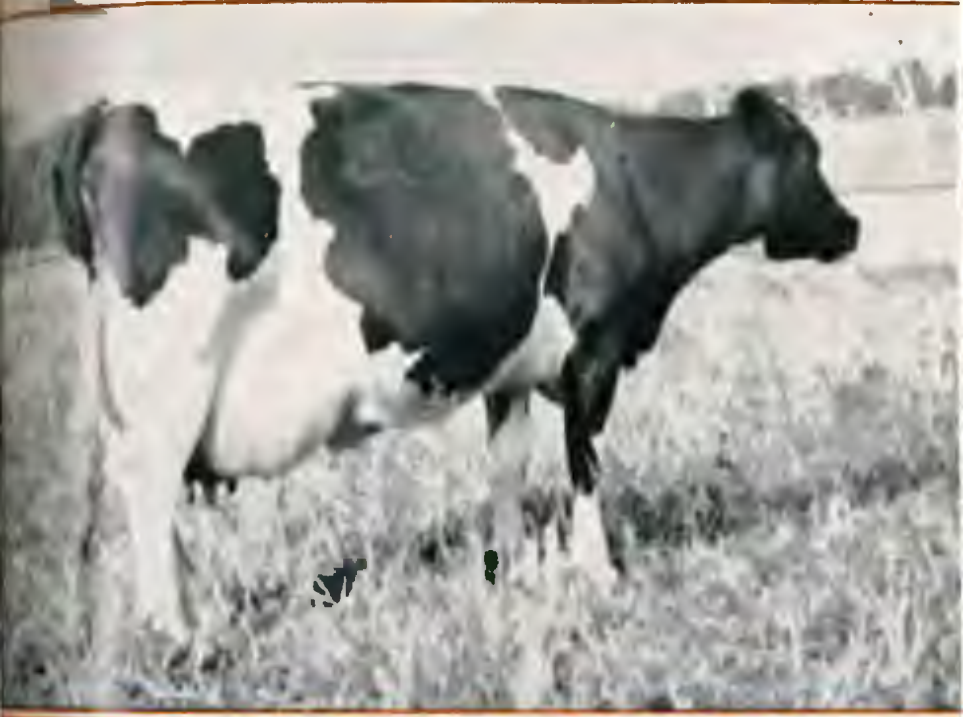
THE SOUTH AUSTRALIAN DAIRYMEN'S . . . Journal

ublication of the

Published Bi-monthly

Vol. 4, No. 4

Adelaide, JAN.-FEB., 1965



—Photograph by courtesy "The Livestock Bulletin"

BELVEDERE PARK I JILL

Holder of the Australian all-breeds record for milk production

owned by A. HUNGERFORD & SONS — POKOLBIN, N.S.W.

PRICE

2/-

Printed by G.P.O., Adelaide

DAIRYFARMERS

. . . HERE'S YOUR OPPORTUNITY!

FRIESIAN CATTLE CLUB OF AUSTRALIA

(S.A. BRANCH)

AUTUMN FAIR

AND SALE

WAYVILLE SHOWGROUNDS

WEDNESDAY, MARCH 24th, 1965

JUDGING COMMENCES AT 9 A.M. — SALE AFTER LUNCH

High class stock will be offered from leading S.A. Breeders

All stock have been examined and passed by our inspectors

FRIESIANS LEAD THROUGHOUT THE WORLD
IN THE EFFICIENT AND ECONOMIC PRODUCTION OF
MILK, BUTTERFAT, CHEESE, VEAL

SEVERAL SOUTH AUSTRALIAN STUDS PRODUCE
OVER 500 LBS. BUTTERFAT PER COW

ENQUIRIES — BOX 646 F, G.P.O., ADELAIDE OR PHONE 51 4951

BELVEDERE PARK 1 JILL

8 y.o. Friesian, who, in 1963, broke the longstanding Australian milk production record of 32,522 lbs. set 40 years previously by MELBA 15th OF DARBALARA, by producing 35,245 lbs., has now eclipsed her own record with a 365 day production of 38,880 lbs. milk, 3.5% test, 1,359 lbs. b.f.

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

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

WORLD DAIRY POLICY REVIEW

A major review of dairy policies in various countries has been undertaken by the Food and Agriculture Organisation's Committee on Commodity Problems.

The Review notes that during 1963/64 the most significant development was agreement reached by the European Economic Community on the general principles of a common policy for dairy products.

The system will establish by 1970 a unified dairy products market in the six countries in which prices will be maintained independently of world market prices by means of variable levies on imports from third countries. The levies will replace all existing quotas, tariffs and other national trade barriers. The common policy will cover the whole dairy products market, but the present regulations do not apply to liquid milk which will be covered by a special regulation to be prepared before July 1, 1965.

The Review says that the 1963/64 dairy year also was marked by **a series of substantial increases in producer prices for milk in Western Europe.** "Further increases have already been indicated in most countries of this region for 1964/65, the Review states. "Target prices for 1964/65 were set higher than the average producer prices of 1963 in all the EEC countries, except France."

The increase is particularly large in Italy and also is high in the Netherlands and Belgium. A 6.5% increase was agreed to in the United Kingdom 1964/65 guaranteed price. Producer prices were put up similarly in Switzerland and Austria, and in Denmark and Sweden, where prices are not fixed by the government, the average price to the farmer in 1964 will be above last year.

The price increases were prompted mainly by the temporary set-back in milk production and a drop in cow numbers which occurred in most West European nations in 1963.

Support prices remained relatively stable in the United States and Canada. As a result of lower milk production in the United States, however, price support purchases fell so that total government spending to support milk and butter fat in 1963/64 was about 25% under the previous year.

In view of improved conditions on international dairy markets, a larger distribution from the trading profits of the Dairy Production and Marketing Board was authorised in New Zealand, providing greater incentives to farmers to produce more.

Except for the EEC measures, the Review says there were no major changes in national trade policies affecting dairy products. The quota system for imports of butter into the United Kingdom was extended to 1964/65 with increased allocations for all suppliers.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1963	1964	1963/64	1964/65	1963	1964
December	4,272	5,015	25,555	28,511	42,550	47,35[illegible]
	1964	1965			1964	1965
January	3,761	4,250	29,316	32,761	3,761	4,250

SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1963	1964	1963/64	1964/65	1963	1964	1963	1964
December	1,607	1,618	9,693	9,943	37.6	32.3	1/10¾	1/7[illegible]
	1964	1965			1964	1965	1964	196[illegible]
January	1,576	1,597	11,269	11,540	41.9	37.8	2/1½	1/10[illegible]

Moving Average Quota for 12 months ended 31/12/64, 42.00%; 31/1/65, 41.64[illegible]

INTERIM PRICES TO LICENSED SUPPLIERS

(All prices are interim only and subject to adjustment by restrospective payment[illegible]

	Basic C.M.B.	Total	3%	3.5%	4%	4.5%	5[illegible]
1964	(per lb. butterfat)		(per gallon)				
December	3/7	1/7⅛	5/2⅛	1/7½	1/10½	2/1¼	2/5	2/8[illegible]
1965							
January	3/7	1/10⅞	5/5⅞	1/8½	1/11¾	2/3¼	2/6½	2/10
Jan. (cents*)	35.83	19.06	54.90	17.00	19.83	22.66	25.50	28.33

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency)

	December		January	
	1963	1964	1964	196[illegible]
Butter—Choicest Australian	334/–	350/–	334/–	334/–[illegible]
Cheese—First Grade Australian	226/–	260/–	226/–	260/–[illegible]
Rindless Australian	234/–	270/–	234/–	270/–[illegible]

* Because of the advantage of being able to compare current prices with those for the corresponding period in the previous year, all prices for 1965 will be shown also in their decimal currency equivalent, in order to facilitate comparisons in subsequent years.

INTERIM BASIC PRICE INCREASED

Highest Since 1956

Although Australian butter and cheese production is continuing at record levels, sales are being well maintained and exportable surpluses are being readily cleared at prices substantially higher than last year.

In view of this position the Commonwealth Dairy Produce Equalisation Committee has increased the current interim average values for butter and cheese by 11/8d. per cwt. in each case.

In the Adelaide metropolitan area the new value will result in an increase of 2¾d. per lb. butterfat in the Interim Basic Price, the rate from 1st February, 1965, now being 3/9¾d.

This is the highest Interim Basic Price since 1955-56, when the rate was increased in February 1956 from 2/6½d. to 3/9¾d., and again raised in May 1956 to 4/2¾d.

To lift the return on all production from 1st July, 1964, to the new rate, a retrospective payment of 2-1/16d. per lb. butterfat (equalised) will be paid early in April.

RECORD PRODUCTION AGAIN IN 1964

One of the most surprising features connected with the Adelaide Metropolitan Milk Supply Area is the fact that during the 12 years from the inception of the Metropolitan Milk Board in 1948 to 1960, production remained virtually static, whilst since 1960 production has increased steadily at the rate of about 10 per cent annually.

During the first 12 years the annual total in every year was within three million gallons either side of 28½ million, and the total for the first full year (1949) of the Board's operations, 30.8 million gallons, was only slightly less than the total of 30.9 million gallons in 1960. Since then the increase has been remarkable:

Year ended 31st December	Production (million gallons)
1961	37.1
1962	39.9
1963	42.6
1964	47.4

PREDETERMINING CALF SEX

Farmers may soon be able to order in advance calves by whichever sex they want.

Experiments are being conducted in the United Kingdom so that farmers can choose in advance whether their cow will have a bull or heifer calf. The Institute of Animal Physiology at Cambridge is carrying out the work which should be completed in mid-1965. The technique being studied involves separating male and female sperms prior to insemination by a process of sedimentation. Under certain conditions, the Institute says, female sperms appear to be slightly heavier. The Institute says it already has had success in work done with rabbits.

The presence in Australia of the Russian circus, which is causing concern to some organisations which question the wisdom of the Federal Government's action in permitting the entry of these animals, even temporarily, makes this article, by Mr. K. S. McIntosh, B.V.Sc., the Director of Veterinary Hygiene in the Commonwealth Department of Health, Canberra, very timely.

Australian Animal Quarantine

GENERAL

Australia is fortunately free of most of the serious contagious diseases of animals present in other countries and the continued prosperity of her livestock industries depends very largely on the maintenance of this position.

It must be remembered that we are in a position somewhat different from many other countries in that we have a very large country with the bulk of our flocks and herds kept under range conditions. Also, we have a numerically small veterinary profession.

For these reasons and the fact that Australia's economy is largely dependent on our livestock industries, it is imperative that every practical effort be made and sustained to exclude exotic diseases which could devastate our livestock.

With the development of rapid means of transportation and a more fluent international trade between countries, the risk of dissemination of animal diseases is much greater today than ever before. It is also worthy of note that at least some and probably most countries do not implement strict disinsectisation of incoming aircraft and so the risk of insect borne diseases being transferred between countries is further enhanced.

