically formulated you can be sure that your herds get essential nutrients in the most beneficial and palatable proportions to—1. Increase milk yields. 2. Give higher butterfat percentages. 3. Ensure longer lactations. 4. Produce consistently higher performances from any breed.

5. Improve animal health. 6. Lower feed costs.

Furthermore Meggitt offer a choice from four high protein feeds for milkers.

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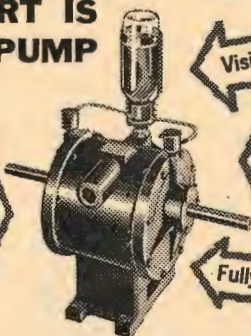
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The protection figures of 59% for butter and 34% for cheese are unfairly based as they compare actual total returns received by producers with what they would have received had all sales been at export parity.

Obviously, an industry could not exist if all butter were to be sold at export parity and, in any case, to be fair, we should assume that other exporting countries would do the same. This would increase home consumption, thereby reducing supplies on world markets which would, therefore, raise export parity prices. The argument is, therefore, economically unsound.

This is rather an important point as, from this the writer builds up a total cost to our economy of \$73.6 million annually, and he bases arguments right through on this figure.

We have not studied the Parish Document which is referred, but would question the 14-20 million dollars per year which is kept tied up in dairying, and which could be used to better advantages in other forms of production. We feel he is not entitled to include this in his article unless he is prepared to amplify it.

More "sloppy" reporting — in reference to the Australian Dairy Produce Board's advertisements when, in fact, the writer should be referring to the Australian Dairy Industry Council's advertisements. Not a major point in itself, but one which indicates a rather "slap dash" method.

He refers to the low incomes of dairy farmers and is basing all his charges of "inefficiency" and "failure" on this argument.

We would dispute the assertion towards the end of page 196 that "very small amounts of capital other than land and livestock are employed (in dairying)". How does this compare with wool, wheat and beef?

The second column, page 197 — he refers to short lactation periods and very low yields per cow in Queensland and the North Coast of New South Wales. He does not, however, mention that this yield has substantially increased over past years.

He refers to a "singular lack of success" of the protective measures for the dairy industry. We do not know what he means by this. He cannot be referring to lack of export markets, increased output, greater value for money being offered to consumers, or more efficient methods. As we have seen, he cannot be referring to lack of increase of yield per cow.

In the next sentence, we see an argument that \$700 million has been diverted from the rest of the community to dairying in the past ten years. Presumably, he is basing this figure on the earlier \$74 million which, as we have seen, is quite a false figure.

He makes no attempt to support the dogmatic statement about "a policy which is so patently opposed to the interests of the nation and so clearly fruitless in effecting the slightest improvement in the status and efficiency of the dairy industry."

We have a typical example of unsupported innuendo in the second paragraph in the sentence "towns in such districts are highly dependent upon the dairy industry or can be convinced that they are so dependent."

In the third paragraph, he says that "it is not uncommon, moreover, in such communities to find the mass media — local press, radio and television facilities — controlled by dairying interests." We do not think this is true and, if it is true in certain areas, we do not think any evidence could be produced to show that management are restricted in their presentation of programmes or points of view. Anyway he is making these charges and should be backing them up.

In the second column on the same page, he says that "during the recent controversy over margarine quotas, dairy industry spokesmen conveyed the un-

mistakable impression that they regarded Government policy as essentially something for the dairy industry itself to determine." We do not recall our spokesmen or any A.D.I.C. leaders ever suggesting this.

At the foot of the page, he talks about the "derisive laughter" which our claims deserve. As he makes no attempt to repudiate these claims, we fail to see how he can say they deserve "derisive laughter."

Page 200 — makes some odd reference to \$174 million, which has now increased by \$100 million over the last few pages. On the second paragraph: his remarks first of all imply that Australia's economy as a whole is not rational and, if this is his argument, he should be attacking Australia's economic structure rather than singling out that of the dairy industry.

More seriously, he is claiming further on that the dairy industry claims special privileges because of its past services to the country. We have never done this, all our claims rest on our present and continuing value to the economy. This is a serious one, as he refers to it at some length.

He says that \$500 million (where does this figure come from?) which has been paid during the past 18 years, has not in fact achieved anything worthwhile.

Next he talks of the poly-unsaturated fats argument as though the issue has already been settled.

In the second column, he talks about Australia being involved and becoming an accessory "to certain attempted expedients in international commodity policy which are not in its best interest." The reader is entitled to ask — such as?

In talking about the fact that there are clear signs that major adjustments will be called for if Britain enters the Common Market, he makes no reference to the fact that our export development policy and the new Stabilisation plan are making many provisions. In the next paragraph, he says "these developments have not yet brought about any major changes in Australia's dairy policy." We do not think this is justified.

On page 201, he says "not only has a subsidy proved ineffectual as a means of improving efficiency of production," without supporting his claim.

At the top of page 202, he talks about a further five year programme **known to be quite futile and unsatisfactory.** By whom?

The end of the second paragraph in talking about the processed milk bounty, he refers to its being introduced in order to compensate processors for the higher prices they are forced to pay to attract milk supplies as a result of the subsidy on butter and cheese. We understood this bounty was to enable milk processors to compete on overseas markets against similarly subsidised products from other countries.

In referring to future plans under the Stabilisation Scheme, he seems to be "knocking a hypothesis."

The bottom of page 202, he makes no reference to the overall lifts that there have been in quotas since their introduction in 1940.

On page 203, he compares the lower proportionate price of margarine with butter in countries like the United States and Europe. He ignores the fact that butter is considerably cheaper here and this is one of the reasons why the margarine price is closer to that of butter than it is in these other countries.

In the second column on page 203, he makes the extraordinary assertion that the Agricultural Council is made up "too exclusively representative of sectional interests" merely because it consists of Commonwealth and State Ministers of Agriculture.

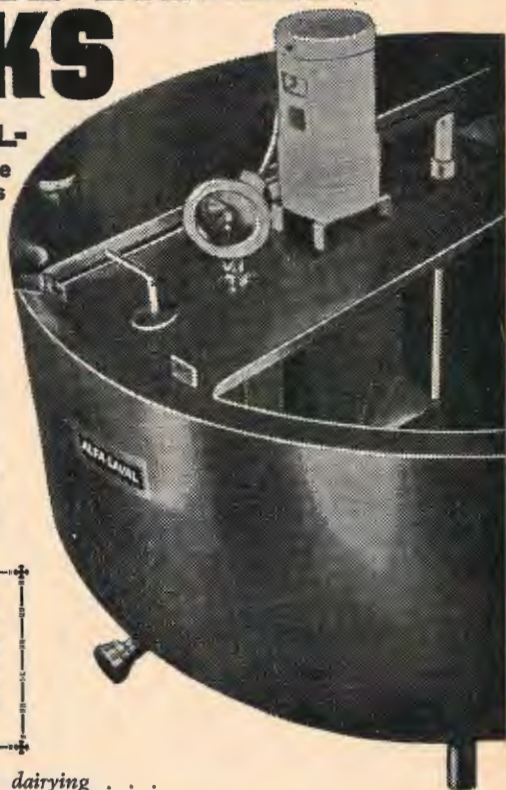
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- The tank is mounted on stainless steel pipe legs with adjustable feet and is fitted with hinged, self-supporting, interchangeable, removeable covers for easy access.
- Highly polished walls, sloping floor, and 2 in. outlet pipe enables rapid draining, efficient cleaning and minimises milkstone formation.
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A little further down, he accuses the dairy industry of charging consumers "substantially more than overseas buyers" without referring to the fact that this is common practice in other countries, except New Zealand and the United Kingdom.

On page 204, he reiterates the tired old arguments about the growth of the oilseed industry — omitting to mention that the oilseed industry, itself, has never expressed any concern whatsoever about these so-called inhibitions.

Further down, the sentence "protection of one Australian industry (and by no means an efficient one) against competition from another local industry is a vastly different matter." Thus, in one sentence he has made unfounded allegations about our efficiency and again reiterated the false argument mentioned above.

At the foot of page 205 and over to page 206, he talks of a "dangerous delay in facing up to adjustments called for by changing market prospects overseas" — without saying that these factors are to be looked at within the next year.

Further down, he makes reference to "dumping Australia's exports on world markets" and we believe the term "dumping" is a technically economic one not correctly used here.

The third paragraph on page 206 carries the usual negative harangue without saying what is wrong with a plan which contains all the elements in the new Stabilisation plan. What, in other words, would he suggest?

CONCLUSIONS

These are merely the major points that have occurred to us in reading through the Bulletin. Admittedly, the writer makes good points, but it is obvious that the whole account is biased, and leaves the reader with the following impressions:—

1. The consumer is paying over \$70 million to the industry every year (later the writer improves this figure to \$173 million by some economic sleight of hand).
2. Hardly any dairy farmers are making a living at all.
3. Because of low incomes, the whole industry is inefficient, and has not improved its efficiency one iota over the last ten years.
4. We are completely oblivious of the implications of Britain's entry into the Common Market and have no plans in mind for meeting this situation either production-wise or by diversifying our markets.
5. Subsidy has achieved absolutely nothing.
6. The edible oilseed industry is being persecuted because the Agricultural Council consists of a lot of selfish, narrow-minded ogres who refuse to face facts.

* * * * *

THE AUSTRALIAN DAIRY INDUSTRY

Over the past few months critics of the dairy industry have skimmed the cream from an account of its performance and value to the economy and have presented a gloomy picture of low income farms, declining sales, and subsidies for which no return is apparent.

In point of fact, as this account will show, any objective assessment of Australia's dairy industry should show—

- Over the past decade dairying has done probably more than any other industry to improve its efficiency, and has implemented programmes designed to make the results of scientific and technical research available to its farmers and manufacturers.
- Its products sell better in Australia than do those of its sister industries in other countries.
- These products are available at lower prices.
- It has made as much progress as can be reasonably expected in diversifying its markets overseas, and it has made sustained efforts to expand its home market by self-financed and associated research.

In an age of changing technologies and new discoveries people are still chiefly concerned with basic influences and products which play a major part in their daily lives. Milk and milk products certainly come under this category for milk itself is featured in the diets of new babies, growing children and teenagers, and has for generations played a major part in just about everyone's diet. Little wonder then that people have a built-in reaction to dairy products and to the industry which produces them.

Perhaps this is the reason why Australia's dairy industry has constantly featured in the news ever since the days of Federation and why recent public debates on the matter of the Australian dairy industry and its products have generated so much white heat.

What are the true facts behind the deluge of words that have been said and written about the dairy industry? The President of the National Dairy Council in the United States, Mr. M. Hult, once said that the operations of the dairy industry in any country were extremely complex, and that anyone seeking to understand its ramifications would soon find that they had undertaken a formidable task. An appreciation of the significance of any dairy industry, including Australia's, is therefore no easy matter and any writer could be accused of oversimplification in attempting to present a clear picture in a reasonably concise form.

EFFICIENCY

Is the Australian dairy industry efficient? Many people have said not, without bothering to substantiate their belief with hard facts. At best they have produced arguments which show only one aspect of the multi-sided dairy picture.

There are many sound criteria by which efficiency can be judged, one of which is output per unit.

The basic unit of production in the dairy industry is the cow, which over the years has constantly increased its average annual rate of production. For instance, in the financial year 1956/57 the average annual rate of production was 396 gallons per year, by 1965/66 this had increased to 480 gallons per year.

This increase has been made possible by improved farming techniques and production methods involved through the industry's own research programme, more of which will be said later.

On the question of output per cow, it is a fact that, on paper, many dairy countries can boast a higher figure and Australian dairy industry critics have often been quick to point this out. However, the unit of labour to maintain dairy cattle in Australia is considerably lower than that in most countries, particularly those in the northern hemisphere. It is not much use the cow producing more milk if it takes more man-hours to make this possible.

Whilst the number of farms has decreased over the last ten years, milk production itself has climbed to over 1,520 million gallons in 1964/65 and 1,560 million gallons in the year 1965/66. It is anticipated that the year 1966/67 will show a greater increase. Thus a constantly **decreasing** number of farms is producing a constantly **increasing** amount of milk.

A look at the manufacturing side of the industry reveals a similar situation. The production of butter, cheese and preserved milk products is being concentrated in fewer factories. Smaller organisations are being amalgamated into bigger concerns with a resulting increase in the efficiency of manufacturing and marketing techniques. The number of dairy factories has decreased from 361 in 1960/61 to 344 in 1964/65, and the past year has seen even more company amalgamations, particularly in Victoria.

The value of output from this smaller number of factories has increased substantially over the past five years. Value of output in 1960/61 amounted to \$268 million from 361 factories. The value of output in 1964/65 was \$332 million from 344 factories.

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It is obvious therefore that whilst the dairy industry has in common with all other industries, marginal units in both its farming and manufacturing areas, these are being phased out and the overall efficiency of the industry is markedly improving. Many critics have pointed to the state of affairs in marginal farms and have unfairly used this as a basis of criticism of the entire industry.

Judged by other criteria, Australian dairying can hold its head high and rank itself amongst Australia's efficient operators. Perhaps the ultimate test of efficiency is an industry's ability to market a good quality product at a reasonable price to the consumer. Butter is the dairy man's product and thereby can be regarded as a good yardstick for this test.

Between 1956 and 1966 the price of butter to the consumer increased by 11.6%. During the same period the Consumer Price Index was estimated to have risen by 23.9% and the Basic Wage by 32.5%.

Thus the real price of butter to the consumer has shown a marked decline in the past ten years, a fact which is often overlooked when circumstances compel the industry to increase the price fractionally.

Certainly no-one should doubt that this is an efficient performance. However the question remains — is the price of butter itself reasonable?

The fact remains that the price of butter in Australia is lower than that in any other country in the world, with the exception of the United Kingdom and New Zealand.

In the case of New Zealand, the extremely favourable geographic conditions makes the marketing of low priced butter a feasible proposition. In the case of the United Kingdom, low prices prevail because world suppliers are prepared to sell at below cost of production to hold their place in the only worthwhile world market. The following table of retail prices of butter in various countries indicates how well off the Australian consumer really is. The price itself is low and the deal to the Australian consumer is accentuated when we compare the number of minutes one has to work to earn a pound of butter.

TABLE I
Comparative Butter Prices

	Retail Price of Butter (lb.)	Minutes Worked to Earn lb. Butter
Switzerland	108	72
Belgium	89	69
France	83	57
Luxemburg	78	29
Federal Germany	78	53
Finland	71	46
Sweden	63	26
Norway	60	34
Austria	59	66
Ireland	59	N.A.
Netherlands	55	44
Denmark	53	28
Australia	49	24
*United Kingdom	46	30
New Zealand	35	N.A.

†62.6

† Average Consumer Price (United Kingdom excepted).

* Low price caused by imports subsidised by countries of origin.
N.A. Figures not available.

THE QUESTION OF SUBSIDIES

For years economists and "objective outsiders" have looked askance at the annual subsidy which is paid to the Australian dairy industry. This subsidy or bounty currently amounts to \$27 million a year, on top of which should be added the \$0.8 million bounty paid to processed milk manufacturers to enable their products to compete on export markets against products from other countries subsidised much more heavily. It is worth mentioning here that critics have added to this subsidy the amount received by the producer because of the prevalence of a home price in excess of export parity. This is not a legitimate economic argument. If butter and cheese were sold in Australia at export parity prices, consumption would increase which in turn would mean less butter available on export markets. This in turn would mean a higher export price. In any case the so-called "world parity price" is the result of subsidies and dumping policies implemented by other countries. A true "world parity price" would surely be an average price paid by consumers around the world.

On this basis a glance at Table 1 shows that the average price paid by consumers in all these countries (excluding the United Kingdom but including the low New Zealand price) amounts to 62.6 cents (Australian) per pound.

The dairy industry subsidy, which was recently described by Mr. C. F. Adgermann as "sound investment for the Government", enables the dairy industry to compete on world markets and maintain an accelerating rate of export income earning capacity. Cut the subsidy and amongst other things this export income earning capacity would straight away be diminished. It adds up therefore to the subsidy being a business proposition. The community pays it to the dairy industry and in return expects, and receives, value in excess of its investment.

It should also be remembered that the dairy industry competes against those of other countries, practically all of which receive much greater Government assistance.

For instance, in 1965/66 the Canadian dairy industry subsidy amounted to \$80 million. This was increased to \$120 million in the current financial year. At the same time the wholesale price of butter in Canada was 436/- sterling per cwt.

The United States is paying a subsidy of \$315 million to its dairy industry and butter sells at 535/- sterling per cwt.

The Common Market countries have subsidies amounting to \$650 million and home prices range up to 706/- sterling per cwt. Thus these communities are paying both more in subsidies and in product prices.

Perhaps this explains why, in spite of critical remarks about the industry itself, Australians still consume large amounts of the dairy industry's products. In terms of whole milk equivalent Australians consume 1,100 lb. per head per year compared with America's 800 lb. per head and European countries 600 lb. per head.

STABILISATION PLAN

The knowledge of these background facts is essential if the new Stabilisation Bill recently passed by the Government is to be properly understood. The industry asked for, and received the continuation of its annual subsidy, not to "prop up worm eaten buildings" or to "keep the inefficient in business" but to carry on a programme which has resulted in dramatic increases in efficiency over the past five years. However, mindful of the problems of the marginal farmer and other uneconomic units in the industry, the industry also requested that funds be made available to assist small farms to improve their efficiency and productivity, or, where this is not possible, to allow the farmer to move out of the industry without personal financial distress. The Government has also expressed its intention of giving further assistance by helping those leaving the industry to re-orientate. The new Stabilisation plan is in effect a signal for the industry to carry on helping itself and to implement many of the major recommendations contained in the Report of the Dairy Industry Committee of Enquiry published in 1960.

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MARKETING

The past decade has seen remarkable changes in the marketing outlook of the dairy industry. Up until 1958 there was little co-ordinated effort to sell dairy products in Australia. The decline in the per capita consumption of butter and the relatively low per capita consumption of cheese awakened the industry to the need for some form of national sales promotion.

Under the Research and Sales Promotion Act 1958, a statutory levy was implemented. Since then producers have contributed to a national research and promotion programme implemented and administered by the Australian Dairy Produce Board.

The Research programme is subsidised on a dollar for dollar basis by the Commonwealth Government and embraces many forms of dairy farm, dairy manufacturing and market research. Currently the Board finances, wholly or partly, over 100 projects which are carried out by various bodies around the Commonwealth. These include State Universities, Agricultural Colleges and the C.S.I.R.O. The research projects have resulted in the increased production and more efficient manufacturing techniques discussed earlier.