We must also remember that disease could be introduced with animals which appear to be perfectly healthy. They may be in the incubation stage of a disease; that is, the period between picking up the infection and the time when they show symptoms. They may have a residual infection or, in other words, they may have recovered from a disease and yet still be infective to susceptible animals. Thirdly, they may be inapparent carriers of infection; that is, they may never show any symptoms but may be carriers of the disease germ or virus.

Added to the aspects already mentioned is the fact that a newly introduced disease may not be diagnosed in a country until it has been there for some time and thus a country may quite conscientiously believe itself to be free from a certain disease when in fact the disease is present but not yet identified. For example, Blue-tongue was present in U.S.A. for years before it was recognised as such.

SPECIFIC RESCTRICTIONS

CATTLE, SHEEP and GOAT imports are, as you know, completely prohibited from all countries. This is popularly or unpopularly known as the "Blue-tongue ban."

The prohibition was imposed by Proclamation under the Quarantine Act and became effective on May 31, 1958, and, as you know, its purpose is to exclude any possible risk of introducing the disease of sheep known as Blue-tongue.

Blue-tongue is a virus disease which was originally confined to Africa but it has spread to U.S.A., certain countries bordering the Mediterranean, to Spain and Portugal, and more recently to Pakistan. Its presence has also been suspected in Japan.

Blue-tongue is primarily a disease of sheep but cattle also harbour the virus when infected, often as symptomless "carriers". For this reason cattle may even be more dangerous as spreaders of the infection than sheep. Transmission from animal to animal is by biting insects such as midges, sandflies and mosquitos, the commonest vector being the midge of the genus Culicoides, of which there are many species in Australia.

The ease and speed by which insect-borne diseases may be disseminated may be gauged by the spread of myxomatosis among rabbits in Australia. For this reason it is considered possible that Blue-tongue may spread from its present locations to other countries.

Because of its insidious nature, particularly in cattle, its presence in a country may not be immediately detected and this is very important. In U.S.A. for example the disease was present for some years and known as "Sore-Muzzle" before its true identity was finally diagnosed.

As previously stated, the disease is transmitted by insects, so that, once it becomes established in a country, eradication is virtually impossible. The U.S.A. has resorted to vaccination but, as you can imagine, the repeated vaccination of Australia's 150 million sheep spread over a wide area, with a costly vaccine which requires very special handling, would place a tremendous burden on the industry, even if it were possible. In addition, the use of this living vaccine sometimes produces serious side-effects such as temporary infertility and the production of "draft" lambs.

The symptoms of Blue-tongue include severe fever, depression, inflammation of the membranes of the mouth and nose with severe ulceration of the mouth and muzzle. As the disease progresses there is swelling of the head, throat and brisket accompanied by discharge of bloodstained pus from the nostrils.

The feet are also affected, causing severe lameness. All these lesions are, of course, susceptible to fly strike which further complicates matters.

Breathing becomes difficult, faeces may be blood-stained and the wool may be shed. Many pregnant ewes abort.

Fifty per cent upward of the flock may be affected, of which up to 90% may die. In U.S.A. the mortality has been lower than this overall, but it is very high in younger animals. It is said by the U.S.A. authorities that British Breeds and Merinos are highly susceptible.

Unfortunately there is no reliable test for Blue-tongue in individual animals and therefore quarantine, even under insect-proof conditions, would not be an adequate safeguard. This is especially so as "carrier" animals, particularly cattle, cannot be detected. Even an island off the coast would not be a satisfactory solution.

Quite definitely there is no likelihood of the ban being lifted in the foreseeable future.

Enquiries have been received from overseas countries, breed societies and individual breeders as to how long the ban was likely to last, but unfortunately our replies have had to be the same as that just mentioned.

With regard to current thought as to whether new blood is required, there is a division of opinion. Certainly we would not require Merino blood, but some cattle breeders feel that it would be advantageous to import fresh blood. On the other hand some geneticists consider that we now have sufficient genetic material in our own cattle for the improvement of breeds or for selection of strains to suit special climatic conditions. However, this aspect

has to be weighed against the risk of introducing a disease which could cause severe losses and prove a tremendous burden on our sheep industry and it is obvious that health considerations must be paramount.

It is interesting to note that a meeting of veterinary authorities from thirty-eight countries met in June, 1961, in Turkey under the auspices of the Food and Agriculture Organisation and the International Veterinary Bureau to consider various serious diseases of animals which were spreading into previously unaffected countries.

A recommendation of that meeting reads—

"That the only certain method of preventing the importation of Blue-tongue into a country free from the disease is the enforcement of an embargo on the importation of all ruminants."

Although Australia was not represented at that meeting, this recommendation summarises our views.

The importation of PIGS is also prohibited. The complete prohibition was first imposed some years ago following reports of a form of Rhinitis of pigs in South Australia known as Inclusion Body Rhinitis. How this entered the country is not clear but it is fairly obvious that it has been with us for many years and that drought conditions in South Australia at the time caused the disease to become apparent. It has since been found as a mild infection in all States.

When I was in England last year, Dr. Done of the Weybridge Laboratories of the British Ministry of Agriculture told me that this disease is quite ubiquitous and wherever there are improved breeds of British pigs, there also is Inclusion Body Rhinitis.

However, there are other and much more serious forms of Rhinitis and the picture is not altogether clear. Added to this, research work seems to indicate that some pigs which have recovered from Swine Fever can possibly be infective to healthy pigs.

For these reasons we have maintained the ban on the importation of pigs.

HORSES may only be imported from Great Britain, Ireland and New Zealand. In this case the reason for the restriction is the presence of several diseases in other countries. Infectious Equine Anaemia, Encephalomyelitis of horses and African Horse Sickness exist in many countries.

In addition, horses must not be shipped through the Suez Canal. This is because an insect borne diseases known as African Horse Sickness has invaded the Middle East where it has devastated the horse and donkey populations in several countries.

DOGS and CATS may only be imported from Great Britain, Ireland or New Zealand. This is because Rabies (or Hydrophobia) is present in many parts of the world but not in those countries. Rabies is not merely a disease of dogs, it also affects man, cattle, sheep, pigs and in fact any warm blooded animal. In South America and U.S.A. it is transmitted by bats, both vampire and insectivorous. It causes losses in livestock in certain countries and is a tremendous public health problem.

Dogs and cats are quarantined in an Animal Quarantine Station when they arrive in Australia and their kennels are disinfected. During that time dogs are treated for tapeworms in case they are infested by species not present in Australia.

This Department has an Animal Quarantine Station at the Capital city of each State.

BIRDS, POULTRY OR THEIR EGGS may not be imported from a country other than New Zealand.

This restriction is designed to prevent the introduction of Newcastle disease and other lesser known diseases which do not exist in Australia.

Although most serious in poultry, Newcastle disease will infect any species of bird and the existence of a "low" form, i.e. a very subacute form of the disease adds to the risk of spread by infected birds which appear quite healthy.

SEMEN AND OVA

Shortly after the Blue-tongue ban was imposed, it was hoped that research work then in progress at Onderstepoort, South Africa, would demonstrate that semen from infected bulls and rams would not contain virus or alternatively that the virus might be destroyed by the usual process of deep freezing.

Unfortunately this has not been so and latest advice indicates that we would be extremely unwise to permit the importation of semen.

The same applies to fertilised ova, but research on this is still proceeding at Onderstepoort. Results will not be quickly available as research work of this nature is difficult and lengthy.

TRANSPORTATION

Perhaps I should mention that such animals as may be imported must come to Australia by sea and not by air.

There are several reasons for this.

I have already said that our sea frontiers form a valuable barrier against incursions of disease and we endeavour to maintain this barrier.

As compared with sea travel, air transport is so rapid it would not cover the normal incubation period of most diseases and an animal could exhibit symptoms after landing. In practical Quarantine any animals coming by sea could be detained or even destroyed on a ship but if they were on an aircraft they would have to be landed promptly whether diseased or healthy, or whether they were eligible to be imported or not.

A further factor is that animals and their manure are attractive to insects and whilst Australian disinsectisation of incoming aircraft is among the best in the world, it would be adding to the risk if we encouraged insects to enter planes at stops en route.

The only exceptions to this general prohibition of animals by air are in the case of fish, oysters, queen bees, laboratory insects and laboratory animals for which special permission has been granted. More recently our legislation has been amended to permit horses, dogs, cats and poultry to come by air from New Zealand only, as the disease status of animals in that country in those species makes this quite safe under the conditions we have laid down.

WORLD OVER-SUPPLY OF DAIRY PRODUCE

FAO Warns Of Continued Danger

A study on the means of adjustment of dairy supply and demand has been published by the Food and Agriculture Organisation in its series on commodity studies.

The report says considerable increase in consumption of dairy products probably could be achieved by substantial reductions in price in certain of the products. "Moderate price reductions would have relatively little effect on the consumption of liquid milk owing to its low price elasticity of demand except among lower income groups," the study says. "Reductions in prices, however, would have a marked effect in most countries on consumption of butter and, to a lesser extent, cheese, for which demand is relatively price elastic."

The FAO report notes that in some countries a two-price system has been used during critical periods with stored butter being released at reduced prices. The introduction of a permanent two-price system, however migh lead to a cut in consumer demand for fresh butter, the report warns.

An increase in butterfat content of dairy products might bring about larger sales of butterfat the report states. In particular, it suggests that increases in the fat content of standardised liquid milk or the abolition of standardisation would result in a larger use of butterfat. An increase in butterfat content or a reduction in the water content of butter is another suggestion for increased butterfat use.

"The most effective means of achieving a better equilibrium between supply and demand seems to be to encourage dairy farmers to move to other agricultural or industrial enterprises," the FAO report says. "This would necessitate an improvement in farm structure. Large consolidated farm units can change more easily to other lines of agricultural production and at the same time can produce milk more cheaply. This, in turn, should lead to lower retail prices and consequently to a higher consumption of price-elastic dairy products.

"The need to restrain milk production is strongest in Western Europe particularly in the countries of the EEC, where the largest increase in milk production is expected. In general, Western European countries have not developed systems for restricting production or for shifting resources out of dairying to other sectors of agriculture or industry. In some countries, e.g. Finland, Sweden and Switzerland, efforts have been made to limit production through pricing, levies on feed and other measures . . .

"But the main problem will arise when France approaches its planned expansion of milk production which will coincide in that case with a declining import demand in the Federal Republic of Germany, Italy and Belgium.

"To change dairy policies in Western Europe admittedly will not be easy, as it will involve changing the structure of an important sector of agriculture in which many small-scale dairy farmers with high production costs obtain their income. It also implies a change in firmly established attitudes regarding the farm population. But all the evidence suggests that, if changes cannot be made, the maintenance of present dairy policies in Western Europe will result in a 'permanent emergency situation' in which the dairy industry, in effect, would become still more a form of public service supported by taxpayers.

SINGLE LEVY FOR DAIRY INDUSTRY APPROVED

In our previous issue we reported that a single levy for dairy produce was being sought by the Minister for Primary Industry, to simplify the financing of the Australian Dairy Produce Board's activities in export regulation and administration, overseas market development, and research and promotion within Australia.

At present funds for the Board's export and overseas market development activities are drawn from levies paid by the exporters of butter, cheese, ghee, butter fats and butter fat products, casein and dried skim milk. Funds for research and promotion activities are paid by the dairy farmer through a levy on butter and cheese production. It has now been agreed that both these levies be discontinued and be replaced by a single levy based on the butter fat content of all commercial manufactured butter, cheese, butter oil, ghee and other butter fat products.

The matter was discussed at separate meetings by members of the Australian Dairy Produce Board; the Commonwealth Dairy Produce Equalisation Committee; the Butter Manufacturers' Association; the Cheese Manufacturers' Association and the Australian Dairyfarmers' Federation before the Australian Dairy Industry Council approved a resolution that the Minister for Primary Industry be requested to introduce the legislation necessary for the implementation of this levy into Parliament. It is hoped that the new arrangement will commence as from 1st July next.

WILL STREAMLINE ADMINISTRATION

Commenting on the industry's decision the Chairman of the Australian Dairy Produce Board, Mr. E. G. Roberts, said that the new system would streamline the operation of the Board and the method of collecting the funds necessary for its many operations. As the activities and responsibilities of the Board increase, the present system of collecting different levies for different aspects of its work tended to be somewhat cumbersome.

Mr. Roberts emphasised however, that under the new legislation sought no section of the industry would be liable to pay more in levies than is the

case under existing agreed arrangements. Furthermore, although funds will now come to the Board from one source, monies for research and promotion within Australia, and the Board's export and overseas market development activities will be kept separate and distinct and will not be interchangeable. The new proposed levy rate takes into consideration the recent decision of the Australian Dairyfarmers' Federation to authorise the Board to seek an increase in the funds made available by the dairyfarmer for the Board's research and promotion activities.

RATES

The industry is asking that the uniform levy be a maximum of 6/- per cwt. of butter fat. Initially, in accordance with the current operative export levy and the increased research and promotion levy, it is anticipated that the operative rate will be 5/- per cwt. of butterfat.

Mr. Roberts said that the total revenue from levies depend upon production. Forty per cent of revenue would be allocated to promotion, 20 per cent to research (which will be subsidised on a £ for £ basis by the Commonwealth Government) and 40 per cent for export regulation and overseas market development activities.

The Minister for Primary Industry will be requested to incorporate in the new legislation provision for implementing a production levy on the non-butter fat products of casein and skim milk powder.

The legislation will ensure that there is no "doubling up" of levies for products made from butter on which the butter fat levy has already been paid.

No postage stamp re
posted in Austra

BUSINESS REPLY POST
Permit No. 182 issued at Melbourne

Postage and Fee will be paid on delivery to

The Branch Manager
THE FEDERATION INSURANCE LTD.
Box 1758-N, G.P.O.
ADELAIDE, S.A.

FOLD HERE

THE FEDERATION INSURANCE LIMITED

(Inc. in Victoria)

GENERAL INSURANCE SERVICE SLIP

Save up to 4/4d. in the £

THE MANAGER,
THE FEDERATION INSURANCE LTD.
63 WAYMOUTH STREET,
ADELAIDE.

Please issue a cover-note for the amounts indicated and send your inspector to complete the insurances.

CLASS OF INSURANCE	PARTICULARS	AMOUNT
FIRE (On Buildings and Contents)	On Building of Dwelling.....	£.....
	On Contents of Dwelling.....	£.....
	On Farm Building used as.....	.....
	.....	£.....
	On Contents of Farm Building used as.....	£.....
	On.....	£.....
FIRE (On Livestock)	On.....Sheep	£.....
	On.....Cattle	£.....
	On.....Horses	£.....
	On.....	£.....
FIRE (On Machinery)	On Tractor	£

	On.....Boiler	£.....
	On.....	£.....
FIRE (Hay) Stack 1	On.....Tons of.....Hay	£.....
FIRE (Fencing)	On.....Miles.....Chains @.....p.m.	£.....
	On.....Miles.....Chains @.....p.m.	£.....
WORKERS' COMPENSATION	General Farm Hands' Estimated Wages	£.....
	Shearers' Estimated Wages	£.....
PERSONAL ACCIDENT INSURANCE	£.....per week : £.....Death	£.....
PERSONAL ACCIDENT AND ALL SICKNESS	£.....per week : £.....Death	£.....
PUBLIC LIABILITY INSURANCE (FARMERS)		£.....
PUBLIC LIABILITY INSURANCE (PERSONAL)		£.....
MOTOR VEHICLE COMPREHENSIVE	On.....Sedan, Reg. No.....	£.....
	On.....Ute., Reg. No.....	£.....
	On.....Truck	£.....
	Carrying Capacity.....Reg. No.....	£.....

NAME IN FULL (Block Letters).....

ADDRESS (Block Letters).....

I am a Financial Member of.....

(State name of Organization of which you are a member)

DATE.....

SIGNATURE.....

Progress And Improvement In Milking Machine Cleaning

By W. G. WHITTLESTONE, Senior Principal Scientific Officer, Ruakura Agricultural Research Centre

Dr. W. G. Whittlestone, well known as the scientist responsible for the development of the "Ruakura Formulation" which is now in almost universal use for cleaning milking machines, returned to New Zealand after several valuable years in Australia. As this report, recently received from Dr. Whittlestone, shows the wide acceptance of his earlier process has not prevented him from continuing to seek even better, quicker and cheaper methods of cleaning and sanitising milking machines.

A clean milking machine is needed to produce clean milk. One of the biggest problems in keeping a machine free of bacteriological contamination is to prevent build-up of milkstone, a deposit varying in composition with the kind of water and system of cleaning used.

A wide variety of bacteria can flaurish in the organic matter content of milkstone, the main constituents of which are casein, butterfat, and a variety of salts, some coming from the water and others from the milk.
Depending on its history, it may be hard or soft.

Some of the constituents dissolve in alkalis, others in acid; thus it is quite a problem to design a cleaning system that will dissolve the deposits completely.

The Ruakura cleaning system introduced some years ago consisted of using a high-quality balanced alkaline detergent on six days a week and on one day a speciol acid detergent.

This was at the time the best cleaning system tested at Ruakura.

However, it has been the experience of those responsible for the control of milk quality in New Zealand and in Australia that farmers are loath to use a system that requires a change one day a week; what is needed is a system that is the same every day.

This article describes a system which has eliminated the need for a separate acid cleaner and is based on the principle of using an acid sanitiser before milking and a standard alkaline detergent after milking.

EMERGENCE OF IODOPHORS

In recent years a new class of sanitisers has evolved, known as iodophors. These are loose complexes of iodine and certain organic wetting agents.

They are usually made up in a solution of dilute phosphoric acid; thus in addition to the iodine (which is a very effective disinfectant) they contain wetting agents which are good detergents and, sometimes, phosphoric acid.

The iodophor recommended for routine use in the cleaning of milking machinery should not contain less than 1.70 per cent of active iodine in the concentrate, and the phosphoric acid concentration of the latter should not be less than 10 per cent or more than 15 per cent.

RUAKURA FORMULA STILL THE "BEST BUY"

When used as a pre-milking rinse the concentrated iodophor is diluted to give a level of 25 parts per million of iodine.

For udder washing and cup dipping the solution should contain 50 parts per million of iodine.

Despite a lot of research and testing it has been difficult to improve on the original Ruakura alkaline formula.

While a more expensive formulation can be devised which will give better performances, on the basis of value for money the original Ruakura alkaline detergent remains the best so far tested.

COMPOSITION OF STANDARD ALKALINE

The composition of the standard Ruakura alkaline detergent is as follows:

Sodium metsilicate, 20 to 30 per cent. by weight.

Sodium hexametaphosphate, not less than 10 per cent.

Wetting agent (active material as percentage of total formula), not less than 4 per cent.

Soda ash, 56 to 66 per cent.

The metasilicate in the formula is pentahydrate. Correspondingly less of the anhydrous material may be used, but unless there is some special reason for it, the pentahydrate is the most satisfactory because of the speed with which it dissolves in hot water.

The formula may be improved by using equal quantities of a non-ionic wetting agent such as Lissapol N450 and an alkylarlsulphonate such as Santomerse.

Such a mixture gives an improved performance because of synergism, in which the two different wetting agents as it were assist each other.

When the detergent is designed specifically for circulation cleaning, it is probably desirable to use only the non-ionic wetting agent, as this reduces the tendency to foam.

Procedure For Cleansing

The cleaning procedure recommended, using the above detergent and iodophor, is as follows:

1. Before milking, make up a solution of standard iodophor at the rate of a quarter ounce to the gallon of cold or slightly warm water. Rinse with half a gallon of this solution to each set of cups and allow the solution to drain from the machine while the cows are being brought in.

2. As the last cows are milking out and the cups become available, scrub the cups and claws in hot detergent solution and rinse with a hose if this is available.

3. Rinse the machine with not less than one gallon of cold or slightly warm water per set of cups, starting at the releaser end. Use two gallons of water for the set of cups farthest from the releaser.
Note: The rinsing of the machine may be made more efficient by adding a quarter ounce of non-ionic wetting agent (lissapol N450 or similar compound) to three gallons of rinsing water.

4. Wash the machine with one gallon of hot standard alkaline detergent (a quarter ounce of Ruakura-type alkali per gallon) per set of cups, again starting at the releaser end and using two gallons for the farthest set.

   Do not break the vacuum at any stage during cleaning until the hot detergent has gone through. Breaking the vacuum opens the seals in the releaser, sight glosses, etc., and makes thorough cleaning impossible.

   It is, however, a help to lift the cups from the solution for a moment or two once or twice during rinsing. This is called air brushing and improves the efficiency of cleaning. However, it must not be done in such a way that the vacuum drops below about 10 in. of mercury.

5. If brushing is necessary, the vacuum may be broken after the hot detergent has gone through and the droppers and milk pipe may be brushed.

6. Finally, rinse the machine with really boiling water at one gallon per set of cups, starting at the releaser end and again using two gallons of boiling water for the last set of cups.

Because the boiling water temperature is greatly reduced at a vacuum of 15 in. of mercury, much of the heat of the final rinse is lost as steam which passes through the plant without doing much good.

It is possible to reduce this effect substantially by dropping the vacuum to about 7 in. during the final rinse. This raises the temperature of the rinsing water and sterilisation is much better.

RESULTS OF FIELD TRIALS

Extensive field trials have shown that the system of cleaning outlined will cause less corrosion on tinned components than the original hot caustic soda system or the earlier Ruakura acid-alkali cleaning method.