However, there is little doubt that all sections of the industry are becoming increasingly aware of the need for vigorous marketing — an awareness which is reflected in the changing pattern of resolutions considered by State producer organisations at their national conferences. More resolutions on the need for more vigorous promotion and more funds to be made available for this to be done are appearing as time goes by.

Furthermore producer organisations recently approved a 0.75 cents per pound of table quality butter to be spent by manufacturers and distributors on merchandising and point of sale promotion. Last year the industry responded to a plea from the Australian Dairy Industry Council to contribute to a special Fighting Fund to counter the heavy barrage of anti-butter publicity generated by Marrickville Holdings Ltd. in their table margarine quota campaign.

OVERSEAS MARKETS

In its efforts to diversify its overseas markets the industry has also shown commendable initiative. Up until 1962 the great bulk of Australia's dairy exports was to the United Kingdom. The importance of the United Kingdom as a butter importer has not decreased significantly since 1962 when she took 69,000 tons of the 77,000 tons exportable surplus. In 1966/67 her market absorbed 74,000 tons of the exportable surplus of 100,000 tons and sales in 1968 will most likely be in the same proportion.

However a vigorous campaign to sell Australian butter to Japan is yielding results and the significance of the Japanese market is rapidly increasing.

The pattern of cheese exports has also changed dramatically since 1962. In 1962 the United Kingdom took 17,000 tons of the 22,000 tons available for export, whilst in 1966/67 she absorbed only 4,000 tons of the 21,000 tons surplus. In the same period exports to Japan had grown from 700 tons to 8,000 tons. It is envisaged that in the coming financial year, United Kingdom shipments will increase but will still be considerably lower than the 1962 figures, and about on a level with even more increased Japanese purchases.

The industry's joint ventures in South East Asia are now well established as profitable operations and useful outlets for butteroil and skim milk powder. To date the plants in Bangkok, Singapore and Malaysia have used raw materials to the value of \$10 million and the output of the companies is worth \$13 million annually based on current rate of throughput.

ECONOMICS OF FEEDING MOLASSES

What are the economics of adding molasses to milled hay and which is the best way of doing it.

These undoubtedly would be the first questions asked by any farmer who was considering adding molasses to his stock feed.

As we have already mentioned the Wetmore feed mill is the only one of its type which will feed liquids under pressure directly into the mill chamber.

This gives an extremely evenly mixed sample, because the liquid hits the feed while it is in a dispersed state.

A small gear pump on the mill forces the liquid, in this case molasses, down through a pipe into the mill chamber and on to the blades.

We recommend that a mixture of three parts water to one part of molasses be used to mix with the feed. With this concentration, the mixture will remain liquid in the container, pipes or pump for several days.

The amount of molasses being added to the feed is controlled by a hand-operated valve, which is mounted on the side of the feed in chute.

When the hay is not going into the mill the operator merely flicks the valve off with his hand.

It has been calculated that one gallon of molasses is sufficient to treat between 30 and 50 bales of hay.

With the present price of molasses, the cost for this number of bales would work out at about 70 cents to \$1.

Understandably hay is not the only material that can be treated with molasses before it is fed to stock.

There are three basic models of the Wetmore feed mill. They are the large "Clipper", the "Glutton" and a smaller model known as the "Dilly."

The mills are available in various forms right up to a mixer unit on wheels.

The main difference with the Wetmore mills compared with other hammer-mills is that they combine chaff cutter as well as hammermill principles.

This allows green, wet or dry feed to be processed in the mill.

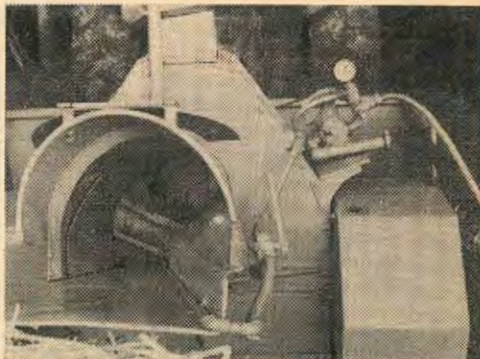
The mills are also available with concentrate hoppers, designed to allow antibiotics and minerals to be mixed with the hay or feed to any formula and consistency.

The mills are extremely well built and incorporate a heavy duty gear box, which completely does away with belt drives in the primary drive unit.

The mill also incorporates a shock absorber type clutch, which eliminates pulsations. This is a big advantage when using early model single cylinder tractors.

Primary Implements guarantee to replace any damaged part of a tractor gear box should this overload mechanism fail.

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A device capable of lifting and supporting the full weight of a disabled cow is now in use in South Australia. The device is known as a cattle hoist. Naraboorte farmer neighbours, Messrs. R. Clonan and R. A. Lawson, unaware that such a device had already been patented in the U.K., devised one of their own.



They were faced with the problem of lifting cattle which were "down" and unable to get to their feet of their own accord, such as cows with calving paralysis, milk fever, etc.

The hoist clamps on the hip pins of the cows and can be operated by a jib crane on a tractor.

The animal can be suspended completely above the ground if necessary. Messrs. Lawson and Clonan believe the hoist can save the lives of cattle.

It has been designed to swivel 360 degrees and can be used to move an animal short distances. It has a quick release mechanism. An improved

model of the original conception is now being made in South Australia for the first time by Tubebuilt Pty. Ltd.

DAIRY PRODUCE CONSUMPTION RISES

Cheese now over 8 lb. per head

A 10-year survey of foodstuffs consumption in Australia just issued by the Commonwealth Bureau of Census and Statistics shows a significant rise in the consumption of dairy products other than butter during this period.

The most spectacular increase is in the consumption of skim milk powder (up 230%) with cheese next (51% increase) to reach the gratifying total of 8 lbs. per head.

The consumption of butter in Australia, as in the rest of the world, has fallen, from 28.1 lbs. to 21.8 lbs.

Consumption figures for single commodities are, however, not completely revealing. It is of interest and value to note the relative changes; to see, for example, the extent to which one food has replaced another (e.g. cheese and meat), or the parallel changes in complementary foods (e.g. bread and butter). For this reason we publish, on the following pages, tables showing the consumption of all foodstuffs.

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APPARENT CONSUMPTION OF CERTAIN FOODSTUFFS : AUSTRALIA

(Per head per year)

COMMODITY		1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66 P
(1) MILK AND MILK PRODUCTS											
Fluid whole milk	Gallons	28.5	28.2	28.2	28.6	28.7	28.5	27.8	28.2	29.1	28.5
Condensed, concentrated and evaporated milk—											
Full cream: Sweetened	Lb.	2.6	3.0	2.2	2.7	2.4	2.5	2.0	2.4	2.2	2.4
Unsweetened	"	6.2	6.5	6.4	6.6	(a)6.5	(a)6.7	(a)6.3	(a)6.6	(a)6.8	(a)6.9
Skim	"	1.1	1.7	1.1	1.0	1.1	1.2	1.8	2.4	2.0	1.9
Powdered milk: Full cream	"	2.2	2.9	2.4	2.7	2.5	2.7	2.5	2.4	2.4	2.0
Skim	"	2.3	2.1	2.9	3.6	4.4	(b)6.0	(b)5.7	(b)7.0	(b)6.6	(b)7.6
Infants' and invalids' food	"	2.0	2.3	2.2	2.9	2.5	2.4	2.6	2.8	3.1	3.2
Cheese	"	5.3	6.8	5.2	6.3	6.4	6.6	6.7	7.3	7.5	8.0
Total milk solids (fat and non-fat)	(c)	48.2	49.6	48.4	50.1	51.4	53.2	53.4	54.3	55.5	54.9
(2) MEAT											
Carcass meat: Beef and veal	Lb.	128.9	125.1	117.6	98.4	85.4	93.4	100.5	104.8	100.2	93.2
Mutton	"	46.8	50.7	55.1	63.8	63.2	55.3	51.7	48.4	46.3	46.3
Lamb	"	27.7	28.4	31.9	39.0	38.2	42.8	42.1	41.7	39.3	37.0
Pigmeat	"	8.6	10.8	10.6	10.3	11.4	13.6	12.0	11.5	11.9	13.5
Total carcass meat	"	212.0	215.0	215.2	211.5	198.2	205.1	206.3	206.4	197.8	190.0
Offal	"	10.4	11.8	12.1	11.6	10.9	11.6	12.5	12.9	12.4	11.4
Canned meat (canned weight)	"	3.1	4.5	4.7	4.1	4.2	3.8	4.3	4.3	4.6	4.6
Bacon and ham (cured carcass weight)	"	6.8	7.0	7.2	7.1	6.8	7.0	7.4	7.3	7.6	7.6
Total meat (carcass equivalent weight)		237.4	244.6	245.0	238.6	224.2	232.3	235.3	235.7	226.8	217.8
(3) FISH											
Fresh and frozen (edible weight)											
Fish: Australian	"	3.3	3.1	3.1	3.2	3.1	3.1	3.2	3.3	3.2	3.3
Imported	"	1.8	2.2	2.2	3.2	3.0	2.7	2.7	3.1	3.0	3.8
Crustaceans and molluscs	"	0.9	0.8	0.9	1.0	1.2	1.0	1.4	1.2	1.5	1.5
Cured (incl. salted: cured weight)	"	0.5	1.3	0.8	1.1	1.1	0.9	1.0	1.0	0.7	0.9
Canned (canned weight): Australian	"	0.8	0.7	0.8	0.8	0.7	0.8	0.9	0.8	1.0	1.1
Imported	"	1.7	1.8	1.7	2.0	2.6	2.0	1.9	2.3	2.4	2.4
Total fish	"	9.0	9.9	9.5	11.3	11.7	10.5	11.1	11.7	11.8	13.0

(a) Includes ice-cream mixes

(b) Includes buttermilk and mixed skim and buttermilk

(c) Includes an allowance for estimated cream consumption.

APPARENT CONSUMPTION OF CERTAIN FOODSTUFFS : AUSTRALIA
(Per head per year)

COMMODITY		1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66 P
(4) EGGS AND EGG PRODUCTS (a)											
Eggs in shell	Lb.	21.5	21.0	21.0	21.6	24.4	24.7	24.9	25.0	25.2	25.6
Number of eggs	No.	197	192	192	198	195	198	199	200	202	205
Egg pulp (b)	Lb.	1.4	1.2	1.3	1.5	1.8	1.6	1.3	1.6	1.5	1.5
Equivalent number of eggs	No.	13	11	12	14	14	13	10	13	12	12
Total eggs and egg products (b) (c)	Lb.	23.0	22.2	22.4	23.2	26.3	26.4	26.3	26.7	26.9	27.3
Equivalent number of eggs (c)	No.	211	203	205	213	210	211	210	214	216	218
(5) OILS AND FATS											
Butter	Lb.	28.1	27.8	25.9	26.2	25.1	24.0	23.8	23.4	22.6	21.8
Margarine: Table (d)	"	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4.5	4.6
Other (e)	"	4.7	4.8	5.1	5.7	5.8	6.0	6.3	6.6	6.2	5.9
Total Oils and fats (fat content) (f)	"	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	32.3	31.5
(6) SUGAR AND SYRUPS											
Sugar (g)	"	112.3	110.4	112.0	110.4	107.4	111.7	109.1	109.2	110.9	111.3
Syrups, honey and glucose: Sugar content	"	5.6	4.8	5.2	6.4	5.6	5.2	4.8	6.3	7.4	7.0
Total sugar and syrups (sugar content)	"	117.9	115.2	117.2	116.8	113.0	116.9	113.9	115.5	118.3	118.3
(7) PULSE AND NUTS											
Dried pulse	"	3.4	2.2	2.2	2.1	2.7	2.9	3.3	3.0	3.3	3.6
Peanuts (kernel equivalent)	"	0.7	2.4	1.9	2.4	2.1	2.9	2.6	1.9	1.9	1.8
Tree nuts (kernel equivalent)	"	1.4	1.6	1.6	1.5	1.8	1.9	2.0	2.0	2.1	2.0
Cocoa (raw beans equivalent)	"	2.9	2.7	2.7	3.1	3.2	3.2	3.5	2.8	4.5	3.5
Total pulse and nuts (edible weight)	"	8.4	8.9	8.4	9.1	9.8	10.9	11.4	9.7	11.8	10.9
(8) VEGETABLES (h)											
Root and bulb vegetables	"	35.1	38.0	32.3	32.5	30.4	32.9	33.0	32.5	35.0	35.3
Potatoes, white	"	107.8	118.6	115.3	115.4	86.4	97.1	123.5	103.4	92.8	112.6
Tomatoes	"	32.3	26.0	27.6	24.5	29.9	29.6	27.6	29.2	31.4	31.1
Leafy and green vegetables	"	40.7	37.3	40.1	39.8	39.1	42.9	41.5	43.2	46.3	44.5
Other vegetables (i)	"	42.3	43.0	41.9	37.2	38.5	37.4	40.1	38.3	38.9	39.4
Total all vegetables	"	258.2	262.9	257.2	249.4	224.3	239.9	265.6	246.6	24.4	262.8

(a) For 1959/60 and earlier years the average weight of an egg was taken as 1.75 oz.; for 1960/61 and subsequent years the average weight has been taken as 2 oz. (b) In terms of eggs in shell. (c) Includes an allowance for powdered eggs. (d) Recorded as such. No allowance is made for table margarine used for other than "table" purposes. (e) Recorded as margarine other than table. No allowance is made for other margarine used for "table" purposes. (f) Includes an estimated allowance for vegetable oils and other fats. (g) In terms of refined sugar; includes sugar content of manufactured products. (h) Includes fresh equivalent of manufactured products. (i) Includes sweet potatoes.

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IT
BUT



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APPARENT CONSUMPTION OF CERTAIN FOODSTUFFS : AUSTRALIA

(Per head per year)

COMMODITY	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66 P	
(9) FRUIT AND FRUIT PRODUCTS											
Citrus fruit (a)	Lb.	37.6	35.0	33.7	41.1	35.5	43.3	47.8	42.5	51.1	42.0
Other fresh fruit	"	71.1	81.0	83.0	86.0	86.1	87.1	84.5	92.3	78.3	88.6
Jams, conserves, etc.	"	9.7	7.9	8.2	8.6	8.4	8.1	8.2	8.0	7.8	7.5
Dried fruit	"	5.2	7.1	5.6	6.8	6.4	6.2	7.4	5.2	7.3	7.3
Canned fruit	"	13.4	14.7	12.6	15.3	17.5	16.5	20.5	18.7	19.7	20.8
Total fruit and fruit products (fresh fruit equivalent)	"	150.9	167.4	158.5	176.6	173.0	179.1	190.3	182.2	187.0	188.8
(10) GRAIN PRODUCTS											
Flour (incl. wheatmeal for baking and sharps)	"	186.0	181.3	177.3	177.3	168.6	169.6	166.8	172.7	169.9	172.3
Breakfast foods (incl. rice products)	"	14.5	13.3	12.7	13.3	14.2	14.3	13.8	14.1	14.4	14.9
Rice, milled (excl. breakfast foods)	"	n.a.	n.a.	n.a.	3.0	3.4	4.0	3.8	4.2	4.3	4.9
Pearl barley	"	0.5	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3
Sago and tapioca	"	0.3	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Total grain products (b)	"	n.a.	n.a.	n.a.	194.8	187.5	188.4	185.0	191.5	189.1	192.6
(11) BEVERAGES											
Tea	"	6.2	6.0	5.8	6.0	5.9	5.8	5.8	5.7	5.8	5.6
Coffee (c)	"	1.2	1.2	1.6	1.7	1.7	2.0	2.2	2.2	2.4	2.2
Beer	Gallons	22.9	23.0	22.2	22.6	22.6	22.5	22.8	23.5	24.3	24.3
Wine	"	1.1	1.1	1.2	1.2	1.1	1.1	1.2	1.2	1.2	1.3
Spirits	Proof Galls.	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.3

(a) Includes fresh equivalent of manufactured products

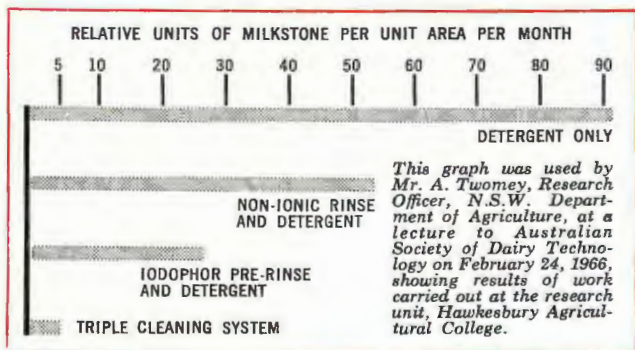
(b) Includes an allowance for cornflour for years prior to 1961/62

(c) Coffee and coffee products in terms of processed whole or ground pure coffee.

Research Proves Triple Cleaning System

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

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THE SOUTH AUSTRALIAN

DAIRYMEN'S . . .

Journal

Official Publication of the



Published Bi-monthly

Vol. 7, No. 2

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ROSLYN VALE MISTY MORN 2nd H.C., E.R.O.M.

Photographed at 17 years of age, at the commencement of her 14th lactation

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DECLINE IN MILK OUTPUT

S.A.D.A. REQUESTS—AND GETS—4 CENT INCREASE IN CITY MILK PRICE

We do not need the evidence of the Bureau of Meteorology to confirm that the dairying districts are sharing in drought conditions that are possibly the worst in the history of the State. The appearance of the grazing paddocks, the absence of the hay harvest, and the falling production of the milking cows reveal far more than rainfall figures, however low they may be.

Going back to 1959 drought for a parallel we find that the symptoms of drought conditions first showed up in the production figures for June of that year (a month later than in 1967). Total output from licensed producers had been well above that for the same period in the previous year up to and during May of 1969 (in April production had been 23% above that of April 1958) but production declined steeply in June to about 2% below that of June 1958, and did not recover until January of the following year (1960).

However, during the whole of the period in which production was depressed, the output in any one month did not at any time fall by more than 7% below that of the corresponding month of the previous year.

In the present season production in each month, through June, July, August and September has been at least 10% below that of the same month in 1966, and total output for the September quarter is down by 12.3%.

It is quite impossible to predict the outcome of the present conditions in terms of production but it is difficult to avoid the conclusion that in the absence of an early and sustained opening, autumn production could be down by 30%.

Dairyfarmers had already begun to cull heavily by the end of June, and for only the second time in 20 years, (the other occasion being in 1959) the number of milking cows at the end of the financial year was below that of the previous year. Reports now coming in indicate that the rate of culling is accelerating as farmers weigh fodder costs against productivity.

The result in money terms so far is that since May, the first month in which production was below that of last year, the income of licensed producers in the Adelaide milk supply area has already, in 6 months, been reduced by well over \$½ million, and the position must rapidly worsen, as any rain now will, except on irrigated pastures, do no more than provide a doubtful green picking and may do more harm than good by spoiling dry paddock feed and perhaps prematurely germinating the now much-depleted clover seed.

The Association consequently made to the Milk Board an urgent request for an immediate increase in the price to the producer of 4 cents per gallon for city milk, not only because of the increased cost of feeding, as shown above, but more importantly, so that the producer would be able to produce to his bank manager

or whomever else he approaches for finance some indication that money will be forthcoming to service the accommodation provided.

We emphasised to the Board that this request was based solely on conditions brought about by the drought, and that we will agree to a review of the price as soon as there is any improvement in seasonal conditions.

Nevertheless, even with a rise of 4 cents, Adelaide milk, which now shares with Brisbane the lowest price in Australia, would still be the second cheapest in Australia.

In making this request, the Association pointed out to the Board that licensed producers in the Adelaide milk supply area had, in recent years, by improved techniques, increased productivity per cow and per farm to a level that we believed was unmatched in any dairying region of similar characteristics and extent in Australia, and in fact we queried whether any industry of comparable magnitude, whether primary or secondary, could equal the increase of 75 per cent in 7 years that the average licensed producer had achieved. Because of this the producers had, during a long period of steadily rising prices, been able to spread their increasing costs over increased output, and so maintained their cost per gallon at a relatively stable figure. Despite the high level of productivity that had so far been attained, no sign of diminution in the rate of increase was evident (the increase in average productivity per farm in 1966/67 was 5½ per cent) until the late autumn this year, when the absence of opening rains over almost the whole of the milk-producing area brought about a reduction in output of an extent unprecedented during the Board's 20 years of operation. Despite heavy expenditure on the purchase of fodder and the rapid run-down of reserve stocks, producers had been unable to maintain the productivity of their milking cows, and output had slumped alarmingly.

It was only on account of the need at all costs to obtain fodder and finance to pay for it that the request for an increased price was made, as otherwise the Association would have been prepared, as always, to wait for the final results of the Board's annual production cost survey, which was generally completed in May.

The Association drew the Board's attention to the fact that during the last 7 years the retail price of milk had risen by only 10.7% compared with an average increase in food prices of 16.2 per cent as shown by the Consumer Price Index, and a general increase in wage levels in South Australia of 34.4 per cent.

As the result, the Board granted the 4 cent increase requested, which becomes effective early in December, with the whole of the increase going to the producer, thus making it the largest single increase ever received.

ROSLYN VALE MISTY MORN 2nd

by NYROCA PEGGY'S DESIGN
from ROSLYN VALE MISTY MORN

has completed her 14th lactation (498 pounds) to achieve 7,038 pounds butterfat in her lifetime. Long productive life is a family characteristic. Her dam lived to the age of 20 years 10 months; her sisters are now 15 years and 12 years respectively, and she has daughters up to 13½ years old. Overall, the fourteen oldest cows in the Roslyn Vale herd average 13 years of age, and all are descended from MISTY MORN 2nd's grand-dam.

GOVERNMENT'S GESTURE ON FODDER

Probably the most practical form of drought assistance ever given by any Government is the Minister of Lands' offer to "buy the fodder you need and send the bill to us".

This gesture (**and the repayment carries no interest charges**) was made to resolve the problem facing many farmers, particularly dairyfarmers, who are uncertain how much hay to buy, whether they can afford the cost, and where they are going to get the money.

Large quantities of cereal hay are available at the moment, but much of it is still in standing crop **and will only be cut against orders**. By the time the farmer has answered all his problems and decided how much hay he needs it is no longer available, as the crop has been left to reap for grain.

Even if, at the time of publication of this Journal, cereal hay is no longer available, lucerne hay will be forthcoming from the irrigated areas, and a long-sighted attitude on the part of the farmer to match the Government's initiative could arrest the alarming down-turn in milk production and enable the already heavily-culled herds to be carried through without further depletion to the break of the season.

MILK SUPPLY ACT AMENDED

The first major amendments since the legislation was first proclaimed in 1946 have now been made to the Metropolitan Milk Supply Act.

The amendments may be classed under four main headings, the first of which is concerned with transferring the licencing of retail milk vendors from the County Board to the Metropolitan Milk Board. This is a logical move as the dual control with licencing being administered by one Board and zoning by another, has, in the past, placed many obstacles in the way of satisfactory control of the city milk industry, from producer to customer.

The second group is the most important for the producer and strengthens the Board's control over milk and cream which may come from outside the metropolitan supply area. Although the Act prohibits the sale of any milk and cream except that produced on a dairy farm licensed by the Board, there is always the possibility that milk or cream may be brought in from outside regions and sold in the metropolitan area in defiance of the Board, the penalty that would follow a successful prosecution being viewed by the sellers only as a small additional working expense.

The theme of this group of amendments closely follows advice given by the Association's legal adviser, when his opinion was sought concerning the threat of milk and cream being supplied from outside sources. This advice, which was made available to the Milk Board's solicitor stressed the importance of the Board's power to supervise the actual conditions under which milk is produced on the farm and treated at the factories. By the exercise of these powers the Board is able to ensure that the condition and hygiene of premises and equipment, the health of livestock and employees, and the efficiency of the processes employed, are all in accordance with the standards laid down. Because of this continual supervision it is necessary for the Board only to check-test the milk and cream which is marketed.

Where the Board is not able to oversee the conditions under which milk and cream are produced it is essential that much closer inspection be made of the only factor which actually comes within the Board's scope, namely the product itself, and the new legislation gives the Board adequate powers to satisfy itself that such milk and cream complies with the standards laid down, and prohibits the sale of the produce until after the Board has issued a certificate of approval.

It is inevitable that questions will be asked, particularly by any organization wishing to break into the Adelaide milk or cream market, as to whether such strict standards are necessary, and why the routine supervision by a State Department of Agriculture is not sufficient.

The answer to the second question is simple, namely that standards for city milk and cream must always be more strict than for milk and cream for manufacture, but the answer to the first question is more involved. The methylene blue test with which we are all familiar is basically a test of keeping quality, and is one of the least important standards in relation to health.

From the public health point of view freedom from bovine tuberculosis, brucellosis, insecticide residues and antibiotics are far more important. As for the first two, the combined activities of the Milk Board and the Department of Agriculture have raised the Adelaide milk supply area to a position unequalled in Australia, being the only region where certification of dairy produce as being free from t.b. and brucella organisms is possible with absolute certainty, and this is a state of affairs that can continue only with constant supervision and testing of the livestock; testing of the produce alone could never bring about such a high standard. As for antibiotics, although their use is certainly widespread, the fact that surplus milk from the area goes almost entirely to cheese manufacture has brought about a marked degree of awareness of the importance of with-holding antibiotic-contaminated milk from the farm supply, and when in 1961 Dr. Rosanove brought to the notice of the Australian public the dangers of antibiotics in whole milk it was significant that the degree of contamination in Adelaide's milk supply was the lowest in any capital city.

The position is similar with pesticides; certainly they are used, but with a degree of caution that should prevent such an incident as that which occurred at Haytesbury in Victoria, where the contamination was such that the collection of milk from the region was prohibited for a very long time.

A further standard for city milk to which attention is being increasingly drawn is that of radionuclide content (contamination by radio-active "fall-out" such as strontium 90, radioactive iodine and cobalt). This contamination tends to be regional, depending on prevailing winds and other meteorological factors, as shown by the extent of the variation in 1966, when Perth recorded 5 times as much "fall-out" as Hobart. Because of this it is essential that the degree of contamination be kept under continuous review in any region where dairy cattle are kept.

Unless the Board is able to ensure that the standards it sets are observed in all aspects of production and treatment by actual supervision of farm and factory operations, it has a duty to the consuming public to ensure, by complete analysis, that the milk reaching the city complies in all respects with the standards necessary for quality and health.

Until now it has had the power only to analyse the milk when it is offered for sale; it has not been able to prevent such sale until the necessary tests have been completed. Apart from the standards that are imposed to safeguard the public's health there are also standards to protect its pocket, and to ensure that it is getting what it pays for. Although the public gauges milk quality by the "cream line", from a dietary viewpoint the solids-not-fat (s.n.f.) are more important, and also the more difficult to maintain. Because of the high proportion of Channel Island breeds in the Adelaide milk supply area the s.n.f. content of the aggregate intake is not in doubt in city milk in this State, a very different position from that in other regions in Australia, where the maintaining of a satisfactory s.n.f. standard is a continuing problem. But apart from unintentional deviations from standards, there is always the possibility of intentional adulteration for various reasons. We have already seen companies prosecuted for selling cream from interstate sources which was thickened by a prohibited thickening agent, carboxymethylcellulose, the detection of which is very difficult and requires the use of sophisticated analytical apparatus not usually available outside a research laboratory.

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NEW HOLLAND

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The treatment of whole milk for consumption as such is limited to pasteurization, a process which is capable only of destroying the micro-organisms present in milk (and not always all of those!). It is not capable of removing pesticides, antibiotics, or other adulterants, nor will it supply missing s.n.f. or restore to freshness milk that contains preservatives. Therefore the power given to the Board to order milk and cream to be treated at a licensed treatment plant is insufficient by itself, and must be augmented by the right to call for complete testing and to clear milk and cream for sale only when it is shown to be completely satisfactory.

Following these amendments come revisions to the price-fixing powers of the Board, in the first case enabling it to set prices for milk and cream coming from outside the licensed supply area, and in the second case enabling the Board to set maximum and minimum prices, thus giving to the industry the ability to engage in "special-price" promotions where such are considered necessary to increase the sales of certain lines, or to draw attention to new products or variations in packaging and the like.

The final amendment gives the Board power, by itself or in conjunction with other sectors of the industry, to give publicity to milk and cream by way of promotion. The industry in South Australia has been considerably hampered by a general unwillingness to promote the sale of milk and cream, and this power, provided it is wisely and economically used, may go some way towards making up this lack.

AUSTRALIAN CHEESE WEEK

Plans are in preparation for an Australian Cheese Week to be held some time next year.

The Australian Dairy Produce Board's promotion staff is preparing a recommendation which will be further considered at the next meeting of the Australian Cheese Manufacturers' Federation.

The idea was mooted at industry conferences in Sydney in August:

- It is envisaged that appropriate national advertising and promotion could be carried out by the board utilising advertising and public relations techniques.
- In addition to this, manufacturers, distributors and retailers would participate as fully as possible in a campaign designed to draw public attention to the nutritive qualities of cheese, the especial quality of Australian cheese, and the many varieties now manufactured and available in this country.
- A public education programme showing the characteristics of different types of cheese and their general uses is also envisaged.

Meanwhile the board has mailed caterers around Australia on the uses of fancy cheeses. The mailing includes lists of dealers and an offer to provide practical sales aids and promotion material designed to promote Australian cheese and wine parties.

The material offered included a reference chart which sets out the many different ways that Australian cheese and wine can be served together with recipes, types of Australian cheese and wine to use, and how to organise a display appropriate to festive occasions. The folder also includes attractive show cards and ribbons, give-away leaflets for customers. This latest mailing is part of the board's continuing campaign to make cheese an exciting and "with it" product.

Jersey Cows Don't

SIT ON THE FENCE pondering over your **DAIRY PROBLEMS**

Admittedly they appear hard to solve —
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JOCK GORMLIE STEPS DOWN

After a life-time of battling for his fellow dairyfarmers, veteran Jack Gormlie of Pompoota declined to accept nomination for re-appointment as the Association's Vice-President, a position he had held for 28 years and as a Director of the Metropolitan Milk Equalization Committee, on which he had been a dairyfarmers' representative since 1946.

Mr. Gormlie, who continues as a delegate from the River Murray District and a member of the Executive Committee of the Association, was a pioneer of dairyfarmer organization from the beginning of the soldier-settlement project on the Lower Murray Swamps after World War I, and, as a member of the River Murray Dairymen's Association and of the Amalgamated Dairy Council, was active in the formation of the South Australian Dairymen's Association in 1935.

At that time Mr. Gormlie was South Australia's representative on the Australian Dairy Stabilization Committee, better known as the "Paterson Scheme".

As a mark of its gratitude and appreciation the Association presented Mr. Gormlie with a wing-backed easy chair, which was complemented by a matching foot-stool as the gift of his fellow Directors of the Metropolitan Milk Equalization Committee.

The Association also presented a necklace of cultured pearls to Mrs. Gormlie for her forbearance and patience over the years.

HIGH RETURNS FOR E.E.C. FARMERS

Dairy-farmers in the 6 E.E.C. ("Common Market") states will receive from 36½ to 41½ cents per gallon for milk during the 1967/1968 season, compared with 28 cents (equalized) for milk producers in the Adelaide milk supply area.

This bears out the figures published in the previous two issues of this Journal, which showed Australian butter, cheese and milk to be among the cheapest in the world, **despite factor costs which are almost the world's highest.**

It is only by farming on a large scale and by keeping employed labor down to a minimum that the Australian farmer can stay in business at all.

FEEDING IN A DROUGHT

Feeding dairy cattle for production has become increasingly accepted in recent years and adequate feeding is probably responsible for most of the steep increase in productivity per cow, from 500 gallons to 630 gallons, over the last eight years in the Adelaide milk supply area.

We must admit that in many cases there is not much science behind the method of feeding which, from farm to farm, may vary from "a dipper of chaff in the bail", through various fancy mixes to the dairy-farmer's own recipe, to a completely balanced commercial preparation. In a normal year this may not matter very much. The cow is a very tolerant animal and can convert an amazing number of varied substances into the one product we want, milk, and the difference between one diet and another is generally only a matter of economics how much does the feed cost compared with the value of the milk produced.

But this is not a normal year. Feed has been short for half the season, and production has already fallen. The availability of fodder for sale is the lowest for 20 years, and the variety is restricted. **Above all, prices are high; so high in fact that there will be little or no surplus above the price of the fodder from an average cow when fed scientifically.**

Because of this we asked Mr. Gordon Pickhaver, of the Department of Agriculture, to write an article describing **most economical way to feed in a drought.**

Mr. Pickhaver's advice may seem quite revolutionary, but can we afford not to take it? With so small a margin between costs and returns we cannot afford to waste any fodder at all. Yet our own existence as an industry, and the contribution we make to the State's economy, demand that we continue to produce as much milk as possible.

Mr. Pickhaver has pointed the way to achieve both results in a time of crisis.

GETTING THE BEST FROM DAIRY COWS DURING A DROUGHT

FEED SHORTAGES EVERY YEAR

Most dairy production in South Australia is subject to an annual drought.

Summer and Autumn feed shortages occur every year on farms where no irrigation is available to fill this gap. Supplementary feeding in one farm or another is required for most of the year.

Feeding management aims at providing the right type of feed in the right amount for best economic returns.

This article discusses some of the feed requirements of the milking cow, the aim being to get the best use out of the feed available.

WHAT TO LOOK AT

At the outset it is no advantage to moan and grizzle about the price or cost of feed during a drought.

It costs more because it is in short supply and this can't improve until next season.

The thing to do is to calculate your needs, buy in at the best price you can and then use the available feed to best advantage.

Two main factors are involved:

- The actual fate of the food after being eaten;
- The efficiency of conversion of feed into milk.

Dairy Farmers Beat The Drought

Maintaining milk production through the drought is number one priority with many dairy farmers at the moment and we would like to show you one example of how it can be done.

With paddock feed running low dairy farmers are advised to confine their milking herd to a small paddock and feed them there.

And this is exactly what Messrs. D. S. and N. A. Bowman, of Orroroo, are doing and they have found it has paid off.

The Bowmans could be luckier than some—they have 2,500 bales of hay, but they are feeding to get the most out of it.

They have herded their cows into a small paddock and with their Wetmore Grinder Mixer are mixing them a ration of equal parts of hay and barley plus 1½ to 2 p.c. urea.

They are also adding molasses through the mill at the rate of one gallon of molasses to three gallons of water which gives sufficient mixture for 30 to 40 bales of hay.

"This gives us all the protein we need for milk production without any paddock feed whatsoever", the Bowmans said.

"Besides stopping the dust the molasses gives the cows an extra boost also.

"The cows are fed in troughs thus reducing the 20 p.c. loss normally associated with ground feeding.

"Before our first lot of hay ran out we were getting 10 cans of milk a day.

"When we finally had to put the cows out on greenfeed in the paddock our milk production dropped to six cans, but now we have more hay the cows are going back into the small paddock to be fed with the GRINDER MIXER."

Our congratulations go to the Bowmans in their aggressive defiance of the drought. The Grinder Mixer has now converted their enterprise to profitability.

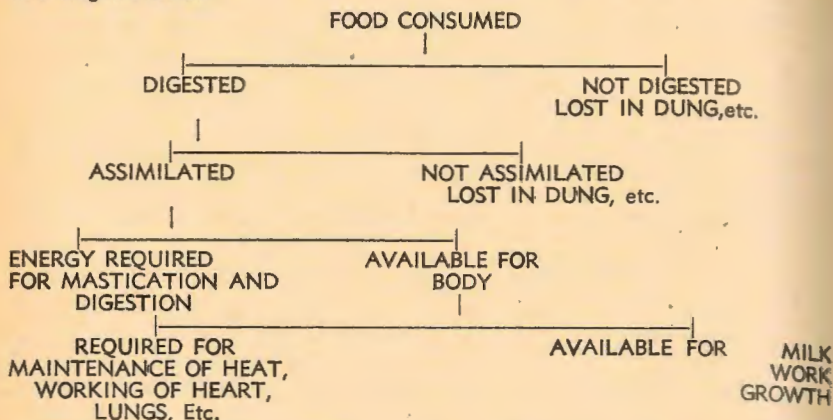
If you have a drought feed problem don't hesitate to call and see us. We would be pleased to discuss it with you and help in any way we can.

We have lots of alternative emergency rations which we would gladly explain to you.

You will find us at our Head Office, 118 Glen Osmond Road, Parkside, or if you would like to go direct to our new Drive-In Show Room, turn right into Davey Street, corner 118 Glen Osmond Road, Parkside, then first turn right. We shall be very pleased to see you.