Further, it has been shown definitely under a wide variety of conditions of water supply and types of machine that the iodophor-alkali system prevents buildup of milkstone more effectively than any of the systems previously tested.

Finally, the iodophor prerinse reduces markedly contamination of the milking machine by what are called thermoduric bacteria.

Such bacteria lurk in milkstone deposits and, being resistant to heat, pass through the pasteuriser and cause many troubles in the subsequent processing of the milk.

When the final rinse is not of adequate temperature or a good sanitiser is not used, the thermoduric type of bacteria tends to survive in the machine because it can resist the temperature of rinsing water which is not boiling.

Thus the machine becomes an incubator, as it were, for this very undesirable class of bacteria.

Iodophors, however, kill all classes of bacteria, and so the pre-rinse is a guarantee that if any organisms have survived the boiling rinse after the previous milking, they will be satisfactorily reduced in numbers by the rinsing of the plant before milking.

(N.Z. Journal of Agriculture)

The Metabolic Diseases Of Dairy Cows

(Recognition And Treatment)

By Dr. K. C. SELLERS, Ph.D., B.Sc., M.R.C.V.S., D.V.S.M.
Director, Livestock Research Centre, British Animal Health Trust Farm

Despite a general improvement in the health of cattle, they are still subject to metabolic diseases, mainly milk fever (hypocalcaemia), grass tetany (hypomagnesaemia) and ketosis (acetonaemia) which have possibly increased as a result of higher milk yields and improved methods of feeding and management.

The increase can also be associated with the extended life span of the milking cow due to effective control and treatment of infectious diseases. Research work is pursued vigorously, but although much is known about treatment, reliable methods of prevention are still sought.

MILK FEVER usually occurs within 72 hours of calving and without prompt treatment a cow will become unconscious and die.

Treatment consists of calcium borogluconate injections which raise the low blood calcium values typical of the disease.

Ususally one treatment is sufficient, and cases which relapse generally respond to a second injection.

In stubborn cases the udder may have to be inflated—a thing which needs extreme care to avoid damage to the mammary tissue with consequent mastitis.

In America diets high in phosphorous and low in calcium have sometimes reduced the incidence.

BEWARE OF SIDE EFFECTS

This type of diet appears to stimulate the calcium turnover in the blood, warding off milk fever, but it can present formulation difficulties and have undesirable side-effects.

Massive doses of vitamin D just before calving may also be successful but large doses of it may damage large blood vessels. So there is no certain way of preventing milk fever. The stockman must learn to recognise early signs and apply treatment without delay. The disease sometimes seems to run in family lines so a knowledge of each cow in the herd can help in anticipating trouble. Excessive steaming up should be avoided.

KETOSIS affects dairy cows and is sometimes known as acetonaemia and in the North of England as "Slow Fever". Complex chemical substances, known as ketone bodies, are present in the blood and are passed out in urine and milk. Though non-infectious ketosis is a serious cause of financial loss and worry to the dairy farmer, for not only is the milk yield reduced for a time but the cows may never reach their expected yield in that lactation.

In milder cases with smaller reductions in yield, the milk is unfit for human consumption because of an unpleasant smell and flavour.

Ketosis usually occurs within a few days to six weeks of calving and will probably be first noticed when the cow refuses her concentrate ration, and her milk yield declines.

As the illness worsens the characteristic "acetoney" smell is noticed in the breath, milk and urine, together with a much reduced milk yield and appetitie, and a craving for roughage. With proper treatment most cows recaver, but some do not respond and lose condition with almost complete cessatian of milk flow.

Symptoms are widely varied and it is important to distinguish between true or primary ketosis and ketonaemia resulting from some other illness.

Infection of the womb (metritis) after calving will often cause an illness resembling ketosis, as will the presence of a foreign body in the stomach or displacement of the fourth stomach. In fact any condition which makes the cow ill and refuse food may result in ketosis-like symptoms.

Primary ketosis is best diagnosed by a careful clinical examinatian of the cow, taking into account feeding before and after calving, quality of the food and milk yield.

Ketone bodies can be detected in milk and urine by simple chemical tests which give a colour reaction the intensity of which can often indicate the severity of the case.

These substances can also be detected in the blood by more elaborate tests. Simple tests for milk and urine, suitable for use on the farm, are available. In these the testing agent is a powder or tablet which can be wetted with milk or urine. The value of a paper strip impregnated in the reagent is now being assessed, and shows promise as a more convenient method because the strips can be dipped in the milk or urine. Alternatively a stream of milk can be drawn on to the paper.

All these tests help prompt diagnosis and treatment.

The cause of ketosis is obscure but research indicates some upset in the cow's ability to deal with the complex fat-carbohydrate energy release mechanisms.

This results in accumulation in tissues and blood of poisonous ketone bodies and the cow becomes ill.

Treatment is to raise the carbohydrate (sugar) level of the blood and tissues by giving glycerine or proprionates by mouth, and injections of hormone-like preparations.

In some farms of ketosis the cow may show nervous signs and then sedatives must be used. Exercise often helps and one may need to halter the cow for forced exercise rather than just turn her out to grass. The sick cow also needs plenty of water, good quality hay and should be tempted with mashes. Molasses are worth including in the mash.

Much field and laboratory work is still required in this disease, many aspects of which remain unexplained. It occurs more in some breeds than others and some cows in a herd are more prone than others even if managed and fed similarly.

In some occupied countries of wartime Europe, ketosis increased markedly in cows fed on diets deficient in energy, pratein, minerals and vitamins. Even in Britain today cows on a poor diet during pregnancy and early lactation are susceptible.

The fact that ketosis was less frequent last winter suggests that cows deprived of winter and early spring grazing were necessarily fed more hay, silage and concentrates than normal.

Ketosis is also more likely to occur in the highly productive cow being forced by high level feeding. This can be avoided by careful rationing in the latter part of pregnancy, including roughage in the form of good quality hoy, and avoiding heavy concentrated feeding during the first month after calving.

Whatever the basic cause of ketosis, careful husbandry with good quality food and gradual changes of feeding levels are essential in reducing the occurrence of this rorely fatal but economically damaging disease.

GRASS STAGGERS (hypomagnesaemia) occurs when there is a drop of the magnesium in the blood. It is common and is sometimes called grass tetany or lactation tetany.

In dairy cattle it is usually associated with change from winter feeding to young rapidly growing spring grass, but it sometimes occurs in autumn when there is a flush of grass on aftermath.

The pasture may also play a part. Some grasses, especially rye-grass, are low in magnesium and, if stimulated by excessive applications of nitrogenous and potassic fertilisers, the incidence of the disease may rise.

Signs of hypomagnesaemia in dairy cattle include increased excitement followed by recumbency when the animal may show periodic "fits" (tetanic spasms).

Treatment is by injection of magnesium salts and provided diagnosis is prompt, recovery is usually uneventful. This disease may be prevented by ensuring that each cow gets 2 oz. calcined magnesite a day during periods of risk (spring or autumn). This may be included in the concentrate ration, mixed thoroughly with the food or spread on silage before feeding.

Increased intake of magnesium can also be achieved by applying calcined magnesite to the pasture in winter and early spring, but expert advice should be taken, for the amount needed varies with the type of soil formation.

The disease can be accentuated if nitrogenous and potassic fertilisers are used together. It is worth while dressing with nitrogen in spring and delaying any dressing with potassic phosphate until late summer.

GENERAL CONCLUSIONS

Milk fever may be complicated with a drop in blood magnesium and grass staggers by a drop in blood calcium. General practice is to use mixed injections which contain calcium borogluconate magnesium salts and phosphates, thus avoiding these complications.

These three diseases show a marked seasonal incidence and national surveys indicate that milk fever is most frequent in autumn, ketosis in late winter and grass staggers in spring and autumn.

They are more likely in highly productive cows and it is worth considering the newer feeding methods aimed at economic rather than high milk production.

First Professor Of Dairying In Australia

SYDNEY UNIVERSITY APPOINTMENT

Appointment of the first Professor of Dairying at the University of Sydney or any other Australian University in Australia has been made by the Senate of the University of Sydney.

He is Dr. A. K. Lascelles who has been Acting Director of the Dairy Foundation Research Laboratories at Camden for the last 12 months. Prior to this appointment he was Senior Research Fellow in the Department of Animal Husbandry at the University.

Professor Lascelles, 34, is married with four children. He obtained his Ph.D. degree at the Australian National University for a thesis on the physiology of the lymphatic system in lactating animals. He obtained his M.V.Sc. from Sydney University in 1956.

Recent research projects being conducted by Professor Lascelles include the formation of milk and its ingredients pathology of mastitis and the movement of milk in its ingredients inside the udder of a cow.

Professor Lascelles is the first Professor of Dairying at the University of Sydney or any other Australian University.

The new Chair is in the Department of Animal Husbandry, under the Head of the Department Professor T. J. Robinson. Professor Robinson, in commenting on the appointment, said it was a major advance in animal husbandry and research in Australia. It had been made possible by the development of the Dairy Husbandry Research Foundation and the Research Unit on the University Farms at Camden.

NEW ZEALANDERS ASKED TO EAT LESS BUTTER

So that there would be more butter to export, New Zealand consumers, who now eat 43 lb. of butter a year, are being asked to eat less, so that more can be exported. This is a contradiction of Australian policy, where the consumption is slightly below 24 lb. a head.

Chairman of the Dairy Production and Marketing Board of New Zealand (Sir Andrew Linton) said some of the 50,000 tons of butter sold annually on the local market should be diverted to the export market to improve overseas exchange.

New Zealanders ate about 43 lb. a head a year. If this was brought down to about 40 lb., overseas exchange would increase by about £1,250,000 a year, he said.

NO GAIN TO INDUSTRY

The dairy industry did not stand to gain anything from such a move, except a stronger position on world markets, said Sir Andrew.

The number of New Zealand dairy farmers was declining each year, he said. Cow numbers were rising, and for the third successive year, the Dairy Board hoped for record production.

A.B. Board Newsletter

BARRIERS TO A.B. FOR SHEEP

The U.S. sheepmen's journal "The Shepherd" states "How rapidly artificial insemination becomes practical in the sheep industry will depend in part on the success of the scientists in finding ways to preserve the semen of the rom after it is collected."

In studies at Louisiana State University 38 "extenders" were tested as semen diluents. The one showing the greatest percentage of live sperm at the end of five days contained two parts cow's milk (the cow will always be necessary!), one part glycine, one part egg-yolk. Next best was composed of two parts ewe's milk and one part egg-yolk.

CONCEPTION RATES IN N.Z.

The Auckland Herd Improvement Association's artificial breeding service inseminated 272,672 cows in 4,434 herds in its 1963-64 semen. The percentage of cows in calf was 76.5 and the percentage of successful first inseminations 64.3.

Deep-frozen semen was used for inseminating 4,092 cows, and the percentage of successful inseminations was 51.9.

It is heartening to note that in South Australia the percentage of successful inseminations with deep-frozen has never fallen below 55, but it is important also to note the number of artificially inseminated cows per farm. Whilst we may never hope to achieve figures comparable with the average of 62 cows per farm quoted in this example, we must aim for a much higher average per farm than is at present being serviced by A.B. if the cost of the scheme is to be maintained at an acceptable level.

SOUTH AUSTRALIAN BULLS FOR N.S.W. A.B.

Four bulls were recently dispatched from this State to the Artificial Breeding Centre at Berry in N.S.W.

They were: Mr. M. McKenzie's Jersey bulls—VYNETTE GOLDFINDER 2ND and VINETTE CHEERFUL PREMIER; Mr. C. Cockshell's Friesian—HEMAFORD SUPERIOR CADET; and Mr. W. S. Polkinghorne's—CLAIR-ROY CUTIE PRINCE.

When these bulls take their places in the Berry Centre more will be written of their pedigrees and their links with S.A. herds and the A.B. Services.

A.B. PROGENY TOPS A.I.S. SHOW

Mr. R. K. Llewellyn, of Lyonga A.I.S. stud, Mypolonga, judging at the annual Nowro (N.S.W.) show gave first and second place to A.B. bred progeny in the Sire's Progeny group.

First place went to the progeny of TABBAGONG BEAUTY'S DESIGN and second place to those of PARK VIEW ELECTRA, both these sires being on the list at the Berry Centre.

BUREAU MEMBERS VISIT THE BULL CENTRE

Members of the Agricultural Bureau have been showing interest in the activities of the A.B. Centre. Recently members of the Koonunga and Inman

Valley Branches attended in good numbers and expressed pleasure at what they saw.

On March 2nd Hope Forest Branch is due to visit and on March 9th the Upper Yorke Peninsula-Boors Plains members will be present.

Questians are answered, the procedures demanstrated, and the whole Centre made open for inspection in a refreshingly informal manner, the Bureau members themselves setting the atmosphere.

MODERN DAIRY MAKES PROVISION FOR A.B.

On February 25th a wonderful day was held on the farm of Mr. P. W. Mieglich, Lobethal, where a dairy built for the future had one additional modern feature—a special shed for housing the cows awaiting the inseminator.

Senior inseminator Mr. J. C. Palmer commended Mr. Meiglich for his foresight in providing facilities aimed toward the best possible results with A.B.

Repeat inseminators cost money—to the Board and indirectly the industry—and mean more work for the dairy farmer.

Good environment, absence of stress and o warm comfortable cow which is well fed lead to good results in A.B.

One major point was that the owner hod consulted the Artificiol Breeding Board before he built his new dairy.

At the field day attended by 125 people, the senior inseminator said of Mr. P. W. Mieglich and his pure-bred commerciol herd of Friesians, "We feel that, by stabilising the environment for insemination, he had gone a long way in improving conditians which con be improved. I congratulate him on adopting and corrying out the ideas you see here."

BAROSSA VALLEY A.B. AREA DEFINED

At the recent annual Agricultural Bureau Conference in the Barossa Valley those present heord of the boundories likely for the new sub-centre for A.B.

The area is roughly bounded by Angoston, the Angoston-Keyneton road and its continuotion, south. The southern boundary is obout eight miles south of Eden Valley, and the western side in the region of Tanunda Creek.

The area excludes very few formers who replied to the Board circulor but it does not include many small farmers outside the areo who probably wish to use the service. The Boord does not wish to contact these people at present, but when a technician commences operating, he will then be oble to assess how far he can extend the area.

No one wishes the farmer to blindly follow recommendations nor to cease trying his own methods, inventions or voriations.

He must not follow like a sheep, but can accept the practice of adopting A.I. with confidence using a scientifically proved practise.

Here is an item about sheep taken from "The Shepherd", the U.S. Journal for working sheepmen, for growers, feeders and sheepraisers everywhere:

> "How rapidly artificiol insemination becomes practical in the sheep industry will depend in part upon the success of the scientists in finding ways to preserve the semen af the ram after it is collected."

ACTION AGAINST FOOT-AND-MOUTH

The Association has, during the last two years, collected a frightening dossier of what could happen to the country's economy if foot-and-mouth disease ever became established, and we have also gathered a convincing amount of evidence from recognised authorities that indicates that the quarantine precautions used by the Commonwealth Government are nowhere near adequate for our peace of mind in this matter.

We must, therefore, welcome the recent statement by the Federal Minister for Health, Mr. Swartz, that in future the footwear of **some** overseas travellers will be disinfected, "in an effort to guard against the introduction of foot-and-mouth disease into Australia." Mr. Swartz said that the Department of Customs and Excise was issuing amended Passenger's Baggage Declaration forms to include questions whether the travellers had been on any farm, abattoirs, or meat packing establishment, or in contact with farm animals, in the previous three months and, if so, in what countries. He said that where the risk of foot-and-mouth disease might be present the passenger's footwear would be disinfected at the part of disembarkation.

Primary producers may be permitted to wonder whether, in view of the proven readiness of travellers to evade quarantine precautions, the questionnaire will be answered honestly, considering that an honest answer may result in the inconvenience of having one's footwear disinfected. We may also ask whether the quarantine authorities are satisfied that, where a traveller's footwear is suspect, the floor coverings in the aircraft or ship, and the footwear of fellow-travellers do not constitute a possible source of infection.

We can query also the wisdom of allowing the entry into Australia of the Russian circus. We are assured that all precautions have been taken, and that no animals subject to f-and-m will be brought in with the circus. But does this remove all danger? Rinderpest, as well as f-and-m, is endemic in Russia (an outbreak of rinderpest in Cuba has been traced to the recent importation of Russian cattle) and although the animals in the circus may not be susceptible to these diseases, they have been in contact with animals that are susceptible and there appears to be practical difficulties in adequately disinfecting such animals as bears. Mere exclusion of susceptible animals is not enough, when we recall Hungerford's statement, that " . . . birds, particularly starlings, have transmitted the disease over considerable water barriers in Europe."

THE SOUTH AUSTRALIAN DAIRYMEN'S . . .

Journal

Publication of the

Published Bi-monthly

Vol. 4, No. 5

Adelaide, MARCH-APRIL, 1965

GALAVIEW GAY FRASEA

...re ...om Top-producing N.S.W. Stud

...B. HUMPHRIS — "SWAN LAKE" — MENINGIE

PRICE

2/-

...G.P.O., Adelaide,

... by post as ... ord...

12/- per Year, Post-Paid

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

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

N.F.U. ASKS FOR COST STABILITY

The following submission was made recently by the National Farmers Union of Australia to the Commonwealth Economic Sub-Committee at the invitation of the Prime Minister.

The opportunity to convey at first hand our views on the Australian economy is accepted once again with appreciation.

During the six months which has passed since the occasion of our last coming together costs have increased. The general level of prices paid by farmers rose by at least 2 per cent during this period and it seems unlikely that the stability in prices paid for farm requisites, which has characterized the last few years, will continue in 1964-65. Despite an expected increase of approximately 5 per cent in the volume of rural production this year, the change in export prices for wool, sugar and some cereals could force the gross value of rural production below last year's level of £1,690 million.

A good deal of the success of recent years in overcoming labour shortages on the farm and in increasing production in order to overcome lower product prices, has only been possible through a run of good seasons. When that run will end, no one would care to guess but end it will some day. Whether the current dry conditions in New South Wales, Queensland, Western Australia and parts of South Australia are portents of a drought to come it is too early to say yet, but the rural economy is bound to reflect its toll at such a time. The current level of rural prosperity has to be seen then against the background of probable future downturns.

We are concerned about the implication of the increase in the Consumer Price Index for wage levels and, through these, to other costs. Australian wage determination methods are not happily designed, as is widely accepted, to deal with such a price increase with equity and discrimination. Cost stability which means a great deal to every Australian, is all too short-lived.

—GALAVIEW GAY FRASEA—

The Galaview stud of J. V. Plattfuss, Finley, topped the N.S.W. 1963–64 test season for all breeds with the highest average figures ever of 568 lb. butterfat, 14,983 lb. milk per cow. This typical young Galaview bull is by the outstanding sire G. ROYAL FRASEA out of the Melbourne Royal prize-winner (1960—2nd, 1961—3rd, 1962—1st in age group, 1st for type and utility) G. ROYAL GLITTER, currently producing over 700 lb. butterfat. His grandsire was the N.S.W. Milk Board's Canadian importation FRASEA LORD JEWEL.

We urge the Government therefore to encourage the Commonwealth Conciliation and Arbitration Commission to give full weight to this factor in the forthcoming Basic Wage Case. We look to the Government to participate in this case in a way which will oblige the Commission to base its conclusions on economic criteria alone.

In several sections of the economy over the last six months, imported requirements have supplemented local supplies which were already in demand. Not only has this reduced time lags in delivery but, also, the inflationary pressure created by a bidding-up of scarce labour and materials.

In the present tight conditions for labour, especially skilled labour, we ask the Government to exercise discrimination in the timing of its public works projects and, where possible, to prune employment in the public sector taking this into account in forming the next Budget estimates.

We are encouraged to note that a number of Australia's international customers for primary products are at last finding better opportunities for selling in Australia and reducing the strain on their overall Balances of Payments. We welcome this development and express the hope that the Government will refrain, except in cases of urgent necessity, from handicapping imports from France, Italy, Japan and Mainland China. We are fully aware that our own balance of payments must also be considered.

We look forward to initiatives by the Government for fostering trade with the developing countries of Asia. We see value in promoting Asian living standards as far as possible, not only with an eye to developing new markets comparable perhaps to Japan, but as an investment in Australian long-term defence.

A good deal of careful thought has been given by the appropriate Ministers to legislation on restrictive trade practices and this is to be welcomed. However, an unusually long time has now elapsed since the announcement of the Government's plans on this matter and we hope that deeds will soon replace words, and the relevant Bill introduced and subsequently made available for appraisal by interested parties.

We commend the Government for its apparent promptness in negotiating arrangements for reducing petrol prices in country areas. Not only country residents but all travelling Australians, will await the commencement of the scheme with interest and anticipation.

We trust that in designing some of its new defence projects, the Government will strive to achieve long term benefits where possible. Could consideration be given, for example, to the strategic value of modern railways in northern Australia.

With the growing need for foreign exchange for payments under defence contracts, the export industries will be required to sell even more successfully against overseas competition. It is to be hoped that the Government will regularly and actively consider steps which it may take to preserve the level of Australia's internal cost structure thus minimizing the handicaps on export activity, whether primary or secondary in nature.