THE FATE OF FOOD

Only a portion of the food eaten by the cow is available for milk production and a considerable amount may not be available to the cow for use at all; as this diagram shows:



The less food required for maintenance the more available for milk production. Therefore the first thing to do is to **CONFINE MILKING COWS TO A SMALL AREA.**

It has been shown that depending on the availability of food in the paddock, food requirements for the maintenance needs of a grazing cow will be from 25% to 40% above that needed for housed stock.

It is not suggested that you add to costs by building an elaborate feeding area. All that is needed is a small area with some shade and water adjacent to the milking bails, in which are suitable feed troughs to take hay or other fodder.

Remember: the more a cow walks around chewing food the less she has available for milk production.

FOOD FOR MILK

The conversion of food to milk, apart from the nutritional aspects, is directly related to the stage of lactation.

After calving a cow has the maximum available milk secretory tissue for that lactation and full use must be made of this.

For the first three to four months, however, a cow cannot take in enough pasture, hay or silage to fully use her milking capacity.

Here is the place for heavy feeding of a milk-producing concentrate. **Feed the cow to maintenance on hay and a 16% protein concentrate for milk production.**

In the first month of milking the cow has an efficiency of conversion of food to milk of approximately 30%; this falls to about 20% by the end of the fourth month and then gradually to nil when she goes dry.

A survey of many production records from herd testing records show that 50% or more of the total production for a lactation is reached by the end of the fourth month of milking. Heavy feeding of concentrates after the fourth month is seldom economical. Two factors come out here:—

- Feeding concentrates during the first four months of milking can lift milk production economically.
- Efficiency of conversion of food to milk is highest during the first four months of milking.

WHAT TYPE OF FEED TO BUY

It is unlikely that there will be any pasture clover hay available this year. Cereal hay is available; it is high in energy value and provides the necessary bulk to supplement grazing irrigated pasture and early winter oats or pasture growth next year.

Lucerne hay is an excellent feed.

Concentrates will be required for converting into milk, so 16% protein levels are recommended

If a farmer has his own grain, and a mixer and crusher, then buying 50% meat-meal and making a concentrate mixture of 15 lb. of 50% meat-meal and 85 pounds of oats (or barley and oats 50% each) may be worth considering.

However, taking all things into consideration, the prepared high protein concentrates are probably the best buy. Concentrates in pelleted or crumble form are best; **on no account buy very finely ground flour-like meals.**

WHAT AMOUNT OF FEED TO BUY?

There is no real problem in calculating the amount of feed to buy; it's really simple arithmetic.

The real problem is deciding on the daily feeding rate you need to use.

The following can be used as guides:

- For cows of average size (say 8-900 lb. weight)—
7 pounds of (protein) hay equals **1 gallon of milk.**
(say 3 lbs. cereal hay plus 4 pounds of Lucerne Hay, i.e. 7 pounds of Protein Hay.)
21 pounds of Hay for maintenance.
4 pounds of High Protein concentrates equals **1 gallon Milk** at about 4—5% butterfat.
3 pounds of High Protein concentrates equals **1 gallon Milk** at 3.5—4% butterfat.
- To average 1 pound of Butterfat per day during a lactation the following is a guide:

Friesians—

30 lb. Hay (10 lbs. cereal + 20 lbs. Lucerne Hay) per day
10 lbs. High Protein (16%) concentrates.

This rate of feeding in practice is giving an average of 3 gallons of milk a day at approximately 3—6% fat.

Jerseys—

20 lbs. Hay (8 lbs. cereal + 12 lbs. Lucerne Hay) per day.
10 lbs. High Protein (16%) concentrates.

In the above cases the milking cows are confined in a small yard supplied with water and shade.

MINERAL SUPPLEMENT

As feed types are restricted (and even if the concentrates are stated to contain mineral supplements) the feeding of minerals such as salt, lime and phosphates would be advantageous.

Useful proprietary mixtures are available. A home mixture of 2 parts bone meal and 1 part coarse salt feed at the rate of 2 ozs. per day is satisfactory.

50 MILKING COWS REQUIRE—

In the above example for Friesian type cows, recently calved, their requirements for 6 months milking would be:—

30 lbs. Hay a day × 180 days	=	5,400 lbs. Hay.
Say $\frac{1}{3}$ is available off the farm	1,800 lbs. Hay.

To Purchase	3,600 lbs. Hay.
-------------	-------	-----------------

$\frac{1}{3}$ of this is Cereal Hay	1,200 lbs.
-------------------------------------	-------	------------

$\frac{2}{3}$ of this is Lucerne Hay	2,400 lbs.
--------------------------------------	-------	------------

This is equal to approx. $\frac{1}{2}$ ton Cereal Hay and 1 Ton of Lucerne Hay per cow.

For 50 cows = 26 Tons Cereal Hay.
50 Tons Lucerne Hay.

Concentrates to be bought in addition.

COMPOUNDING RATIONS

In designing a ration the aim is to feed the cow sufficient nutrients for her production, correctly balanced for energy and protein content, using a combination of fodders.

Special tables giving the food values in Starch and Protein equivalents are used.

Your local Department of Agriculture Dairy Adviser is available to assist in preparing rations.

Department of Agriculture Leaflet No. 3552 "Feeding the Milking Cow" is available at no cost to dairy farmers and is useful reading in conjunction with this article.

DUTY STAMPS ON RECEIPTS

Within the life of the present Government the Stamp Duties Act has been amended on two occasions, and as our members may be unaware of their legal rights and obligations in this matter the Meadows District asked that a summary be published in the Journal.

Stamp Duty is payable in the case of many transactions in which primary producers are involved, but in most cases the other party to the transaction will be adequately informed and explanation is not necessary.

The most common instances in which such specialist advice is not available are the ordinary transaction of buying and selling, for which receipts may or may not be issued. Here the producer wants to know when receipts must be used, and if used, whether they are subject to stamp duty.

Duty stamps are required on receipts where payments of \$10 or more have been made, except for—

- (a) payment of council rates;
- (b) money deposited in or withdrawn from a bank;
- (c) subscriptions to charitable and friendly societies, and premiums for insurance and assurance;
- (d) payment of salaries, wages, or pensions;
- (e) benefits received from friendly or benefit societies for sick pay;
- (f) gifts of money less than \$20;
- (g) lottery and betting wins;
- (h) dividends on investments and debentures.

The amount of the stamp duty is **2 CENTS** for receipts from **\$10 to \$50** and **5 CENTS** for receipts from **\$50 UPWARDS**.

It is not an offence if a receipt is not given to the person making the payment, but the appropriate stamp duty must still be paid in the manner set out in the Act by the person receiving the money.

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HERD 6 WAYS!**

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| 1. MORE MILK | 4. PEAK PERFORMANCE |
| 2. BONUS BUTTERFAT | (all breeds) |
| 3. LONGER LACTATIONS | 5. HEALTHY HERDS |
| | 6. COSTS CUT |

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- MEGMIX

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FARM VATS AND ASN-46

Do they all comply with standard?

There is still doubt in the minds of many dairy-farmers whether all the refrigerated farm vats available comply in full with the requirements of Australian Standard N46 which, it must be remembered, was drawn up at the request of the dairying industry because of the troubles that were being experienced with the farm vats then in use.

The basis of ASN-46 is the ability of the farm vat to cool milk to the required temperature at a sufficiently fast rate to prevent multiplication of whatever organisms may be already present at milking, and to do this under the most severe temperature conditions that are likely to be encountered, this latter being a most important requirement owing to the tendency of an inefficient or under-powered unit to fail completely under a load that is beyond its capacity.

Where city milk is concerned the failure of even one vat may seriously affect the quality of a whole tanker load, and consequently there was good reason for the Milk Board, in its original directive issued in March, 1965, to permit the installation only of vats identical with those which had been tested by the S.E.C.V. and certified as complying in all respects with ASN-46.

However, the Milk Board in October, 1965, modified this requirement, to permit the installation of any vat, when one of the same make regardless of capacity, had been certified, even though this was contrary to the S.E.C.V.'s "Conditions of Testing." The Association's concern at this relaxation was augmented by the high rate of failure being experienced by the S.E.C.V. Although the problem of designing a farm vat with refrigerating capacity sufficient to meet the requirements of the standard was essentially only a matter of engineering calculations, a number of vats submitted for test had proved to be under-powered. In every case modifications, often of a major nature, were required before the vat could eventually achieve the standard of performance necessary for certification.

The Association was subsequently informed of a number of instances where farm vats had been installed which, although made by a manufacturer who had had a vat tested and certified, differed from the certified prototype not only in volumetric capacity but also in the make and specification of the refrigerating unit.

The Association consequently placed this matter before the Milk Board and asked for a statement of the Board's current policy concerning the approval of farm vats. The Association also expressed doubts as to whether the warranties issued by the makers of the vats satisfied the Board's requirements or gave to the purchasers the protection against unsatisfactory operation that was intended in the Board's direction.

The Board referred the matter to its Chief Supervisor (Mr. W. J. Taylor) and has now furnished the Association with Mr. Taylor's report. It will be noted that the report foreshadows amended regulations, which the Association will seek to have implemented as soon as possible.

STANDARDS CONCERNING FARM MILK VATS

A letter from the S.A. Dairymen's Association on the 7th inst. seeks to obtain the Board's current policy in respect to bulk vats and queries two matters in particular.

The queries and the comments on same are as follows:—

1. Does the Board still approve the installation of a farm milk tank which differs in volumetric capacity or refrigeration unit specification from the prototype from the same manufacturer which has been tested and certified by the SECV?

The regulation pertaining to the requirements for refrigerated farm milk tank units states that every person holding a producers licence who requires milk to be collected from his premises by a tanker shall provide a refrigerated farm milk tank which conforms in every respect with the Australian Standard N.46-1963.

Approval before installation is not required although most producers discuss the installation of the refrigerated bulk tank with the District Supervisor prior to the installation.

Although our regulations were amended on 15/9/66 there has been some carry-over of Board policy from the regulation which was deleted at the time the regulations were amended. Producers, milk wholesalers and manufacturers of farm milk tanks still accept the Board's basis which was published in the bulk milk supplement of the S.A.D.A. Journal in October 1965. This reads as follows:

"The Board's basis of approval of refrigerated farm bulk milk tank units will be:

- (1) One unit of each brand of tank to be tested by an authority set up in Australia for the purpose, and a certificate that the unit complies in full with A.S.N.46-1963 and any amendments thereto is to be obtained.
- (2) Other units of the same make but of varying sizes will then be acceptable to the Board provided the unit is stamped with the symbol A.S.N.46-1963 and a warranty is given to the purchaser by the maker that the unit complies fully with the Australian Standard."

All bulk milk tank manufacturers selling in South Australia have had at least one tank tested and certified as complying with the standard. The number of tanks tested and certified as complying is as follows:—

Anderson Equipment	Whole range of units marketed
Dairy Kold	5
Frigrite	2
Alfra-Loval	1
Resco	1
Mirra	1
A. G. Way	1
Sunset	1

Consideration is being given to amending the regulations to give the following effects:

- (a) No unit may be installed unless a refrigerated bulk tank of the same make and volumetric capacity has been tested and certified complying with the standard.
- (b) The unit installed shall be identical in all respects with the unit tested unless otherwise approved by the Board.

The problem then will be to ensure that the units sold are the same as those which have been certified.

2. "If so, does the Board satisfy itself that the warranty issued with such a tank conforms with the intention of the Board's directive of 4/10/65 and is such that, should the unit prove to be incapable of achieving the standard of performance required by ASN46, the purchaser will receive at no cost, a satisfactory unit in place of the unit originally approved by the Board?"

At supervision level the Board has always advised producers to obtain a warranty that the farm milk tank complies with ASN46-1963. Producers have also been advised not to accept tanks unless they are marked with the number of the Australian Standard, namely, N46-1963.

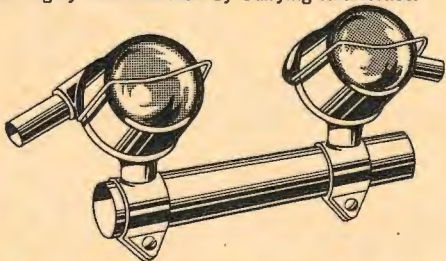
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ONE FEATURE THAT PUTS McDONALD MILKERS WAY AHEAD!

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- Fixed pilot hole in metal for reliable metering.
- Stainless steel body and perspex view dome.
- Self-draining, self-cleaning. Completely vacuum tight.
- Instantly dismantled and supplied with special bracket for expansion mounted.
- Eliminate restrictive bands and connections.
- Will transfer a given quantity of milk or water faster than any other indicator.
- Available in right and left hand units.
- Also available in TNA plated finish.
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It has been noted, however, that some tanks at the time of installation have not been marked as required.

These matters were also brought to the notice of the S.A.D.A. by the Board in a letter written on 5/1/67 in which the Board stated as follows:—

"Producers are advised against accepting refrigerated farm milk tanks unless they are marked as required under Section 7 of the Australian Standard.

It is important also that when purchasing a tank unit producers should obtain from the distributor a warranty that the unit complies with the Australian Standard N46."

The matter of a warranty is basically a business agreement between the buyer and the seller. Having pointed out the basic requirements in respect to the warranty, the the Board does not consider it has any further responsibility in this matter.

—W. J. TAYLOR, Chief Supervisor.

THESE VATS HAVE BEEN TESTED !

The State Electricity Commission has provided a list of all refrigerated farm tanks which have on test performed in accordance with the specifications laid down in Australian Standard N-46.

The complete list is shown on the following page:

REFRIGERATED FARM MILK TANK UNITS

Tested by the State Electricity Commission of Victoria and certified as complying with Australian Standard Specification N46, up to 30th September, 1967

Capacity	Com-pressor Motor	Supplier	Tank Supplier	Condensing Unit	Control Over Icing	Certi-ficate Number
A. Fully Refrigerated Tank-Units—						
150 gal.	3 h.p.	Anderson	Anderson	Kelvinator also Terry	By-pass & solenoid valve	CP65C9 CP65C9A
150 gal.	3 h.p.	Dairy-Kold	M. J. Marshall	Ellis & Judges	Compressor by-pass	CP67C6
200 gal.	5 h.p.	Anderson	Anderson	Kelvinator (Y370) also Terry	By-pass & solenoid valve	CP66C3
200 gal.	5 h.p.	Anderson	Anderson	Kelvinator (Y490) also Terry	By-pass & solenoid valve	CP66C3A CP66C4
200 gal.	4 h.p.	Brambles	"Coldvert"	Terry	Compressor by-pass	CP66/C4A CP67C/6
2,010 lb.	5 h.p.	Alfa-laval	Myttons	Amatice	Compressor by-pass	CP64C2
2,100 lb.	5 h.p.	Dairy-Kold	M. J. Marshall	Ellis & Judges	Compressor by-pass	CP67C2
250 gal.	5 h.p.	Anderson Model R250L	Anderson	Kelvinator also Terry	By-pass & solenoid valve	CP66C10 CP66/C10 AT
250 gal.	5 h.p.	Anderson Model R250	Anderson	Kelvinator also Terry	By-pass & solenoid valve	CP66C11 CP66/C11A
250 gal.	5 h.p.	Dairy-Kold	M. J. Marshall	Ellis & Judges	Compressor by-pass	CP67C3
2,500 lb.	5 h.p.	Pioneer	Mirra	Kelvinator	By-pass & solenoid valve	CP66C6
2,500 lb.	5 h.p.	Frigrite	Wilson-Tyler	Kelvinator	Warm gas injection with solenoid	CP66C1
2,500 lb.	5 h.p. (Modified)	Mobile Equipment Pty. Ltd.	Sunset (Modified)	Terry (Modified)	Compressor by-pass	CP67C19
300 gal.	7½ h.p.	Anderson	Anderson	Kelvinator also Terry	By-pass & solenoid valve	CP66C8 CP66/C8A
300 gal.	7½ h.p.	Truscott	Milkoola	Terry	Constant-pres- sure valve	CP65C8
3,000 lb.	7½ h.p.	Dairy-Kold	M. J. Marshall	Terry	Compressor by-pass	CP67C9
350 gal.	7½ h.p.	Dairy-Kold	M. J. Marshall	Terry	Compressor by-pass	CP67C15
350 gal.	7½ h.p.	Frigrite	Frigrite	Kelvinator	Compressor by-pass & TX valve	CP67C5
400 gal.	7½ h.p.	Anderson	Anderson	Kelvinator also Terry	By-pass & solenoid valve	CP66C13 CP66/C13 AT
500 gal.	10 h.p.	Anderson	Anderson	Kelvinator also Terry	By-pass & solenoid-valve	CP66C9 CP66/C9A
B. Water Assistance Required with Refrigeration						
2,600 lb.	3½ h.p.	Way	Way	Terry	Constant pres- sure valve	CP65C7
C. Milk is Water Cooled from 95°F to 70°F, with Refrigeration from 70°F to 40°F.						
2,400 lb.	2 x 1 h.p.	Mikwell	Myttons	Tecumseh	Cycling one compressor	CP65C6

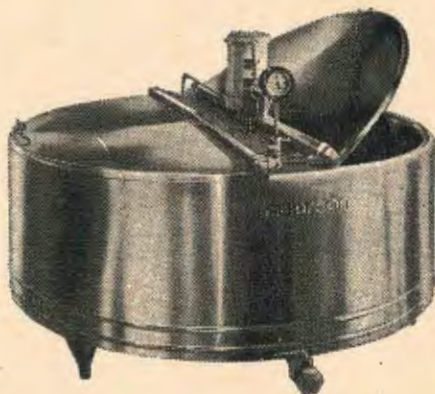
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The manufacturers of anderson Refrigerated Farm Milk Tanks announce the opening of their new South Australian Branch

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Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

	PRODUCTION (000 gallons)					
	For Month		Total since July 1		Total since Jan. 1	
	1966	1967	1965/66	1966/67	1966	1967
July	4,038	3,451	4,038	3,451	24,272	24,131
August	4,589	3,951	8,627	7,042	28,861	28,082

	SALES (000 gallons)						C.M.B. (cents)	
	For Month		Total since July 1		Quota %		C.M.B.	
	1966	1967	1965/66	1966/67	1966	1967	1966	1967
July ...	1,778	1,865	1,778	1,965	44.0	54.0	23.09	27.29
Aug. ...	1,745	1,826	3,523	3,691	38.0	46.2	20.38	23.91

Moving average quota for 12 months ended 31/5/67, 41.18%;
30/6/67, 41.57%

INTERIM PRICES TO LICENSED SUPPLIERS

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

1967	Basic	C.M.B.	Total	3%	3.5%	4%	4.5%	5%
	(cents per lb. butterfat)			(cents per gallon)				
July ...	38.05	27.29	65.34	20.23	23.60	26.97	30.34	33.72
Aug. ...	37.95	23.91	61.86	19.15	22.34	25.54	28.73	31.92

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	June		July	
	1966	1967	1966	1967
Butter—Choicest Australian	300/-	300/-	300/-	300/-
Cheese—First Grade Australian	225/-	240/-	225/-	240/-
Rindless Australian	250/-	270/-	250/-	270/-

INTERIM RETROSPECTIVE PAYMENT

A step-up of 50 cents per cwt. in the interim value for cheese in the 1966-1967 season will increase the interim basic price for last year by 1.14 cent lb. butterfat, equivalent to 0.43 cent equalized on all milk produced by licensed producers in the Adelaide milk supply area. It is expected that payment will be made early in December.

**PENNY
JONES
&
PAT
JENKINS**

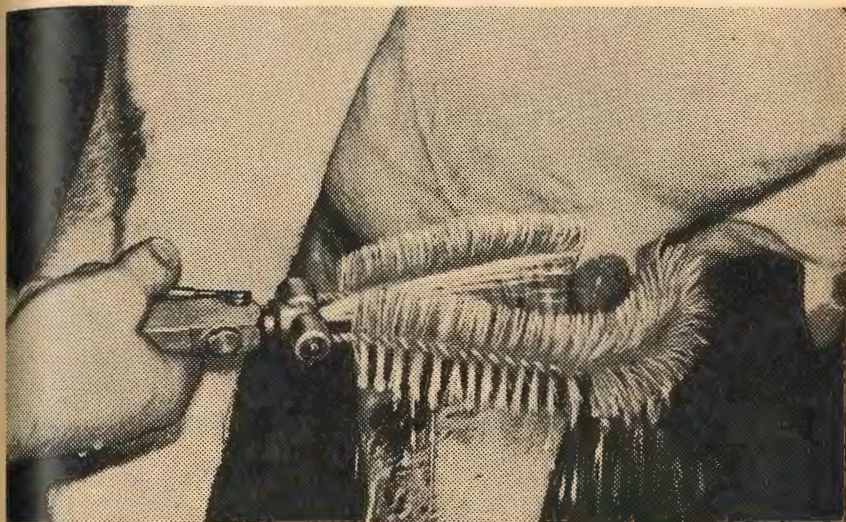
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Prevent Mastitis



New IMP udder spray brush— sanitizes and stimulates as it cleans!

Cleanliness is essential for the control of Mastitis. The new IMP makes udder cleaning faster, easier than ever before and IMP does it more efficiently, more hygienically. IMP is a combination water spray jet, a massage brush and sanitizing applicator. Accelerates stimulation, too, for improved milk let-down. IMP stays clean and is automatically disinfected between cows. IMP will not damage udder or teats and is farm-tested and farm-proven.

Ask about the IMP Udder Spray Brush at your local store or factory

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UDDER
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Cooper's Udder Soap used in milking preparation routine will give greater stimulation for the release of Oxytocin (the milk let-down Hormone) thus enabling all available milk to be withdrawn from the udder at each milking.

Cooper's Udder Soap will remove dirt and organic matter faster, easier and more effectively, resulting in better udder health, less milk-spoiling bacteria and less sediment.

Cooper's Udder Soap Dispenser—
The ideal way to use Udder Soap.

- No fuss—no bother—no waste.
- Clean and convenient.
- Just press the valve for as little or as much soap as you require—delivered right into your hand.
- Epon lined for longer life.
- Simple to attach to any type of bail.
- Save your legs—fit a dispenser in each bail.



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OR DAIRY FACTORY

SWITCH TO CHEESE IS TOO SLOW

The inability of the Australian dairy industry to respond to changes in demand for its various products is highlighted in the 1966-67 report of the Australian Dairy Produce Board.

Despite the fact that the outlook for butter is dim and that for cheese hopeful, the board reports that about 68 per cent of the substantial increase in milk production in 1966-67 was used for butter and skim milk (a by-product of butter).

Cheese production took only 18 per cent of the additional supplies and, as a result, export earnings for cheese are restricted because of inability to meet demand.

Flexibility within the industry is hampered by a plethora of small co-operative factories and the Dairy Industry Stabilisation Scheme.

The scheme shields the farmer against the impact of falling butter prices by bounty payments and by the equalisation plan which pools the returns from profitable domestic sales and depressed export markets.

The shortage of cheese has, however, prompted the Australian Dairy Industry Council to recommend to the Government an increase in the bounty on cheese to a rate equivalent, in terms of butterfat, to that paid on butter.

The report states that an interim adjustment will be paid on cheese produced from July 1 this year with the intention of equalising bath rates from July, 1968.

Butter production in 1966-67 rose by 14,500 tons to 220,000 tons, with exports accounting for 92,300 tons.

Eighty per cent of butter exports were shipped to the U.K., where prices have remained at the low level of 300/stg. a cwt. for a long period, a price regarded as unprofitable by the efficient New Zealand dairy industry.

At present Australia's share of the U.K. market is guaranteed by an import quota system, but under Britain's cheap-food policy, the overall quotas are manipulated to keep down prices to consumers.

The fact that Australia continues to export to the U.K. to the full extent of its quota implies that there is nowhere else for the butter to go.

The long-term outlook for the U.K. market is dim because of rising local production and the build-up of heavy stocks of butter in Europe.

The board's report states that 10 Western European countries recorded their aggregate cold-store butter stocks at about 196,000 tons in April, compared with 189,000 tons and 150,000 tons for corresponding months in 1966 and 1965.

The report also referred to the sharp increase in U.K. butteroil imports from the E.E.C. and Eastern Europe which gain entry outside the quota arrangements.

It is cheaper than butter, has lower freight charges and eliminates the need for cold storage.

The prospects for a clearance of the European stockpiles of butter are not good, according to the report, particularly as United States production is beginning to recover from a slump, and the Canadian decline has been halted.

The one bright spot for Australia is Japan, with sales in 1966-67 rising sharply from 800 tons to 5,200 tons.

The report states that "in assessing the export prospects for Australian butter, much dependence must be placed on the goodwill of the United Kingdom and Japanese Governments.

"There is no doubt that the U.K. butter import quota system can hold a floor under the U.K. butter price provided a responsible attitude to pricing can be maintained on both sides, particularly if the free international price starts to drift under the pressure of subsidised competition.

"The dependence is more direct in the case of Japan because butter is currently imported under a Government controlled tendering system."

The cheese export market in 1966-67 was buoyant and prices sound.

Australia's dependence on the U.K. market has declined substantially over recent years taking only 4,200 tons out of the 1966-67 export surplus of 24,900 tons.

Japanese imports from Australia doubled to 9,500 tons and there was a substantial lift in shipments to the Philippines.

Australia is the leading supplier of cheese to Japan, but the board warns that increasing interest in that market is being shown by Denmark, France and Holland.

Also of concern is rising cheese production in most major producing countries, and within the E.E.C. production will be further stimulated by a higher level of protection implemented last June.

In Australia, however, per capita cheese consumption is rising, although some of the increase could be accounted for by heavier imports of fancy cheeses.

By contrast, butter consumption per head is declining.

The board reports that its association with Asian milk plants is proving profitable.

The plants are taking increasing quantities of skim milk powder and butter oil from Australia.

The most remarkable statement in the board's report claims that "the Australian dairy industry's attitude (to world trade) is a simple support of the principle of comparative advantage, which represents the essence of rationality in economic behaviour and policy."

This must be read in the light of our policy of eagerly imitating overseas dairy nations in high-cost support of butter production for "dumping" on foreign markets.

The board claims that an approximate indication to the extent of Australia's comparative advantage in dairy products can be gained from butter retail prices, which average around 81c (Aust.) in the E.E.C. and the U.S. compared with around 50c to 51c in Australia.

(Financial Review)

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NO DIPSTICKS INCLUDED IN OVERSEAS MILK TANKS

Overseas bulk milk tanks are now being manufactured without the provision of dipsticks.

These were on display at the recent World Dairy Congress at Munich.

Modern tankers are fitted with a flow meter which records the amount of milk received on a dial.

The most costly versions incorporate a printing system which records the weight on a card.

This system of recording bulk milk is receiving attention from Australian dairy equipment manufacturers.

LOWER TESTS WITH BULK MILK?

Does bulk milk handling lead to lower tests? Theoretically one would imagine that a major advantage of bulk handling was that as the cream was kept in suspension by mechanical agitation the test would be more accurate and higher in butterfat than when the cream was allowed to rise to the top of the can and given only a perfunctory mixing before being sampled in the weighing vat.

Certainly we used to receive many complaints about low tests in the days when all milk was transported in cans, and the explanation, particularly of the difference between factory tests and herd test results, was that after the cream had been allowed to rise it could never again be returned to that stage of suspension that would permit of a test that compared with the test made by the herd recorder on milk taken directly from the cow. Sometimes, too, just for good measure, doubts would be thrown on the accuracy of the method of sampling out of the weighing vat—dip versus "drip", adequate agitation, adherence to the can, and so on.

But indications are that butterfat tests on the routine samples taken from bulk vats are equally suspect. Certainly there have been sufficient complaints for us to take the matter to the Milk Board for comment, with the suggestion that the efficiency of agitation, or the instructions to the driver concerning agitation, be examined.

The Board's reply reads:

- "(a) Butterfat tests tend to be lower than for the corresponding period of last year for both can and bulk supplies.
- (b) Investigations are being conducted on the efficiency of vat agitation.
- (c) Attention is being given to tanker driver procedure concerned with the receipt of milk."

The seasonal variation appears to be reversing as the season progresses, but the average fat test of all milk received from licensed suppliers up to the end of September tends to support the Board's contention in (a).

Month	Butterfat Test %		Relation
	1966	1967	
June	4.43	4.39	Lower
July	4.38	4.35	Lower
August	4.32	4.30	Lower
September	4.26	4.34	Higher
(Year to 30th June	4.28	4.31	Higher)

PRICE INCREASE FOR VICTORIAN MILK

The Prices Inquiry conducted by the Victorian Milk Board has now been completed, and the retail price has been increased by 4 cents per gallon.

Of this increase the dairyfarmers received 1.67 cent, processors and distributors together (retail vending arrangements are different in Victoria) 2.13 cents, Milk Board 0.2 cent.

The retail price has now risen from 72 cents per gallon (9 cents per pint bottle) to 76 cents per gallon (10 cents for 1 pint, 19 cents for 2 pints), this retaining equality with Adelaide prices.

ALTERNATIVES TO SUPERPHOSPHATES

A review of experiments on the use of various forms of phosphatic fertilizers in Australia has exposed some important gaps in our knowledge of their comparative performances, particularly over long periods. Many new forms already in use overseas have not been tested adequately in this country.

Forty years ago Australian agricultural scientists keenly sought comparative information on the effectiveness of the different forms of phosphatic fertilizer then available. The choice of "which for what" seemed to be a much more open question then than now. Probably more trials and experiments comparing different phosphatic fertilizers were conducted during the 1920's than in any subsequent decade. However, notwithstanding the fact that Australian agriculture has opted for phosphorus almost exclusively in the form of (single) superphosphate, there are at least five reasons why we should continue to investigate possible alternatives.

Firstly, superphosphate is not the cheapest commercial source of phosphorus. Secondly, our present supplies of raw material, which has special characteristics, are expected to be exhausted within the foreseeable future. Thirdly, new forms of phosphatic fertilizer have kept appearing and finding important uses in agriculture overseas. Fourthly, as a result of repeated applications of the fertilizer, the phosphorus content of soils over extensive areas now presents a markedly different situation from that which confronted the investigators of some years ago. And fifthly, the early work left many questions unanswered. It is by no means certain that Australian agriculture should be applying 99% of all the phosphorus used here in the form of superphosphate.

Mr. E. A. Jackson, while a member of the CSIRO Agricultural Liaison Unit, reviewed this and other aspects of phosphorus usage. His report, entitled "Phosphorus Fertilizer Research in Australia", was produced as CSIRO Bulletin No. 284, 1966. It is based on some 200 published papers and on consultations with many informed people in CSIRO, State Departments, universities, and private industry. The review is the most exhaustive on this subject to have appeared in Australia. He has also contributed many articles on phosphatic fertilizers to this journal. See, for instance, "Rural Research" Nos. 36, 38, 39, 42, 44, 47, 48, 49, and 53.

The possible alternatives to superphosphate that Mr. Jackson considered are: basic superphosphate, ammoniated superphosphate, basic slag, silicophosphates, serpentine superphosphate, and rock phosphate. He mentions that others—including de-fluorinated rock phosphate, calcium metaphosphate, ammonium phosphate, and concentrated superphosphate—are being used or are coming into use overseas. Most of the fertilizers in this group, he points out, either lack sulphur or contain a lower concentration than is present in superphosphate. Since many of our soils need sulphur as well as phosphorus, the potential usefulness of these new forms would be limited in this country. However, scarcely anything is known as yet of their effectiveness under Australian conditions. Research elsewhere has shown that, depending on the soil type and crop, some of these new forms promote higher yields. Certainly, until their possible place in Australian agriculture is fully explored we cannot feel content that superphosphate is the best fertilizer available in every situation.

SUPER GENERALLY BEST

Nevertheless, the comparisons that have been made between super and the other forms of phosphatic fertilizer available here indicate that super has been generally the best choice. There are exceptions, however. On fairly acid soils in Gippsland, Vic., basic superphosphate has stimulated legumes to make better growth than ordinary super. Partially neutralized with hydrated lime or calcium carbonate, it has permitted better nodulation. So has the other neutralized form of the fertilizer, ammoniated super. Basic slag contains very little sulphur and

perhaps on this account in some comparisons with superphosphate it has led to inferior yields. In other trials it has given at least comparable productivity and during the last years of a long-term trial at the Waite Institute it was causing a pasture to increase yield by 30% more than super. This interesting result remains unexplained. But since the Australian steel industry produces no slag suitable for fertilizer this form of phosphorus has only academic interest here.

The silicophosphates, among which Rhenania phosphate is the best-known, are alkaline, insoluble in water, and sulphur-free. In trials in Tasmania on certain soils from which free phosphorus is leached rapidly, Rhenania phosphate has shown up to advantage. The silicophosphates also proved to be more effective on lateritic soils from Kangaroo Island, S.A., than monocalcic phosphate, which is the same as the water-soluble fraction of ordinary superphosphate. And their residual value in the second year has equalled that of monocalcic phosphate. In this comparison, sulphur, potassium, and minor elements were also supplied. Rhenania phosphate has been superior to superphosphate at a few sites in Western Australia, but generally it has been found less effective.

SERPENTINE SUPER

Serpentine superphosphate has been tested on wheat in Western Australia and in a pot experiment on ryegrass in New South Wales. In neither case was better growth obtained than with super, although the two fertilizers were applied at rates that would provide equal amounts of phosphorus. Since serpentine superphosphate is bulkier than ordinary superphosphate, higher freight and distribution costs seem to disqualify the less concentrated material. However, it has some advantages: it does not rot bags, it can be stored under humid conditions without caking, it contains a smaller percentage of water-soluble phosphorus, and is less corrosive to metal than superphosphate. Despite its lower phosphorus content, New Zealanders claim that it is as effective as super, weight for weight. For these reasons serpentine superphosphate perhaps warrants further consideration in this country.

ROCK PHOSPHATE

Rock phosphate has long been considered the most important possible alternative to super. On the basis of phosphorus content it has always been cheaper, although the present bounty of \$6 per ton on superphosphate has almost eliminated this advantage. Most of the experiments involving rock phosphate have used material from Nauru Island or Christmas Island. Both these rocks contain appreciable amounts of fluorine, which makes them less effective as fertilizer than they would otherwise be. Nauru Island rock, which has been used most frequently in the Australian experiments, actually contains more fluorine than the Christmas Island product. In the one recorded experiment in which the two were compared, the Christmas Island rock gave a better response on sub clover.

Years ago a low-fluorine phosphatic rock from Egypt, known as Ephos, was compared with Nauru rock and superphosphate on wheat in New South Wales. It produced higher yields than the Nourite material but lower than the superphosphate. In an 8-year trial at Kybybolite, S.A., on sown pasture, Ephos appeared to be nearly as good as superphosphate and substantially more effective than a local rock phosphate. On natural pasture; however, Ephos was only slightly better than the local rock. In Western Australia and Victoria it was found to be inferior to superphosphate on wheat.

These few experiments comparing different types of rock phosphate emphasize that conclusions drawn about one type cannot be applied to another. They also indicate that the island supplies upon which Australia has depended until now are by no means the most suitable for direct application. Other phosphatic rocks may well offer a more appropriate alternative to super. Since the rock of Nauru, Ocean, and Christmas Islands is likely to be exhausted in the not too distant future, we should perhaps begin now collecting information on the agronomic effects of rock phosphates from other parts of the world. Long-term

experiments are clearly needed to ascertain the real potential of rock phosphates in agriculture.

Unfortunately, many of the Australian experiments with rock phosphate have been of short duration. First-year results have generally shown that it is necessary to apply somewhere around two and a half times as much rock phosphate as superphosphate. Taking the different phosphorus contents of the two fertilizers into account, four times as much rock phosphate as super has to be applied to create equivalent growth.

On a long-term basis, however, the position is not nearly so clear-cut. For instance, over a period of 30 years (1925-55) at the Waite Agricultural Research Institute, rock phosphate and superphosphate were applied in annual dressings to a native pasture at equivalent rates on phosphorus content. The dry matter yields showed that the efficacy of the rock phosphate increased steadily relative to that of superphosphate, and from the 10th year onward it was clearly the more effective fertilizer.

Although the results of this experiment are very suggestive, they should not be taken at face value. The experiment was not replicated. The plots were rotationally grazed and cross-transfer of nutrients could have occurred. There is also a suspicion that in this case something more than a simple phosphorus response was involved. After all, these plots got 185 lb. of superphosphate per acre annually and it would be surprising if, after 30 years, plant growth was still being limited by phosphorus deficiency. Finally, since different plants are able to utilize rock phosphate more or less efficiently, there is no guarantee that similar results would be obtained with sown pasture.

LONG-TERM EXPERIMENTS NEEDED

Some other experiments have also indicated that rock phosphate can be as effective as superphosphate in the long term, particularly on soils that are subject to severe leaching and contain very meagre amounts of native phosphorus. On the other hand, some of the very few long-term experiments have failed to find any reason for applying rock phosphate. Trials of moderate duration (7 years) involving a number of soil types and different conditions have usually shown that, although rock phosphate produces bigger responses in later years than initially, the cumulative yield is less than that from plots given an equal weight of superphosphate.