RELIEVE **CALF SCOURS** IN HOURS WITH NEW '**NEFTIN**' TABLETS

Scours can strike — and spread quickly — at any time, on any farm, even a w
kept farm. Bacterial scours are the greatest health threat to your stock investme
overnight, a scours outbreak can turn profits into losses. Prompt, effective, 'Nef
treatment is essential if your losses are to be kept to a minimum.
Time is the big factor — both for the infected animals and to prevent spread of
disease to others. 'Neftin' tablets work fast. Relief is apparent in a matter of ho
and calves recover in a day or so.
With 'Neftin', there are no future problems of bacterial resistance as there
to sulphas and antibiotics. And 'Neftin' is only half the cost of broad-spectr
antibiotics when used for a full 3 day course of treatment.
But 'Neftin' is so effective that just two doses, twelve hours apart, are of
sufficient.
Your veterinary supplier will advise you that 'NEFTIN' tablets are the mode
effective, economical treatment for calf scours.

Smith Kline & French Laboratories (Australia) Ltd.,
Warringah Road, French's Forest, N.S.W.

SK&F

SKF21a.6

PASTURE ESTABLISHMENT ON DEEP ACID SANDS IN THE ADELAIDE HILLS

As a result of work carried out by both the Waite Institute and the Department of Agriculture, we now have far more knowledge regarding steps towards the successful establishment of pasture on the "problem" deep acid sands. It is estimated that there are about 100 sq. miles of this type of country in the Southern Hills districts, a large proportion of this being in the Mt. Compass area, and also extending to areas such as Tooperang, Ashbourne, Finniss, Goolwa, Waitpinga, Inman Valley and Back Valley.

ARE THESE DEEP SANDS WORTH DEVELOPING?

This question has often been asked and until recently the answer could well have been—"No, they are not." But if we consider the location of these areas in the Southern Hills we realise that here we have land in close proximity to the main markets and also much of the land is within a forty mile radius of Adelaide. These facts alone place a rather high value on any property and it is not infrequent that we hear of £100-£150 per acre being paid for some of the better class land within the areas mentioned. The present value of deep sand areas could possibly be assessed at £20 per acre with an overall carrying capacity of approximately one dry sheep per acre. It is considered that the carrying capacity could be lifted to about three dry sheep per acre and the value of the land increased to about £60 per acre following successful establishment of pasture.

METHODS OF ESTABLISHMENT OF LEGUME PASTURES

Before discussing this perhaps we should try to understand why so many failures in establishment have occurred in the past. Probably the most important discovery in recent times has been the finding of the rapid death rate of Rhizobia bacteria on the seed when placed in the Mt. Compass sands. This had led to the recommendation of increased rates of inoculum on legume seed and of heavy applications of lime to lessen the acidity of the sands, thus giving the inoculum bacteria a better chance of survival. If a better survival of these bacteria is achieved, we consequently have improved nodulation and growth of legumes. Low winter temperatures cause slow legume germination, this often taking twice as long as in the Autumn. This means that if the pasture is sown late the inoculum also has to survive twice as long as it is much more likely to die before nodulation can occur.

Experiments have also shown that these sands have a low supply of many of the essential plant nutrients including phosphorus, potassium, calcium, copper, zinc, molybdenum and cobalt. Magnesium and manganese could also be suspect.

As a result of these experiments new recommendations for the establishment of sub-clover and lucerne have been made and a suggested programme is outlined here:—

(1) Prior to sowing of the seed, broadcast Agricultural lime on the area at the rate of 8-10 cwt. per acre.

(2) Always inoculate lucerne seed prior to sowing and use 5-10 times the present recommended rate of peat powder.

(3) Inoculate sub-clover when sowing on virgin land and use heavier rates of inoculum.

(4) Sow the seed on a firm seed bed in moist sand no later than late May to take advantage of the warm Autumn conditions for quick germination and nodulation. Spring sowings are risky because of dry conditions.

(5) At least 2 cwts. of Agricultural lime should be sown in the drill row with the seed (this is in addition to the lime broadcast).

(6) Lime pelleting of lucerne seed will increase the chances of satisfactory nodulation and reduce the need for a high level of inoculum. It will not reduce the need for lime.

(7) After sowing of the seed top-dress with two sacks per acre of superphosphate each containing 3½ lb. of copper, 3½ lb. of zinc, 1 oz. of molybdenum and 1 oz. of cobalt. Also top-dress with 1 cwt. muriate of potash per acre.

(8) When sowing sub-clover, use several strains in preference to a single variety, e.g. Mt. Barker, Yarloop and Geraldton sub-clovers sown at the rates of 2 lb., 4 lb. and 4 lb. per acre respectively. In recent trials conducted by the Department of Agriculture a deep rooted annual legume named French Serradella has shown promising results when sown on the deep acid sandy soils. Lucerne has provided the answer in most situations, but present indications are that Serradello may have a place. Farmers wishing to test this plant are advised that Serradella must be sown immediately after the opening rains at a rate of 10 lb. of inoculated seed an acre, the establishment practice being the same as outlined above. Serradella inoculum can be obtained from the Waite Agricultural Research Institute.

SUBSEQUENT FERTILIZER TREATMENT

In subsequent years following the establishment of posture 2 cwt. per acre of superphosphate should be applied annually. Information on the degree of potash deficiency is somewhat lacking but it may not be required annually. Trial strips should be put down across a paddock to check this. If the establishment of legumes is good there is probably no need to re-apply lime for some years. However, a soil acidity or pH test is the best indicator of this and a further dressing of lime at ½-1 ton per acre on lucerne should be applied when the pH drops below 6.0 and on sub-clover when the pH is below 5.5. The trace elements. copper and molybdenum should be applied every four years at the rate of 3½ lb. copper and 1 oz. molybdenum per acre.

INSECT PESTS

Insects can often turn success into failure. Red mite can be troublesome soon after emergence of pasture and spraying with 2-4 ozs. of D.D.T. per acre is recommended. Pink cut worm can be very damaging in October, and this can also be controlled by spraying with 2-4 ozs. of D.D.T. per acre.

ALTERNATIVE USE OF DEEP ACID SANDS

Where these deep sands form a small portion of the property, consideration could be given to the establishment of pine trees on the area. These can later be invaluable as a shelter belt for stock and perhaps as a source of income. On the larger property, particularly where sands constitute a major portion of the holding, serious thought could well be given to the establishment of pines as a long term investment as opposed to the sowing down of a permanent pasture. On current rates it is estimated that over a thirty year period pines could produce the equivalent of an annual return of approximately £8/-/- per acre.

MORE RISKS FROM FOOT-AND-MOUTH

A recent report from the Food and Agriculture Organization (F.A.O.) states that only ten countries in Europe were free from outbreaks of foot-and-mouth disease last year. **Poland was not one of these.** Yet we now have a news item stating that Commonwealth quarantine officers are trying to trace a batch of canned pig-meat from Poland which is believed to be insufficiently sterilized. A number of cans from the batch have been destroyed but the whereabouts of the remainder are unknown. Even in the interests of freer trade, should not we ask "Why take the risk? Why allow the importation of **any** material of animal origin, however treated, from any country with a recent history of f. & m.?"

REPRODUCTIVE EFFICIENCY

Too often our Farm practices are dictated by custom and tradition, but unfortunately it takes a long time before science can actually put to the test the way we do things on the farm, to find out by actual experiment whether there are better ways, and whether there are real grounds for the prejudices that prevent us from moving away from the customary pattern.

This extract from a review of breeding practices by Dr. Joseph Edwards, C.B.E., D.Sc. (Director of Breeding and Production, Milk Marketing Board, England), is worth our attention.

The reproductive efficiency of cattle determines the size of the calf crop, which is all-important for herd replacements and for beef production. The national herd produces rather more than 3 million calves a year. If we are to increase our own annual consumption of beef, from home supplies, by 5 lb. —to eat only a little more than we consumed before the war—we need an extra 500,000 calves a year. This does not take into account the increasing demand for beef on the Continent and the possibility of an expart trade which can be stifled by a calf shortage. Where are the extra calves to come from?

One solution exists in increasing reproductive efficiency by reducing the calving interval which is at present about 13 months. A reduction of 12 months would mean about 250,000 more calves in one year. Some argue that the calving interval might be even shorter—that there is nothing sacrosanct in a 3-months' wait between calving and the next conception. A shorter lactation and a still larger calf crop might be aimed at, especially in view of the fact that the early part of the lactation is the more profitable for milk production. I am not suggesting that a very extreme shortening of the calving interval could be brought about without research on the subject but that is what research is for.

Another way to produce extra calves lies in calving heifers at a younger age. A Friesian heifer that "stole the bull" and produced a calf at 18 months—the average age at first calving is 32 months—went on to make a first lactation yield of 1,500 gallons and a total of 7,700 gallons in four lactations by the time she was seven years old; an Ayrshire-Charolais heifer that recently produced the first three-quarter bred Charolais calf, accomplished this at 20 months of age and may produce her second calf by the time most heifers produce their first. Naturally the ability to breed at a younger age calls for high energy feeding to speed up growth. The barley feedlot regime grows heifers fast and at eight to nine months they can be inseminated, taken out of the feedlot and treated in the normal way. After calving they may be earmarked for herd replacements or for beef. If for herd replacements there need be no fear, according to N.M.R. studies of age at first calving and survival in the herd up to six lactations, of any failure to stay the course.

Age at first calving and proportion of heifers completing six lactations:

Age at 1st calving	% completing 6th lactation
Under 24 months	17
24–26 ,,	14
27–29 ,,	16
30–32 ,,	13
33–35 ,,	15
36–38 ,,	15

If, as surplus heifers, they are to be disposed of for beef, I suggest a new maxim; no heifer should be killed before she has produced a calf: having been reared to the age of reproduction she should reproduce.

MARKETING NEWS

UNITED KINGDOM TO IMPORT MORE BUTTER: ACTION TO REDUCE PRICES

The United Kingdom is to import extra quantities of butter during the quota year April, 1965 to March, 1966.

Following Government to Government negotiations the following statement was issued by the British Government.

"The Government has decided to continue the quota system for imports of butter for further 12 months beginning 1st April, 1965.

"Stocks in the country are considerably higher than o year ago and given normal weather European butter production is expected to show some improvement.

"Basic quotas will remain at 420,000 tons divided amongst supplying countries in the same proportions as this year.

"In addition 39,000 tons are being issued for delivery in period April to November from countries with basic quotas who have established that they will have such additional butter.

"Consideration will be given to issue of further authorizations in course of o year in light of supply position and price of butter.

"New Zealand and Australia, whose heaviest shipments come in period December—March, will retain the right to send their proportionate share of total permitted imports.

"The intention of these arrangements is to encourage o reduction in butter prices."

This action is but one in a series of moves by the United Kingdom government to put a brake on the increasing cost of living in that country.