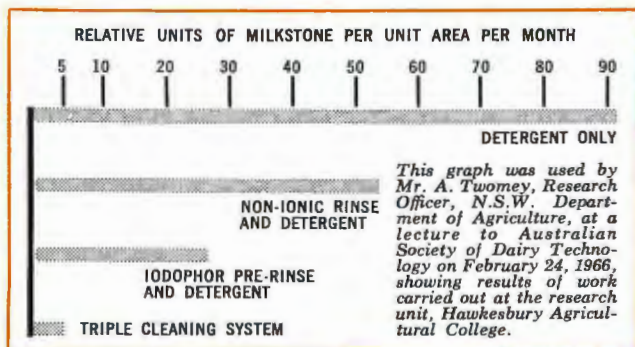
Whatever the long-term value of rock phosphate may be, its potential in combination with superphosphate should not be ignored. While the latter would supply readily available phosphorus for immediate uptake by plants, the former would provide a reserve of residual phosphorus in the soil. A further role for rock phosphate could be in fertilizing pastures that have reached their maintenance phase. These suggestions were advanced some years ago by Dr. J. S. Russell as a result of trials conducted for the South Australian Dept. of Agriculture. They have yet to be adequately explored. Overseas results and some local experience have clearly shown that rock phosphates are most effective on non-calcareous, acid soils containing large amounts of organic matter. Such soils are, of course, rare in Australia, but one along the coast in Western Australia when fertilized with rock phosphate produced sub clover yields that were as large as or even larger than those obtained after a dressing of super containing the same amount of phosphorus. However, a large number of the experiments with rock phosphate in this country have been conducted on non-acidic or only slightly acidic soils. It is also known that particle size influences the nature and extent of the responses obtained from rock phosphate. But many of the experiments performed to date have disregarded this point.

For all these reasons Mr. Jackson considers that "there is still a need for long-term experiments with materials (rock phosphates) from different sources, different degrees of fineness, and using a range of plant species on a representative selection of soils."

Research Proves Triple Cleaning System

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

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Official Publication of the

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7, No. 3

Adelaide, NOVEMBER-DECEMBER, 1967



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THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL



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THAT 4 CENT RISE

Because of the present adverse seasonal conditions there has probably never been a time when licensed producers awaited more keenly the promised increase of 4 cents per gallon in the city milk price which was announced in the previous issue of this Journal, and, judging by the many queries directed to this office and to the factories, a number of farmers wondered whether they had received it after all.

Certainly it was received, every cent of it, by producers, and producers only, but the misunderstandings and the confusion are due to the fact that there is always a month's delay in the payment for city milk.

The Interim Basic Price (i.e. the "cheese value") is paid for all milk received, shortly after the end of the month, but the City Milk Bonus, which is derived arithmetically only after the total volume of intake and the total sales of all factories are known, is paid early in the following month. In other words, the cheque received by a dairyfarmer on about 10th February would contain the INTERIM BASIC PRICE for all milk received during JANUARY and the CITY MILK BONUS for all milk received during DECEMBER.

A further misunderstanding can arise from the fact that an increase in the price of city milk takes place from the gazetted date. **it is not retrospective**, whereas a step-up in the interim basic price always goes back to the beginning of the financial year and is accompanied by a retrospective payment which is shown as a separate item on the Account Sales.

So there need be no cause for alarm.

THE WHOLE OF THE FOUR CENT INCREASE IN THE CITY MILK PRICE WAS PAID TO THE PRODUCER!

The new price was effective from 10th December, 1967, and was paid out in the cheques received early in February, in which the City Milk Bonus for December was made up of 9 days at the old (39 cents per gallon) rate and 22 days at the new (43 cents per gallon) rate.

Admittedly the rise relates **only to city milk**, there has been no rise in the price of milk for cheese, and as less than half the total production is used for city milk, the return for the year will show an increase on all a farmer's output

WERNDEW JESSIE

This Victorian-bred cow, first prize winner of the class 4-year-old in milk at the Royal Adelaide Show in 1966 was ranked as Champion Guernsey Cow at Adelaide in 1967, as well as winning the classes for best vessel, mother and daughter, and 5-year-old in milk, a creditable performance which was capped by being classed Reserve Champion Cow and winner of the 5-year-old in milk at the Royal Melbourne, 1967. WERNDEW JESSIE has also performed well at country shows, being first prize winner and Champion Cow at Gawler, 1966 and Champion Cow at Angaston, 1967.

of less than half 4 cents. In other words the effect of the rise in the city milk price is to increase the return on **ALL MILK PRODUCED** by about 1.8 cents per gallon.

There is, perhaps, only one other complication that may cause confusion, namely, the question of the increase in the **RETAIL** price, and the apparent increase of one cent per pint.

The increase granted to the producers was 4 cents per gallon, raising the return from 39 cents to 43 cents. If this increase were passed directly to the consumer it would have increased the retail price by $\frac{1}{2}$ cent per pint, to $9\frac{1}{2}$ cents for a pint bottle, which, in the absence of a half-cent coin, **cannot be paid in cash**. So the Milk Board set out a price schedule that increased the retail price by 1 cent per pint on a **SINGLE PINT**, and by $\frac{1}{2}$ cent per pint for a two-pint sale, two $\frac{1}{2}$ cents and a whole cent for a three pint sale, and so on, rounding off to the next whole cent higher all sales of an odd number of pints.

At the same time the Milk Board removed the price structure for bulk milk the rounding-off $\frac{1}{2}$ cent that had applied to odd numbered sales under the old prices for bulk milk.

So generally it can be said that the retail vendor has gained a $\frac{1}{2}$ cent per pint on **EACH SALE** (not each pint!) involving odd numbers of pints for bottled milk, and lost the $\frac{1}{2}$ cent per sale on odd sales that he used to have for bulk milk, and as the **average** sale per household is well over a single pint there is probably little or no gain to the vendor from this source.

Such are the explanations about the latest rise, but the queries have made it apparent that it is timely to refresh the memories of licensed producers on the warking of the Milk Equalization Plan, and for this reason the text of an address given by Mr. E. Mostyn Garrett some years ago is reprinted, with revisions where necessary, elsewhere in this Journal.

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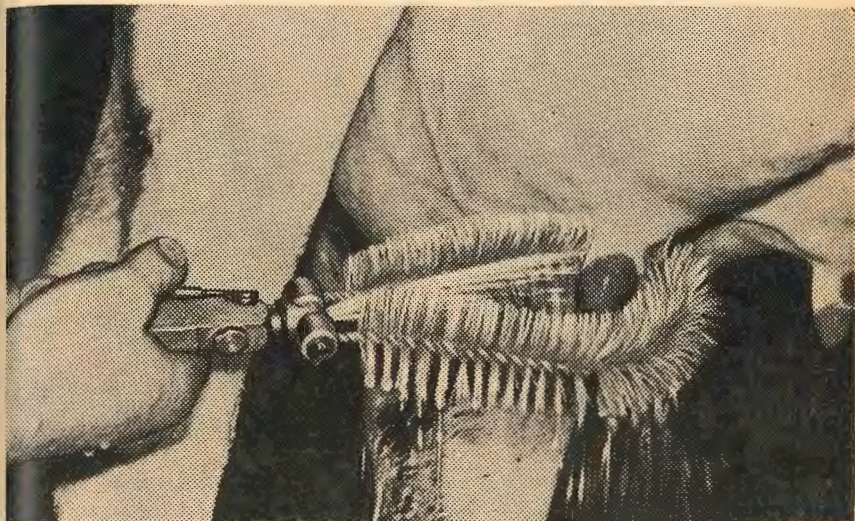
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Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

	PRODUCTION (000 gallons)					
	For Month		Total since July 1		Total since Jan. 1	
	1966	1967	1965/66	1966/67	1966	1967
Sept.	5,189	4,718	13,816	12,120	34,050	32,800
Oct.	5,881	5,496	19,697	17,616	39,931	38,296

	SALES (000 gallons)						C.M.B. (cents)	
	For Month		Total since July 1		Quota %		C.M.B.	
	1966	1967	1965/66	1966/67	1966	1967	1966	1967
Sept.	1,690	1,729	5,213	5,420	32.6	36.7	17.73	19.90
Oct.	1,749	1,806	6,962	7,226	29.7	32.9	16.17	17.79

Moving average quota for 12 months ended 30/9/67, 43.27%;
31/10/67, 43.73%

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%
1967	(cents per lb. butterfat)			(cents per gallon)				
Sept. ...	37.95	19.90	57.85	17.91	20.90	23.88	26.87	29.85
Oct. ...	37.95	17.79	55.14	17.07	19.92	22.76	25.61	28.45

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency per cwt.)

	Aug.		Sept.	
	1966	1967	1966	1967
Butter—Choicest Australian	300/-	300/-	300/-	300/-
Cheese—First Grade Australian	240/-	240/-	240/-	240/-
Rindless Australian	265/-	270/-	265/-	270/-

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VOTE **HARPER, R. A.** [1]

and the other candidates in order of your choice

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BEST FOR SOUTH AUSTRALIA

Meetings will be held at—

ECHUNGA, Tuesday, February 20. — STIRLING, Thursday, February 22.

CLARENDON, Tuesday, Feb. 27 — MT. BARKER, Thursday, Feb. 29.

In ALEXANDRA: **JOHNS, W. F.** [1]

—Authorized by T. G. Clark, 346 Carrington Street, Adelaide.

REFRIGERATION, MILK QUALITY, AND THE METHYLENE BLUE TEST

The Annual Report of the Metropolitan Milk Board for 1966-67 (extracts from which are reprinted elsewhere in this Journal), states that "the Methylene Blue Reductase Test is not a suitable test for refrigerated milk (and) consideration has been given to the adoption of a bacteriological test which is more indicative of the conditions of production."

There need be no misunderstanding about this statement. If two samples of milk are tested by the Methylene Blue Reductase Test, and each gives the same result in terms of reduction time, it can be said simply that the number of bacteria present in each sample at the beginning of the test was approximately the same in each case, and that the "quality" of the two samples of milk, so far as the bacteriological aspect is concerned (without regard to the types of bacteria) is comparable.

Why, then, should it be necessary to apply a different test for refrigerated milk, particularly milk refrigerated in a farm vat?

The answer is that the meth. blue test as applied in South Australia has two purposes: it is both a subjective and an objective test.

Certainly it tests the quality of the milk from which the sample is taken; this is the objective test—is this particular can of milk, or the total contents of this batch of milk from a particular supplier, up to standard as regards bacteriological quality?—and the answer given by the meth. blue test is "Yes" or "No", AND IF ALL THE MILK FROM EACH SUPPLIER WAS TESTED EVERY DAY this objective use of the test would suffice for refrigerated milk and unrefrigerated milk alike!

But the meth. blue test is not taken every day; it is taken only once in each 8-day period, so it is really only as a quality test on one-eighth of the milk produced. Its use in regard to the other seven-eighths is a subjective test, intended as a safeguard for the quality of all milk produced, by assessing the standard of hygiene used in the milking process.

But it is in use that a degree of interpretation is required, for the meth. blue test measures the bacteriological quality of the milk AT THE TIME THE TEST WAS TAKEN and not at the time of milking, for in the interval the bacteriological population has increased by an amount which depends upon the standard of hygiene, the prevailing temperature, and the length of time that has elapsed since milking.

At least this is so in the case of unrefrigerated milk, for even if the milk has been cooled to a supposed 60° temperature, the bacterial growth will proceed at a surprising rate.

In the case of refrigerated milk, although the meth. blue measures, as in the previous case, the bacteriological quality of the milk at the time the test was taken, it also measures the quality AS IT WAS AT THE TIME OF MILKING, for the milk is cooled immediately after milking, to a temperature that inhibits (and, except for the psychrophilic bacteria, actually prevents) the increase of the bacterial population, and the sample which is taken when the milk is transferred to the tanker transport is, likewise, maintained at a growth-preventing temperature.

The bacterial content of the refrigerated milk is, consequently, virtually unchanged between the time of milking and the time of testing, and; unlike unrefrigerated milk, has not increased by reason of favourable temperatures or lapse of time. Therefore it is reasonable to state that if two samples of milk, one refrigerated and one unrefrigerated, achieve the same standard when tested by the meth. blue test, the conditions of hygiene applying in the production of the refrigerated milk are much lower than those applying to the unrefrigerated milk.

Objectively, this doesn't matter. The two samples are of comparable quality, and providing the test is 4½ hours, both samples may be classed as "acceptable". But subjectively it does matter, because, to produce, consistently, under unrefrigerated conditions, milk of high quality, requires a high standard of hygiene obtained by methods which tend to maintain this standard, whereas the ability, with refrigeration, to ease-up on hygiene produces unstable conditions

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which can lead to an unpredictable, "explosive", breakdown of milk quality.

Perhaps simply, though not necessarily precisely, it can be said that the Preliminary Incubation system is designed to impose on the user of refrigeration the same handicaps that are suffered by the unrefrigerated dairyfarm in the way of time-lapse between milking and testing, temperature-rise overnight and during transport, and the absence of refrigerated or insulated can pick-up trucks.

The technical and regulatory aspects of the P.I. Test are described below.

PRELIMINARY INCUBATION METHYLENE BLUE TEST

The present standard for city milk as applied to farm production requires milk to comply with the methylene blue reductase standard of four hours. This standard was based on farm water cooling methods which permit considerable multiplication of micro-organisms between time of production and acceptance at the receival depot.

In general terms the purpose of bacteriological tests is to encourage the hygienic production of milk and to detect unhygienic production methods. With the advent of refrigeration and in particular refrigerated farm milk tanks, unhygienic production methods are not detected by conventional testing procedures and previously established bacteriological standards for milk.

With the introduction of farm bulk tanks where temperatures are maintained in the vicinity of 40°F. multiplication of bacteria in the milk is practically eliminated. A dairyman can be relatively careless in the cleaning and sterilising of milking equipment and still comply with accepted bacteriological standards.

Bacteriological standards for refrigerated farm milk has been the subject of much literature and discussion in recent years. In these discussions preliminary incubation of samples prior to testing has been given considerable attention both overseas and in Australia.

The incubation of raw milk before testing makes it possible to distinguish milk produced under unsatisfactory conditions from milk produced under satisfactory conditions.

Under the preliminary incubation test the sample is incubated for twenty-four hours and at the end of this period the normal methylene blue test is applied.

Since November, 1967, treatment plants have carried out the preliminary incubation test on milk supplied by producers who have installed refrigerated bulk milk tank units, but producers have not been officially informed where the results have failed to reach the provisional standard which has been fixed at two and a half hours.

Investigations which have so far been carried out by the supervision staff have shown that a number of producers have not maintained normal standards of cleanliness and sanitation.

As from the 17th February, 1968 factories will discontinue the customary testing procedure on milk supplied by producers with refrigerated bulk milk tanks but will apply the preliminary incubation test to this milk. Producers whose milk fails to reach the provisional standard will be informed by the treatment plants of their results within twenty-four hours of the completion of the tests. Advice cards similar to those now in use but with some modifications will be used and on the back of the card the main causes of test failure will be set out.

At this stage it is not intended to suspend the licences of producers whose results are below the provisional standard but these results will be followed by a visit by the District Supervisor and further action may be considered if conditions at the dairy are found to be unsatisfactory.

It is pointed out that with bulk milk tanker pick-up the unsatisfactory standard of even one vat may contaminate the milk of all other producers on the run.

The introduction of the preliminary incubation test will

- (a) direct the attention of the field staff to those farms which are in need of an inspection.
- (b) indicate unsatisfactory conditions which would not otherwise be detected.
- (c) help prevent the use of cooling to mask poor cleaning.
- (d) bring pressure on the careless producer to do a better job.

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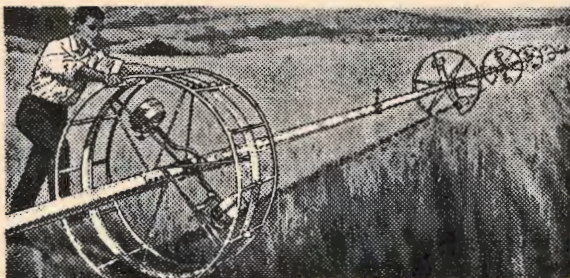
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However, producers adopting normal methods of cleaning their premises and equipment have nothing to fear from the new testing procedure.

The Board is confident that producers will co-operate in the implementation of these measures which will further improve the standard of milk supplied to the Metropolitan Area.

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THE MILK BOARD REPORTS . . .

(Extracts from the 1967 Annual Report of the Metropolitan Milk Board.)

NEW REGULATIONS

Important changes and additions were made to the regulations concerning farm milk tanks and dairy premises during the year.

The regulations concerning farm milk tanks stipulate that as from the 15th September, 1966 only refrigerated farm milk tanks may be installed and that these must comply with the standard as specified in the publication Australian Standard N.46-1963 published by the Standards Association of Australia.

Most of the regulations pertaining to dairy farm premises were revoked and new regulations were gazetted covering basic requirements for the production and handling of milk on dairy farms. The previous regulations were completely inadequate both in respect to scope and detail.

The regulations cover in detail the requirements for dairy premises and equipment and are designed to safeguard the quality of milk and cream by ensuring that the methods of production are in accordance with modern standards of sanitation.

COST OF PRODUCTION SURVEY

The cost of production survey was again conducted from a representative sample of 86 licensed producers situated throughout the various regions in the metropolitan producing area. The farmers participating were supplied with full details of their own individual costs, the regional average costs and the general average costs of all the farms in the Survey. The overall results were also made available to the producer organizations.

Despite higher prices and increased allowances for labour, licensed producers have continued to improve productivity enabling them to keep down the calculated cost per gallon.

The major increases per gallon in paid out costs were for fodder and concentrates 14 per cent, sundry farm expenses 8 per cent and rates and taxes 6 per cent. The overall increase for goods and services paid for was 5 per cent. This was offset by an average production increase of 10.3 per cent per survey farm. Within the structure of the survey the imputed components of cost, interest on capital, labour and depreciation showed a fall of 3.9 per cent. Increased productivity accounted for this cost reduction as the average production per survey farm rose by 3,356 gall. to 35,909 gall.

The claim from uninformed sources that the dairy farmer is inefficient certainly does not apply to producers licensed by the Board.

Each year the figures from the Cost Survey have revealed that the dairy farmer by efficient farm management has increased his yield per cow and production per farm. This combined with a close watch on cash expenditure has enabled him to control, within reasonable limits, his unit costs.