Commenting on the result of the negotiations the Chairman of the Board, Mr. E. G. Roberts, said that the Board was disappointed that the United Kingdom Government was not able to accept Australia's earlier recommendations regarding a lower figure for authorizations above the basic quota. The decision as it stands could have a weakening effect on prices as already indicated by the fall in price of blending butters on the United Kingdom market.

"However, the Board appreciates the retention of the framework of the quota system which it believes is in the interests of both countries," Mr. Roberts added.

AUSTRALIA LEADS IN THE JAPANESE CHEESE MARKET— BUT ONLY JUST

AUSTRALIA retained her position of No. 1 overseas cheese supplier to Japan in 1964—by a short head. From January to December, the total amount shipped was 2,100 tons.

Norway's figure was 1,980 tons, New Zealand 1,410, and the Netherlands 1,385.

Because of adverse economic conditions in Japan last year, sales of Australian cheeses, which had been rising sharply over the past few years, temporarily "flattened out" in common with other foods.

It is anticipated by the Australian Dairy Produce Board that as conditions return to normal, the acceleration of cheese sales to Japan will continue as before.

During the last five years cheese sales by Australia to Japan have increased by 2,500%, the figures being 1959-60, 112 tons; 1960-61, 282; 1961-62, 681; 1962-63, 2,277; 1963-64, 2,709.

CASEIN SALES TO JAPAN

Australia's shipment of 6,960 tons of casein to Japan during 1964 ranked second to New Zealand's 9,830 tons, but was well ahead of Argentina's 1,604 tons which held third place.

OTHER CHEESE MARKETS EXPANDING

The phenomenal growth that was the feature of the development of the Japanese market for Australian cheese is being repeated, strangely enough, in Saudi Arabia.

Cheese exports to Saudi Arabia during the last five years, from 1959-60 to 1963-64, have been (tons) 261, 509, 436, 745, 1,109, to place this country sixth in rank in Australia's export markets last year.

The Philippine Islands (1,347 tons), Italy (1,898 tons), U.S.A. (1,600 tons), and Holland (1,018 tons) also showed substantial increases in cheese exports over the quantities in previous years, as, with the exception of the U.S.A. the 1963-64 totals were from 2 (Philippines) to 9 (Holland) times higher than any earlier annual export figures.

NO SURPLUS BUTTER IN U.S.A. NOW

The United States Department of Agriculture has announced plans to buy margarine for domestic distribution to needy families and charitable institutions.

The Department's surplus stocks of butter have been made available to needy families for a number of years, but currently there are no uncommitted stocks of butter on hand.

The Department has purchased practically no butter under its support price programme since about August last year, as a result of strong domestic and foreign demands, which have raised prices for dairy products above announced support levels.

On December 30, the Department made its first purchase under the programme, buying in just over 1,300 tons of margarine.

Competing countries can now breathe a sigh of relief as the existence of large stocks of U.S. butter has always had a destabilizing effect on world market prices.

MORE RISKS FROM FOOT-AND-MOUTH

A recent report from the Food and Agriculture Organization (F.A.O.) states that only ten countries in Europe were free from outbreaks of foot-and-mouth disease last year. **Poland was not one of these.** Yet we now have a news item stating that Commonwealth quarantine officers are trying to trace a batch of canned pig-meat from Poland which is believed to be insufficiently sterilized. A number of cans from the batch have been destroyed but the whereabouts of the remainder are unknown. Even in the interests of freer trade, should not we ask "Why take the risk? Why allow the importation of **any** material of animal origin, however treated, from **any** country with a recent history of f. & m.?"

METROPOLITAN MILK SUPPLY REGULATIONS, 1962

18th March, 1965.

BULK TANKER PICK-UP

Farm Milk Tanks

With the increasing interest being shown in bulk tanker pick-up of milk in the milk production area, the Metropolitan Milk Board considers that its requirements in regard to farm milk tanks should be made known to licensed producers. Regulations under the Metropolitan Milk Supply Act in regard to these units are already in force.

Regulation 3 of the "Metropolitan Milk Supply (Bulk Collection) Regulations, 1962" dealing with the type, dimensions, construction and material used in any farm milk tank states:

> "Every person holding a milk producer's licence who requires milk to be collected from his premises in bulk shall supply or have available on the premises specified in such licence a tank or other receptacle (hereinafter called "a farm milk tank") of such dimensions and constructed of such material and in such manner as the Board shall approve for the purpose of storing milk in a manner which will enable the same to be collected in bulk by means of tankers."

The Board has decided as a matter of policy that in future it will approve only refrigerated farm bulk tank units which comply with the specifications approved by the Australian Standards Association on 27th June, 1963 (A.S.N.46—1963).

Representatives of Milk Treatment Plants, producer organisations, and manufacturers of farm milk tank units have already been informed of the Boards' requirements in this matter.

Any producer contemplating the purchase of a farm milk tank unit is advised to make certain that it has been certified in accordance with Clause 7.3 of A.S.N.46—1963 which reads as under:

Certificate of Test

> "Upon request, the vendor shall supply a copy of an approved testing authority's certificate of test of performance carried out in accordance with this specification on a stock model of the tank-unit. The certificate shall identify both the tank and the cooling equipment that comprised the stock model which was tested and to which the certificate applies."

R. B. CANT,
Secretary.

IT'S THE "TRIMMINGS" THAT ARE FATTENING

Remove all the social and ritualistic trappings from eating — including the elimination of traditional eating utensils — and fat men will show "an astonishing lack of hunger and thus lose weight rapidly" while a thin man will continue to consume enough calories to maintain his normal weight. This is indicated in recent exciting research which is attracting attention in America.

The research is being conducted by Doctors Sami A. Hashim and Theodore B. Van Itallie, of St. Luke's Hospital, New York City.

According to their paper "Clinical and Physiologic Aspects of Obesity," which was published in the January Journal of the American Dietetic Association, both obese and lean men were subjected to a bland, purified and homogenized diet eaten in solitude. To reduce even further the act of eating to its basic essentials, each man received his food from a machine through a tube he held in his mouth. A mouthful of the preparation was delivered every time he pressed a button. On this "demand" basis the fat men reduced their intakes to as low as only 250 calories a day (a strict slimming diet can amount to 1,200 calories per day), while the thin men held their weight and continued to consume as much as 2,500 to 4,000 calories per day.

The scientists cannot explain why the obese subjects reacted differently from their leaner counter-parts. They concluded, however, that "the obese person may relate to the setting in which he eats and the meaning food has come to assume for him aside from its use as a fuel".

Is this important to the dairy industry?

The National Dairy Council of America (to whom we are indebted for this News Item) thinks so. As it points out, the real problems facing food marketers are fad beliefs that this or that food is fattening — whereas the fault could well lie in individual intake of excess food and not in the type of food eaten.

STEPTOE AND SON IN THE MARGARINE BUSINESS!

In our last issue we printed an article which referred to the storage of vegetable oils for margarine manufacture in tanks which were covered with a thick crust of sludge and scum.

This unsavoury story about margarine in U.S. was bad enough, but an equally unappetising report has now come from Europe, where the London firm, British Glues and Chemicals Limited, has established a bone degreasing plant at Dodewaard, near Arnhem, in Holland. The plant produces raw materials for margarine, edible gelatine, animal feed and fertiliser, **all from slaughter house bones.**

The principle of the process is simple. A slurry of pulverised bones is passed through a concrete chamber where rotating paddles beat the water surface at ultrasonic frequency. The bone cells are ruptured by the shock waves in one-third of a second, and the fat in the cells floats to the surface and is skimmed off.

The fat is worked up and after being refined goes for margarine manufacture.

STOP PRESS

(See Page 13)

Minister of Health announces complete prohibition on canned pig meat from all European countries except U.K. and Eire.

Beware Of Too Much Molybdenum

Certainly the use of molybdenum as a trace element in superphosphate has resulted in impressive improvements on many of our hills pastures, and there is always the temptation to believe that if something is good, twice as much will be twice as good.

Fortunately figures obtained from fertiliser distributors in this State indicate that South Australian farmers are using molybdenum only in the recommended quantities, but in New South Wales, where the use of this element has had spectacular results in the main dairying areas, veterinarians are beginning to suspect that some stock troubles which have been difficult to diagnose may be due to the excessive application of molybdenum. Farmers in these areas are now being warned of the dangers to stock of excessive use, and also being advised that although its application to pastures does have a desirable effect in many cases, research by C.S.I.R.O. showed that only minute quantities of molybdenum were required by pastures and also proved that heavier applications did not give increased results.

Research has revealed that excessive molybdenum in fodder can be harmful to stock. One effect of an excessive intake of molybdenum in animals is to cause a drop in the copper level of the liver and this results in unthrifty growth and ill-health. Excessive molybdenum can also cause scouring and in parts of Great Britain and New Zealand this condition, which is called "Teart", occurs where the land is naturally very high in molybdenum.

The application on its own of the minute quantities of molybdenum desired for pasture presented difficulties and thus it was naturally a very practical way out to mix it with superphosphate, which is universally applied to pastures. Thus molybdenum super. has been available for many years.

The results of research guided the mixing of molybdenum with super. Approximately 2 cwts. of super. per acre was the general application annually in coastal areas during the early 1950s, and with this in mind the C.S.I.R.O., the University of Sydney and the Department of Agriculture agreed on the mixing of 24 ounces of molybdenum trioxide per ton of super. as being the desired level for safe and effective use. This meant that 2.4 ounces of the molybdenum compound were applied per acre in 2 cwts. of Mo. Super.

The early C.S.I.R.O. research showed that such an application should suffice for at least five years under most conditians and subsequent applications of molybdenum would nat give added benefit before five years.

Phosphate is one of the most deficient plant foods in many soils and the liberal use of super. has generally given excellent results. Annual top-dressing is a very desirable feature of pasture improvement. The splendid results obtained from super. has prompted heavier rates of application and 3 to 4 cwts. of super., and even more, are now applied per acre.

Because Molybdenum has also frequently given responses in local areas, some farmers have increased the use of molybdenum/super. on pastures and have again applied it in the second year and perhaps again later. These frequent or heavy superings have given splendid results and have raised the question of which element causes the main benefit.

In view of research and wide general experience, landholders can be assured that the very beneficial results obtained from heavier or quickly repeated top-dressings with molybdenum/super. are largely due to the liberal applications of phosphate and are not due to the additional malybdenum used over recommended levels.

Plants can take up excessive molybdenum even though they cannot use the added quantity to give increased yields, but the molybdenum-rich fodder can be a cause of sickness if stock feed on it.

Thus the prevalence of excess molybdenum in fodder can be a problem and it is definitely advisable to avoid the occurrence of such a condition rather than to have to rectify it when it causes stock disorders. Hence farmers should adopt the official recommendations for application of molybdenum and should not depart from these without being certain of the need for such modification. In particular farmers should be on the look-out against using a carry-over of last season's Mo. Super. on the same paddocks in subsequent years.