SEASONAL CONDITIONS

Seasonal prospects were excellent at the beginning of the period under review following good rains in May and June.

Above average rains in all districts in July followed by useful but slightly below average rains in August provided excellent conditions for the growth of pastures and crops. This was followed by further good rains in all districts in September and somewhat lighter rains in October.

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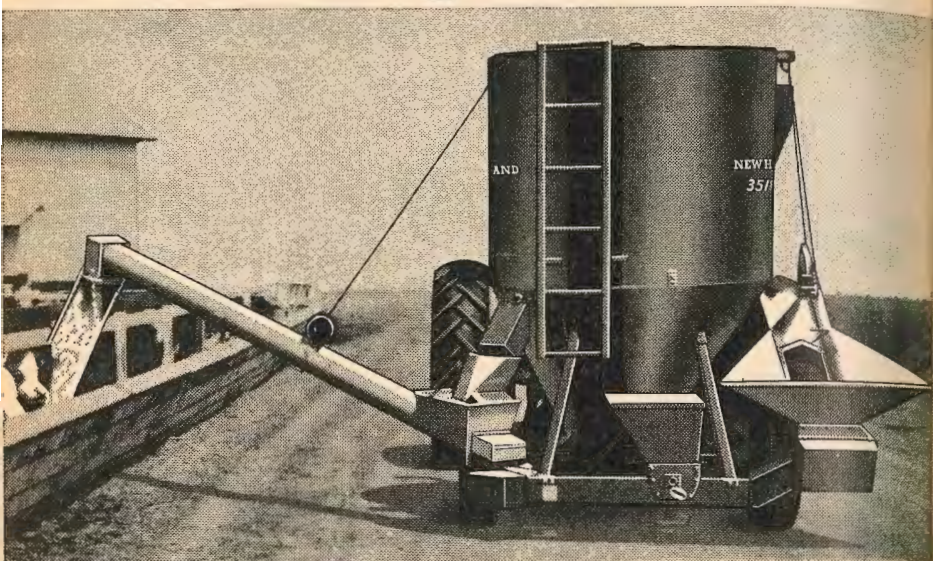
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As a result of the unusually good late winter and spring rains, pastures and crops made excellent growth. Weather conditions in November were well suited for hay making and hay cuts in all districts were well above average—in fact many enthusiastic farmers reported that the hay cuts were the best they could remember.

Unfortunately exceptionally heavy rains which fell during the first week of December caused considerable spoilage of hay and cereal crops but despite this the quantity of hay stored was above average.

While the first six months of the period under review were particularly favourable for milk production the following six months were almost equally unfavourable. The rainfall during January, February and March was light although thunderstorms caused a strong germination of clovers and grasses. This, however, was much too early in the season and dried off rapidly.

Winter conditions during April, May and June continued to be unfavourable and rainfall was so light that the total rainfall for the six months was one of the lowest on record.

With an almost complete absence of paddock feed except that grown under irrigation producers had to draw heavily on fodder reserves for the feeding of stock.

At the close of June the seasonal outlook was particularly dismal with paddock feed either non-existent or too short to provide other than a picking and fodder reserves were at a very low level.

BULK COLLECTION

Since the first refrigerated farm milk tank was installed in 1965, great interest has been shown in this method of handling milk, particularly in the higher rainfall districts such as the Eastern and Western Mount Lofty Ranges and the Murray Irrigation Area. It appears almost certain that within 12 months the whole of the milk produced on the Murray Irrigation Area will be handled by the bulk collection method.

The interest in and the acceptance of bulk collection of milk in the other districts of the milk production area has been much greater than was anticipated as recently as two years ago. Considerable interest has been shown by producers whose production per farm is above average.

During the year regulations made under the Metropolitan Milk Supply Act were amended making it obligatory for producers to instal only refrigerated farm tanks which comply in every respect with the standard as specified in the Australian Standard N.46-1963.

While this is a necessary standard it has created serious problems for the supervision staff and producers, as unless the tank has been tested and found to comply with the standard the Board is heavily dependent on the guarantees of the manufacturers that their tanks comply with A.S.N.46-1963.

Many discussions were held with manufacturers of farm milk tanks and two visits were made Interstate to discuss problems and matters related to the administration of the regulations concerning compliance with the Board's requirements.

During the year 242 tanks were installed bringing the total to 324 refrigerated farm milk tanks.

Difficult seasonal conditions experienced during the latter part of the year caused some interested producers to defer the purchase of bulk tank units and if it had not been for this factor the number of tanks installed would have been considerably higher.

DAIRY REFRIGERATION

As a direct result of the development in the bulk collection of milk there was a reduction in the number of dairy farmers using refrigeration for milk handled in cans. Many producers previously using can refrigeration have replaced these with refrigerated bulk milk tanks and most of the can refrigerators installed during the year were purchased from producers now using bulk milk tanks.

In all, 892 producers are using refrigeration for the cooling of milk of which, as mentioned above, 324 have installed refrigerated farm milk tanks.

MILKING MACHINE TESTING

The testing of milking machines by the District Supervisors was continued as a regular and important service to producers. The importance of correctly adjusted milking machines is well appreciated by producers both in respect to loss of milk production and as a cause of mastitis thereby resulting in further loss of production as well as lowering the compositional and bacteriological quality of milk.

During the year the District Supervisors tested 154 machines using the air flow meters and the vacuum recorders with which each of the District Supervisors is equipped.

TUBERCULAR TESTING OF STOCK

Pursuant to regulations made under the Metropolitan Milk Supply Act, 1946-1957, 293 licensed herds were tested during the year covering 21,611 head of cattle. There were no reactors to the test, a very satisfactory result.

MILK QUALITY

Milk quality as determined by the Methylene Blue Reductase test was slightly better than the previous year particularly during the summer months. This was influenced by the milder weather temperatures during these months and the increase in the number of producers using refrigeration for the cooling and storage of milk.

As the Methylene Blue Reductase test is not a suitable test for refrigerated milk, **consideration has been given to the adoption of a bacteriological test which is more indicative of the conditions of production** (refer the report from the Chief Adviser on the Pre-Incubation Test, elsewhere in this Journal.—Ed.). This is a problem on which there has been considerable discussion since the advent of bulk collection. The bacteriological test for refrigerated milk should be indicative of the sanitary condition of the plant as well as the effectiveness of cooling. Unless refrigerated milk is produced and handled under clean conditions and in clean equipment it cannot be regarded as being of satisfactory quality.

The monthly summary of the percentages of tests conforming with the standard for 1964-65, 1965-66 and 1966-67 is listed below:—

Period	1964-65	1965-66	1966-67
June—July	99.92	99.28	99.14
July—August	98.92	98.74	99.44
August—September ...	98.22	98.07	98.27
September—October	94.02	94.70	97.24
November—December	96.05	94.87	87.65
December—January	95.26	68.26	94.29
January—February	91.93	92.16	96.13
February—March	79.42	97.11	93.16
March—April	96.02	93.45	95.13
April—May ...	97.87	96.68	96.79
May—June ...	99.16	98.73	98.99

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A COMPARISON OF RETURNS NEW ZEALAND versus AUSTRALIA

One of the "proofs" adduced by our critics of the inefficiency of the Australian dairy industry is the allegation that if the local industry were allowed to become extinct, we could buy our butter and cheese more cheaply from New Zealand. There is much truth in this because New Zealand, not being the fortunate possessor of a widely diversified secondary industry sector, has a lower (often much lower) level of tariff protection, with consequent lower costs of production factors, together with a generally much lower level of labour costs and power charges.

Without deeper study it is impossible to tell the extent to which lower input costs, as against higher "efficiency", contribute to lower prices, and it is intended that further study will be made. But for the present we print for our members dairy-farm and factory returns for New Zealand for the year 1965-66 derived from "Butter and Cheese Factory Process Analysis", an official publication of the New Zealand Dairy Board which sets out in great detail the itemized costs of manufacture of butter and cheese and the return to dairyfarmers.

The Australian figures shown for comparison in the case of butter are those published by the Commonwealth Statistician, and in the case of cheese, are those applying to licensed producers in the Metropolitan Milk Supply Area.

AUSTRALIA

NEW ZEALAND

Butter 1965-66

(cents Australian per lb. butterfat)

FARMER (return for produce at factory door)	44.25	
		36.35
		(includes factory bonuses)
		(cartage 0.51 cent of the above)
FACTORY (margin for manufacturer from factory door to F.O.B.)	5.34	3.33
TOTALS	49.59	39.68

Cheese 1965-66

(cents Australian per lb. butterfat)

FARMER (return for produce at factory door)	45.89	47.76
(without factory bonus, but includes R. and P. levy)		(includes factory bonus)
FACTORY (margin for manufacturer, from factory door to F.O.B.)	18.64	11.03
(before factory bonus)		(after factory bonus)
TOTALS	64.53	58.79
(calculated at 2.55 yield)	45.49	

NEW FRENCH TAX LIFTS MILK PRICES

Although food prices are subject to concessionary rates, the new "Euro-tax" system now being developed in France has had the effect of making French housewives pay a record price for milk.

Under the French T.V.A. system foodstuffs bear taxation at each sales stage to a total of six per cent of value added, compared with the standard rate of 16.6 per cent for most other goods.

Even so, housewives are now having to pay about a peak price of about 9 $\frac{3}{4}$ d. stg. a pint for milk in cartons and just under 9 $\frac{1}{2}$ d. a pint for bottled milk.

Official price rises in the spring and autumn of 1967 added about one-fifth of a penny to the standard pint, largely to meet farmers' persistent demands over many years for a better deal for dairy products.

Until the latest increases and this month's T.V.A. rise, French milk earnings have been consistently lower than those of farmers in other main European dairy countries.

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PRODUCTION BOOST FROM BETTER FEEDING

Droughts are one of the best management boosters known, simply because they force many farmers to really look at the feed value of the material they are feeding their cattle, for the first time.

It has been said that the present drought has affected fewer farmers than ever before, simply because they have learnt from their previous experiences with droughts. Many have found themselves taking a new look at their feeding methods even in a flush year when all is going well.

The most important factor is first to have reserve fodder on hand and secondly to see that the stock get the most from it. The hit and miss days of stock nutrition have gone, because no one in their right mind can afford it. It is no good trying to get something out of a cow unless you give her the basic requirements.

More and more farmers are realising the importance of supplementing their cows' paddock diet with well balanced well mixed feed. Overseas trends illustrate this important factor and if the dairy industry is to stay healthy it must be fed properly.

Throwing a cow a bale of hay and hoping that she will get enough out of it to keep her going is a sheer waste. The hay should be blended with all of the other essential nutrients the cow needs and then presented to her in such a way that she can make the most out of it. Feed is expensive enough without throwing it on the ground for the stock to walk over it.

We specialise in precision mixed rations and the machines to do it. While we sell the full range of Wetmore Grinder Mixers, we still feel it is just as important to back up our machines with the latest and most profitable rations being used both locally and overseas. We have cases where dairy farmers have actually lifted their production through the drought simply by taking a second look at their rations. Many of these techniques will be applied to their regular feeding methods in an effort to further lift production.

We base most of our ideas on farmers who are already doing this here in S.A.

We place you under no obligation to come and have a chat with us. You will find us at our Head Office, 118 Glen Osmond Road, Parkside, or if you would like to go direct to our new drive-in show room, turn right into Davey Street, corner 118 Glen Osmond Road, Parkside, then first turn right.

PRIMARY IMPLEMENTS PTY. LTD. is our name and we shall be very pleased to see you.

NEW FERTILIZER FINDS OF TREMENDOUS IMPORTANCE

What would the savings to Australia's economy be if we did not have to import fertilizers? Is this situation likely in the future? Mr. G. O'H. Giles, M.H.R. Angas, says we could become self-sufficient.

Firstly, **Superphosphate**. The phosphate finds around Duchess, just south of Mt. Isa in Queensland, are extensive and are of a quality comparable with Nauru, which is 37% of available phosphate. These phosphate deposits, of different chemical structure to Nauru, are not thin seams running through the soil structure, but are economic deposits of tremendous size. If we export 90% of this phosphate rock, we would still have enough left to supply Australia's anticipated needs for hundreds of years ahead. Is there a disadvantage? There is in terms of distance from the seaboard. Should special railways be built from Duchess through to Brisbane, or should such a railway join the New South Wales grid at Bourke? But, at least Australia will have ample supplies of phosphate rock at a time when Nauru supplies are running out, and at a time when other supplies on the world markets are of a much poorer quality. The economics of processing and marketing are yet to be resolved, but exports seem promising through a port in the Gulf of Carpentaria.

Secondly, **Potash**. Potash deposits have been found in one or two salt lakes in Western Australia, which must be similar to the potash deposits in the Dead Sea at Israel which I saw recently. From the Dead Sea, Israel exports potash all over the world. It seems likely, therefore, that if potash indications have been found in these Western Australian lakes, it will be possible to isolate this important and expensive fertilizer and make it available to Australian primary producers in due course. It is possible that supplies, as yet undiscovered, exist in South Australian salt lakes.

Thirdly, **Nitrogen**. At present nitrogen is mainly a bi-product of the petrochemical and other similar types of industrial processing. It is anticipated that by 1970 Australia will have the capacity to produce nitrogenous fertilizers at a rate of five times today's demand. In my view this may only keep up with the rate of increase in the use of nitrogenous fertilizers which, over the last few years, has averaged 20% increase per annum. Furthermore, it is anticipated that the price of this nitrogen could well be **below** the current prices ruling in Australia today.

The prospects, then, with these three major elements in the balanced fertilizer treatment available, with also ample supplies of the fourth important component, calcium, Australia stands on the threshold of a wonderful degree of self-sufficiency. Not only is self-sufficiency of prime importance to this country with the outgoing of our currency to pay for imported fertilizers being extraordinarily high, but also it opens up another exciting prospect.

I refer to the general shortage of fertilizers in South East Asia and in countries such as India. Here fertilizers are imported at some expense from Germany, Canada, United States, etc. It seems quite probable that we will be able to enter extremely competitively into the field, as suppliers to these nations. So instead of being a net importer of fertilizers, of some consequence, we could, by the mid-70's be net exporters of fertilizers. Such tremendous development and such exciting prospects should point out to Australians in general the responsibility we owe to many of our Northern neighbours in the fact that we must help them in their development programmes, and become even more involved and connected with the countries of South East Asia, in whose region we live.

Finally, a note of warning. Given Australia's high costs of production—particularly labour costs, a position could arise analogous to that of Australian petroleum. Imported petroleum can be landed in Australia more cheaply than can Australian petroleum transported from well site to the nearest seaboard.

Duchess mine is almost 1,000 miles from the Eastern seaboard. The economics of freight costs F.O.B. from the site of the deposits will tell the story.

The Function and Operation of Licensed Milk Equalization

by Mr. E. MOSTYN GARRETT

Treasurer of the Metropolitan Milk Equalisation Committee Limited

It is almost ten years ago since Mr. E. Mostyn Garrett, the Treasurer of the Metropolitan Milk Equalization Committee Limited gave an address to the Central Council of the South Australian Dairymen's Association under the above title.

The text of the address was printed in the "S.A. Wheatgrower" which was then the official organ of the Association, and the reprints of the article were in steady demand for some years after. But the industry is always in a state of flux; newcomers enter the field, methods change, memories fade, and the spate of queries concerning the latest milk price increase (which have been answered in the foregoing article) indicates that the time has come for Mr. Garrett's address to be introduced to another generation of dairyfarmers. However, although the principles and the operation of the system have not changed, amendments have been made to the form of presentation of the statistics and the monetary unit, and the text has been brought up to date in this respect.

BASIC PRICE

The "basic price" is the starting point of equalisation; it is the interim "cheese value" as agreed between the South Australian Dairymen's Association and the merchants. The basic price is an "interim" price, a "starting price"; it is not the final price. The price is built on a formula which you probably all have seen at some time. Now how do we find this "cheese value"?

The first information comes from the Commonwealth Dairy Produce Equalisation Committee Ltd., which administers the Australian butter and cheese equalisation plan. Your plan is the Metropolitan Milk Equalisation Plan, a "plan within a plan."

The Commonwealth Equalisation Committee each year decides on an "interim cheese equalisation price." This is done at the 1st July for the whole of the season; but during the year come these step-ups to confuse the issue.

The interim price is always a conservative one because the Commonwealth Equalisation Committee doesn't know what will be produced, how much will be sold in Australia, what the London market is going to be . . . and so on; so it's a very prudent starting price, as you know (although nowadays the Federal Government's underwriting guarantee enables the Committee to adopt a more liberal estimate for the opening value.—Ed.).

The basic milk price formula, which has been in existence for some years, was set up when we came on to cheese as a base value with the Prices Commissioner coming in as an independent arbitrary body to say "Now let's look at this; are the merchants giving the producer a fair deal?" Since then the formula has continued with slight variations.

We start in July 1967 with the Commonwealth Equalisation's interim cheese equalisation price of 57.83 cents lb. fat. Then comes the manufacturing cost of an average Australian factory as set down by the Commonwealth Equalisation Committee (in conjunction with the Commonwealth Government in Canberra, with the help of the Bureau of Agricultural Economics). Added to the manufacturing cost is the research and sales promotion levy.

When we deduct these two items we arrive at what we call the "interim price at the factory door." In addition we must take off, in this formula, the cartage (that is, the inward cartage of the milk to the factory door) and what is called a "money margin." This last phrase was coined by the Prices Commissioner. None of us likes the title, but anyway it was used to cover such items as profit on investment, the supply of cans, spillage, and items not included in the other costs. So today (1/2/68) you are paid 37.95 cents on that formula, namely,

Basic Milk Price Formula
(as at 1/1/68)

		cents
Interim Cheese Equalisation Price		57.83
Less Assessed Manufacturing Cost	11.65	
Less Research and Sales Promotion Levy	0.47	
	12.12	
Interim Price at Factory Door		45.71
Less Cartage inwards	5.49	
Less Money Margin	2.27	
	7.67	
Interim Basic Price on Formula (per lb. butterfat)		37.95

LEVIES

Having established this "basic price" for your milk, you realise that milk is not all made into cheese; a portion of it, about 45 per cent, goes into whole milk and sweet cream. You also know that the Metropolitan Milk Board sets out a price which you producers must receive for your milk that is sold for consumption as whole milk. That price is 43 cents per gallon. Now, if the merchant pays you a basic price of 37.95 cents lb. fat, the difference between those two prices is a margin to which he is not entitled on anything sold as whole milk. The "levy" is the difference between those two prices, and is at present 27.33 cents per gallon. To arrive at that you take the Milk Board price to the producer of whole milk (43 cents gallon); you convert the 37.95 lb. fat into a gallanage rate (15.67 cents gallon). The difference is 27.33 cents. When the merchant sells whole milk to a vendor or a shop, he gets 27.33 cents gallon that doesn't belong to him. That is the "levy"; but we must bear in mind that this levy is only an interim levy because it is based on an interim basic price.

Once we have that levy we have funds, and that money has to go to the producer. When you sell your milk to the factory you don't know where it has gone—whether to whole milk or cream, cheese, ice cream, milk powder and so on; but you look for your share of the levy. Now let us see from the two examples how we arrive at your share of the levy.

STATISTICS

Each month my office presents a statement to the Committee meeting like the two examples that follow, representing April and October, 1967, one being in the lean period and one in the flush period, so that the extremes of the year are shown.

Taking the April figures (and in both of these examples the figures have been rounded off so that they can be more easily grasped) the first thing the Committee wants to know is . . . "what are the statistics; how much milk came from licensed producers, and what happened to it?"

The April sheet shows the total milk production (or "Purchases") for April 1967, to be 3,068,000 gallons, compared with 3,056,000 gallons in April in the previous year, and the cumulative totals up to the end of April from the beginning of the financial year (1st July 1966), 44,622,000 gallons, and from the beginning of the season (1st January 1967), 14,415,000 gallons, again compared with the corresponding earlier periods.

The daily average production is calculated from the total figures to be 102,267 gallons, and is compared with 101,866 gallons for the same month in the previous year.

Below this is shown the pounds of fat (that is, the actual pounds of butter-fat as tested) in the milk purchased, 1,401,000 lbs., with the month's total for a year earlier and the cumulative total of 19,681,000 pounds since the beginning of the financial year.

The next group of figures shows how much of the total output was sold as whole milk and sweet cream, and again the total sales for the month, 1,828,000 gallons, are compared with the same month in the previous year.

The daily average sales and the cumulative total sales from the beginning of the financial year are also shown in the same way as the production statistics, and compared with the figures for the same period a year before.

Below this group of figures is shown the "Quota %". Quota is rather an unfortunate word, and it is better to look on it as a "percentage." In these two examples it represents the percentage of your total output that is sold as whole milk or sweet cream, and you will see that the "quota" for April is much higher than that for October.

The reason, of course, is that whereas the amount of milk sold varies only slightly from month to month (being perhaps a little higher in the warmer months, but, then, again, tending to be a little lower when school holidays occur) the production varies considerably with the period of the year. Consequently, although the milk sold in October (58,258 gallons per day) is only slightly less than the amount sold in April (60,933 gallons per day) because the production during October is almost twice that during April, the resulting "quota" is down to about half of the lean period month.

FUNDS

Reverting back to the April example we come to the "Statement of Funds", commencing with "Balance from last period." You will realise it is impossible to pay out right down to the last cent, in addition to which it has been the aim of the Committee since its inception to carry forward about \$3,000 for reserve each month. Sometimes it might be \$1,500, sometimes it goes up to \$3,800 or \$4,000, because we don't want to pay out a City Milk Bonus running into many decimals. It is only confusing, makes a lot of work, and \$3,000 held over doesn't mean very much, as you will get it eventually. So we start with a balance left from last month of \$3,000. Here's where the levy comes in, and we will go back to my earlier explanation.

We have some money belonging to the dairymen. The milk levy in April 1967 was 22.91 cents, which is lower than in the October example because, as I have explained, the levy is the difference between the city milk price and the interim basic price, and by reason of the step-ups paid during the year the interim basic price tends to be higher toward the end of the financial year. The cream levy is fixed in the same way at 6.41 cents. Those levies brought in for the month of April \$422,900; in other words that is the result of applying those rates to the "Sales" figures in the Statistics.

In addition to the balance and the levies for the month, we had interest on fixed deposits, in this case \$1,600. This figure is not the actual interest received in April, because the fixed deposits are spread over the year (they are placed at 4½% for 2 years) and sometimes we may receive \$5,000 in one month; another month it may be nothing, next month there might be \$500 due, and so on. So we have smoothed out this fluctuation to show the average monthly interest on fixed deposits, and you will see the same interest figure is shown in October. The amount of money on fixed deposit is \$530,000. To show you why we put it on fixed deposit, you will see that the levy is \$422,900, which the Committee holds for a month. As you know, you have to wait a month for your City Milk Bonus, which the Committee places on a safe interest bearing deposit where we can get it at any time. Other moneys are held on current account at the Bank and also collect interest. This means that, whilst you are without your bonus for one month, you do receive it plus interest.

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ADJUSTMENTS

The "Audit and Other Adjustments" may sometimes be due to factors that should have been included previously. Firstly, as regards the "audit"; when the Auditor reports on a factory's records that milk purchases or sales were understated or overstated, the levy or bonus is either over or under paid and the debit or credit comes into the next month's figures. This example of \$80 again is a round figure which represents the average for the last twelve months. The majority of that is not due to audit. The audit is proceeding smoothly. With only seven merchants involved it is not often we have an adjustment by audit.

The "other adjustments" often come about this way: the returns come from the merchants on the 8th of the month. They are summarised for the Committee. My office does not audit them (nobody could do that straight away) but we do compare them with the previous month and, if anything looks wrong, if the percentage trend of any particular merchant doesn't reflect in the total, we want to know why. We will ring them up and say, "We don't agree with your intake (or your sales)". Then the merchant may ring back next day and say, "We made a mistake; fix it up straight away." Again, and this is probably more frequent, the merchant may send in an amended return three or four days later showing that they found in balancing up that some figures from a Depot were incorrect. So you see that these adjustments come through from time to time, and the figure of \$80 is an average per month.

Our income then is: the balance, levy, interest, audit and other adjustments (although the last item can be a debit or a credit, and we find that overall we give back about as much money as we take in from these adjustments).

Now, how are we to distribute this money? First of all, the levy is imposed on all whole milk sales; but the Committee has to refund part of these levies where the wholesaler does not receive the Adelaide price. These "country sales refunds" in April totalled \$13,100 out of levies of \$422,900; an appreciable amount is paid back on Broken Hill milk, and milk for other country areas when transport costs are high.

Then we have to pay the Milk Board a levy of 0.21 cent gallon. Theoretically this should be paid to the Board by each producer; but, as you know, by arrangement with the Milk Board, it is paid by the Committee under the terms of the Agreement on your behalf and amounts to approximately \$3,600 monthly.

The "Administration Transfer", which amounts to about \$1,200, is paid into Mr. Higbed's office for administration expenses of the Committee including salaries, rent, petty cash and any other expenses that arise from month to month.

The "Accommodation Milk Allowance" is another debit that comes out of your levies before you get your City Milk Bonus. That allowance in April was about \$2,000.

Now if you take \$18,400 from \$428,300 total income, it leaves a balance of \$409,900 for April. Then, when the Committee looks at its "Distribution by Bonus on Purchases", we find we have 1,401,000 lbs. fat intake over which this balance must be spread, and this works out at 29.24 cents per lb. fat, but the "Recommended Rate" (recommended by me as Finance Officer) comes to 28.96 cents, not 29.24 cents, to allow for contingent liabilities. So there is \$4,000 carried over, because at the foot of the sheet you will see "Deduct Estimates of Known Liabilities." There are always some of the country levy refunds and other adjustments, such as accommodation milk claims, not yet in; and so the Committee reserve against these. In this case they amount to \$2,000. So we can safely pay out 28.96 cents, knowing that we can meet these liabilities later, and we can carry over into next month an additional \$2,000.

Taking the month of October, you will see the same set up. Starting with the balance from last month (that is, September) which is \$2,500, there is then the levy at a lower rate than in April, 23.33 cents, because, being only a few months after the beginning of the financial year, the interim basic price is still close to the conservatively low opening figure and this time it totals \$426,000. "Interest on Fixed Deposit" again is \$1,600 and "Audit and other Adjustments"

is again about \$80 (this time a debit). "Country Sales Levy Refunds" is \$7,700.. The Milk Board levy is fairly constant and so is the Administration Transfer. The Accommodation Milk Allowance is \$100 this time. Of course, in this period the merchants require much milk, and comparing April with October you get a picture of the two extremes. Then there is the purely arithmetical calculation here where the rate of bonus, instead of 28.96 cents in April which you got on a small intake of milk, is 17.79 cents because it is paid over a greater intake.

RETROSPECTIVES

Getting back to the Commonwealth Equalisation Committee again, you remember that, when fixing the equalised values for cheese and butter throughout Australia that Committee sets "interim equalisation values." The Commonwealth Equalisation meets quarterly to review the position and every now and then they make what they call a "step-up," or what we more generally think of as a "retrospective increase", in the equalised value of cheese. After the flush, the Committee examines Australian production and sales and the trend of the London market. They may say, "Well now this looks pretty good, we've been conservative: we can see the trend of the season and we will make a retrospective payment on the whole of the cheese manufactured." As soon as this happens, the Milk Equalisation Agreement comes into force and the merchants are bound to, and do, pay into the Metropolitan Milk Equalisation Committee the whole of that cheese increase for distribution to the rightful owner of that money, that is the producer of the milk for that cheese. But remember that the whole of your milk was not made into cheese; some of it was, some went into whole milk. Now, the whole of the money is brought into the Committee's funds and is apportioned over the whole of the licensed milk production so that an amount is calculated and paid to the merchants on each pound of fat received and the merchants are directed to distribute that to each of their licensed producers.

Now I want to emphasise that the retrospective adjustment **in effect** adjusts the basic price and also adjusts the levy. Look at it this way: the Milk Equalisation Agreement reads in effect, "Any time the Commonwealth Equalisation Committee increases the value of cheese, then the merchants shall pay that money to the Milk Equalisation Committee", the principle being that, if that money instead of being a retrospective had been paid at and from the beginning of July, the basic price would have been higher by that value. Therefore you would have had more money right from the start, and the levies would have been lower. So the effect of it is to correct the basic price and the levy respectively.

AUDIT

The last point I want to make is the matter of audit. If I were a dairyman I would say to myself, "Well, we've appointed representatives to this Committee; who checks who?" The answer is quite simple. The records kept by my staff, which involve a lot of trust money (about \$500,000 a month) are checked by the same auditors who check the records for the Commonwealth Dairy Produce Equalisation Committee, namely Messrs. Spry, Walker & Co., which is a definite advantage. Knowing Commonwealth Equalisation, they are fully competent to check our Milk Equalisation plan. Furthermore, it is most desirable to have the same auditors for each plan, as our plan depends on Commonwealth Equalisation. The auditors go through the Commonwealth figures every month, and when they go on to the Milk Equalisation records they have a complete tie-up; they understand the system, and they know what they are doing. My records are also inspected regularly by the Commonwealth Government's bounty auditors.

The merchants' records are audited by the Milk Board Auditor (Mr. Marceau). It seemed to the Committee the logical thing that, as Mr. Marceau had to audit the merchants' records for the Milk Board, he could at the same time do the audit for our plan, and report to our Committee. Consequently he sends his reports to my office showing any adjustments required by the Merchants' records.

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METROPOLITAN MILK EQUALISATION COMMITTEE LIMITED
CITY MILK BONUS — APRIL 1967

Statistics

Purchases	April		Cumulative		January/April	
	1966	1967	July/April 1965/66	1966/67	1966	1967
Gallons	3,056,000	3,068,000	42,409,000	44,622,000	13,492,000	14,415,000
Daily average	101,866	102,267				
Lbs. Fat	1,380,000	1,401,000	18,546,000	19,681,000		
Total Sales						
Gallons	1,761,000	1,828,000	17,482,000	17,481,000		
Daily average	58,700	60,933				
Quota %	57.6%	59.6%				
Cream Sales						
Lbs.	89,000	99,000	875,000	987,000		
Daily average	2,950	3,300				

STATEMENT OF FUNDS AVAILABLE FOR DISTRIBUTION

	Dr. Receipts \$	Cr. Payments \$
To Balance from last period		3,800
„ Levy on whole milk and cream sales—		
Milk at 22.91 cents, cream at 6.41 cents	422,900	
„ Fixed deposit interest	1,600	
By Audit and other adjustments		80
„ Country sales levy refunds (Broken Hill),—April '67		1,800
„ Country sales levy refunds—April '67		11,300
„ Milk Board levy on Metropolitan sales—April '67—		
Milk	1,618,000	galls.
Cream	77,000	lbs.
	1,695,000	at .21 cents
„ Accommodation Milk Allowance—July 1966/Jan. 1967		500
„ Administration Transfer		1,200
	<u>\$428,300</u>	<u>\$18,490</u>
1 cent costs \$14,013.93	18,400	
	<u>\$409,900</u>	
Distribution by bonus on purchases—		
1,401,000 lbs. at 29.24 cents		409,900
Recommended rate of bonus at 28.96 cents (28.74)		405,800
		4,000
<i>Deduct estimates of known liabilities</i>		
Accommodation milk allowance—February/April 1967		2,000
Balance as reserve for contingencies		<u>\$2,000</u>

(Example only, based on approximate figures)

METROPOLITAN MILK EQUALISATION COMMITTEE LIMITED
CITY MILK BONUS — OCTOBER 1967

Statistics:

Purchases	October		Cumulative		January/October	
	1966	1967	1966	1967	1966	1967
Gallons	5,881,000	5,496,000	19,697,000	17,616,000	39,931,000	38,296,000
Daily average	189,709	177,290				
Lbs. Fat	2,560,000	2,333,000	8,643,000	1,617,000		
Total Sales						
Gallons	1,749,000	1,806,000	6,962,000	7,226,000		
Daily average	56,129	58,258				
Quota %	29.7%	32.9%				
Cream Sales						
Lbs.	100,000	105,000	400,000	439,000		
Daily average	3,250	3,400				

STATEMENT OF FUNDS AVAILABLE FOR DISTRIBUTION

	Dr. Receipts \$	Cr. Payments \$
To Balance from last period	2,500	
Levy on whole milk and cream sales—		
Milk at 23.33 cents, cream at 6.83 cents	426,000	
Fixed deposit interest	1,600	
Audit and other adjustments	80	
By Country sales levy refunds (Broken Hill)—Oct. '67		1,100
Country sales levy refunds—Oct. '67		6,600
Milk Board levy on metropolitan sales—Oct. '67—		
Milk 1,652,000 galls.		
Cream 83,000 lbs.		
		3,600
		1,735,000 at .21 cents
Accommodation Milk Allowance—June/Sept. '67		400
Administration Transfer		1,200
	\$430,200	\$12,900
1 cent costs \$23,331.13	12,900	
	<u>\$417,300</u>	
Distribution by bonus on purchases—		
2,333,000 lbs. at 17.88 cents		417,300
Recommended rate of bonus at 17.79 cents (16.17)		415,100
		2,100
Deduct estimates of known liabilities		
Accommodation milk allowance—October 1967		100
Balance as reserve for contingencies		<u>\$2,000</u>

QUESTIONS FROM MEMBERS AS ANSWERED BY MR. GARRETT

Question:

If the Commonwealth Government would put Commonwealth Equalisation in funds so that they could pay out one year behind what they had actually received, wouldn't all this business of retrospective payments, levies, quotas, and what not be greatly simplified; and wouldn't it also be easier for the dairyman, because he'd know much more what he was going to get?

Answer: The Commonwealth Bank advances an enormous amount of money as it is, as cheese is sometimes not sold on the export market for 12 months after manufacture. The cheese is "bought" by the Australian Dairy Produce Board as soon as it is put into export cold store, but the amount of finance involved in getting an earlier payment would be absolutely impossible.

Question:

Could you describe how the present cartage figure is arrived at, seeing that the figure is the same for all factories, whilst we know that there must be a large discrepancy between factories?

Answer: Firstly, the original cartage costs were calculated by the Prices Commissioner after studying the merchants' records at that time. Since then the Prices Commissioner advises the merchants on any variation in cartage rates as determined for the Master Carriers, and the merchants follow that advice in revising the cartage item in the formula.

Secondly, the whole essence of Equalisation is to equalise the disparities between individuals so that each bears the same burden or reaps the same reward.

Question:

If the Prices Commissioner determines the transport costs for all factories, how is it that various factories pay varying contract charges for cartage?

Answer: Assuming your statement is correct, contract charges are a matter between the factories, and the contractors concerned. The varying charges may be due to pressure of competition or to road conditions in the area.

Question:

As accommodation milk requires double handling and therefore increased cost, is this increased cost allowed in the basic price, or is there a reduction made by the Committee in the course of its calculations?

Answer: Double handling certainly does mean extra cost, and the problem did cause a lot of trouble for many years. Eventually it was solved by a compromise between the Dairymen's Association and the merchants by agreeing on an accommodation milk allowance, split 50/50 between the producers and the merchants. However, this is theoretically taken into account by the Milk Board in determining your returns, and ultimately the consumer pays both shares of this accommodation milk allowance.

Question:

Considering that the bulk test is about 4.3 per cent and the calculations are based on 4.0 per cent, do we get paid for this 0.3 per cent?

Answer: The basic price is paid on the actual test from the farm; consequently whatever the test, the producers are paid for it.

Question:

Does the Milk Board's allowances for merchants' costs duplicate costs already allowed in the manufacturing price?

Answer: Certainly not. The fact that the basic price, which is based on the manufacturing formula, is paid on all milk as received, does not mean that the merchant gets a manufacturing margin on that milk. Until it is sold he gets no margin. If it is sold as whole milk, he gets his whole milk margin; if sold as cheese, he gets his manufacturing margin. There is no duplication of margins.

Question:

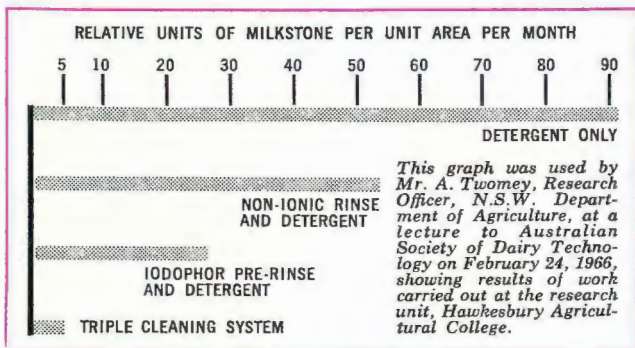
What is the allowance for spillage?

Answer: I do not know the actual allowance for spillage, but when I made an investigation about 20 years ago it was about 2½ to 3 per cent.

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