Molybdenum/super. was originally made with 24 ounces of molybdenum trioxide per ton of super., and 2 cwt. only of such a mixture should be applied per acre for pastures. This application should last five years under most conditions and subsequent super. applications should be of the plain type—viz. i.e., super. without molybdenum.

If it is desired to apply more than 2 cwt. of super per acre when using molybdenum, three courses can be followed:

(1) The additional super. over 2 cwt. should be of plain fertiliser. This will necessitate two operations to apply the super.

(2) Lower strength molybdenum/super. mixtures may be available so that all of one kind of fertiliser can be used. Thus, with an application of 4 cwt. of super. per acre, the mixture would contain only half that in the standard blend of 24 oz. per ton. Farmers should inquire about this from their fertiliser suppljer.

(3) A molybdenum compound ran be mixed with the seed for application of the molybdenum and plain super. used to supply the phosphate.

The suspicions that some stock disorders may be due to excessive molybdenum should be sufficient warning to farmers that care is needed in its use and landholders are strongly advised to discuss the problem with their veterinary inspector or adviser.

There is, of course, a possibility that the effective length of life on one recommended application of molybdenum will vary with some soil types and also it may be shortened on very well drained soils subject to heavy annual rainfall. However, in this district there is no reliable evidence on these points and in many cases there was little response to molybdenum, indicating that the deficiency often was very slight indeed.

"INCOME DISPARITIES THE MAJOR PROBLEM"

—Says U.S. Farm Commission

The results of a survey by a Special Commission set up to study the economic problems of primary industry in the U.S.A. show that despite the apparent differences in many of the aspects of farming between that country and Australia, the major economic problems are common to both.

The results of the Commission's work are far too long for inclusion here, but the major recommendations also show that the possible solutions to the problems may also be similar.

The following recommendations summarize the conclusions reached in the report:

- A major effort must continue to be made to achieve equitable incomes in agriculture. **The goal should be to make earnings received by efficient farmers for their labour, management, and investment comparable with earnings on similar resources outside of agriculture.** Advancing technology and the unfavourable bargaining position of farmers will continue to bear heavily upon agricultural income in the years ahead. Economic studies have convincingly shown the depressed incomes likely to exist for farmers if all price and income programmes were abandoned. . . . The first decision to be made, therefore, is to continue the general policy of support of income in agriculture as long as present circumstances persist.
- Despite rapid change in the past 25 years, there remain in agriculture **many small farms with far too few resources to permit the families on them to earn decent incomes from farming in any probable price situation.** The Commission supports the growing efforts to deal with this and related rural problems through development of adequate credit, education of rural youth for non-farm occupations, retraining of adults, development of rural resources for uses other than agriculture, and provision of minimum social services for poverty-stricken rural families. . . .
- The Commission proposes three general kinds of programmes to deal with the price and income problems of efficient farmers. The first kind seeks to broaden markets for farm products in useful ways at home and abroad. The second kind aims at both permanent and temporary retirement of cropland as a means of preventing the exponsion of production at an excessive rate. The third consists of commodity programmes to fit the wide variety of special circumstances and possibilities existing in agriculture. . . . .
- In order to enlarge the domestic market for food and to improve the diets of low income families, the Commission recommends the expansion of the Food Stamp programme to all areas where it can be administered efficiently. . . . The School Lunch programme and the Special Milk programme for school children serve a useful purpose of another type and should continue along present lines.
- The Food for Peace programme has established itself as a constructive instrument of American foreign policy. To establish the programme more clearly as a means of foreign aid and to improve it as such, it is recommended (a) that the shipment of foods not in surplus be authorized, (b) that means be found of preventing the accumulation of foreign currencies where excessive, and (c) that the barter phase of the programme be discontinued.
- The Commission urges continued efforts to expand commercial exports of farm products through trade negotiations and by market development under both public and private auspices. . . . The best interests of the United States, rather than sweeping prohibitions against trade, should guide decisions on trade with Communist nations in the future.

SUPPORT THE FIRMS THAT SUPPORT YOUR JOURNAL

- A major place in the total effort to prevent over-production in agriculture should be given to a diversified voluntary land retirement programme. The Commission proposes a two-phase undertaking, one phase aimed at permanent retirement of clearly sub-marginal cropland in whole-farm units, the other phase aimed at short-term retirement of cropland of all levels of productivity on farms that will remain in agriculture.
- Efforts to improve incomes and resource use in agriculture should not overlook the large forest acreage on the Nation's farms. The basic elements of a strong farm forestry policy should be the time-tested co-operative forestry programmes now underway. These include protection of forests from wild fires, insect infestation and disease; tree planting programmes; timber stand improvement; preserving fish and wildlife habitat; watershed protection; recreational development; and market research to expand old and to develop new uses of farm wood lot timber, especially that of low quality.
- Both the opportunities for and the necessity of co-operative action by farmers to assert themselves in the markets in which they deal will increase in the future. **A greater proportion of the responsibility for maintaning fair and stable incomes in agriculture can be shifted, selectively and gradually, from strictly Government programmes to producers' own efforts** as the change occurs. It should be part of national farm policy to expedite sound developments of this kind in every reasonable way. A new and growing role for farmers' co-operatives, together with more participation by producers in marketing their own products, will necessarily be an important part of the total change.

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1964	1965	1963/64	1964/65	1964	1965
February	3,076	3,284	32,392	36,045	6,837	7,534
March	2,874	3,131	35,266	39,176	9,711	10,665

SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1964	1965	1963/64	1964/65	1964	1965	1964	1965
February	1,639	1,638*	12,908	13,178	53.3	49.9	2/7¼	2/5
March	1,736	1,871	14,644	15,049	60.4	59.7	2/10½	2/9¾

* 28 day month

Moving Average Quota for 12 months ended 28/2/65, 41.45%; 31/3/65, 41.51%.

INTERIM PRICES TO LICENSED SUPPLIERS

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

1965	Basic C.M.B. (per lb. butterfat)		Total	3%	3.5%	4% (per gallon)	4.5%	5%
February	3/9¼	2/5	6/2¾	1/11	2/3	2/6¾	2/10¾	3/2½
(cents)	38.12	24.17	62.29	19.30	22.50	25.70	28.90	32.10
March	3/9¾	2/9¾	6/7½	2/0½	2/4¾	2/8¾	3/1	3/5
(cents)	38.12	28.13	66.25	20.51	23.91	27.32	30.75	34.19

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency)

	February		March	
	1964	1965	1964	1965
Butter—Choicest Australian	334/–	350/–	334/–	350/–
Cheese—First Grade Australian	226/–	255/–	236/–	250/–
Rindless Australian	234/–	265/–	246/–	260/–

FURTHER STEP-UP IN CURRENT INTERIM VALUES

The Commonwealth Dairy Produce Equalisation Committee Limited has decided, after examining sales to date and forward market prospects, to increase interim average values for butter and cheese for the current financial year by 9/4d. cwt. butter and 7/-d. cwt. cheese to new interim average values of 386/2, and 236/4d. cwt. respectively. The Committee emphasizes that these values have been made possible by the early receipt of funds following the prompt sale of our exportable surpluses on a buoyant market, and **these values have no bearing whatever on likely opening levels for the period commencing July 1st, 1965.**

INTERIM BASIC PRICE RISE AND RETROSPECTIVE PAYMENT

The new rates announced by the Commonwealth Equalization Committee will be reflected in an increase in the Interim Basic Price for licensed producers in the Adelaide metropolitan producing district, and a restrospective payment on all production from July 1st, 1964, to April 30th, 1965.

Although the new rates will not be known until later in May it is estimated that the Interim Basic Price will rise to at least 3/10¾d. lb. butterfat or higher, and that the equalized retrospective payment will be about 1¼d. lb. butterfat.

BEST SINCE 1956

The "step-up' in the Interim Basic Price will make the current rate the highest since May-June, 1956, when the rate was raised from 3/9¾d. to 4/2¾d. Since then the rate has never been above the 3/6½d. level reached in February, 1960.

DAIRY HUSBANDRY RESEARCH FOUNDATION REPORTS ON ITS ACTIVITIES

A fundamental change in milking machine design, research into mastitis causation and diagnosis and the vexed question of "antibody milk" have been studied by the Dairy Husbandry Research Foundation at Camden, N.S.W., during the past year. A brief report of the work of the Foundation, which is now directed by Dr. A. K. Lascelles (taking the place of Dr. Whittlestone, who resigned last year) follows.

Applied Research

1. "Machine Milking and Mastitis"

This project is aimed at finding out more about the effect of the milking machine as a cause of mastitis. An extensive bacteriological survey is being conducted on quarter samples obtained from cows in the Camden district.

The purpose is to find the different types of bacteria being secreted by normal and mastitic glands, to relate the incidence of bacterial types to age of the cow, stage of lactation and to dairy shed hygiene. At the same time studies are being made of milking machine performance, i.e., air flow pulsation ratios together with vacuum stability recordings. These are being done on farms selected in the survey. It is hoped to be able to relate the effect of these milking machine characteristics on the incidence of bacterial carriage in these herds.

Examination is also being made of the efficiency of the California Mastitis Test by comparing C.M.T. readings with direct leukocyte counts and the bacteriological status of the milk. Although the California Mastitis Test is a good index of the quality of milk, it is suspected that it may not be completely reliable when used to examine milk from individual quarters of a cow or even from individual cows in a herd. This is a large experiment as, in addition to the information we will be getting from the operations just described, a detailed analysis of the types of organisms obtained in the survey is being carried out. These organisms are typed, the toxin they are producing is noted and their sensitivity to a wide range of antibiotics at present being used for the treatment of mastitis is measured. Another result from this survey may well be that it could serve as a model for investigations in other districts where mastitis becomes a real problem.

2. "Hygiene of the Cow's Udder"

Staphylococcus bacteria are known to be capable of multiplying on skin surfaces and it is felt that the assistance and spread of disease in the herd may well come from bacteria breeding and lodging on the outside surface of the udder. Before Dr. Whittlestone left he designed a novel scrubbing device which is being used with the appropriate bacteriological methods, and with long and short acting sanitizers to determine the survival of staphylococcus bacteria on the outside of the udder. In addition a treatise is being compiled for publication on udder hygiene with special reference to the staphylococcus.

3. "Improvement of Milking Machine Design"

A new wide diameter milking line has been devised which, together with a diaphragm pump, obviates the need for the mechanical releaser. Preliminary studies of this new line have suggested that it results in faster milking, greater vacuum stability and less agitation of milk than other systems. In order to

compare the performance of this new line with other systems, a large factorial experiment has been designed to determine the effect of three milking lines, of line vacuum, of air admission and reserve air on milk flow rate and on vacuum fluctuation at various levels in the milking machine and at the teat cup. In addition, the effect of some of these factors on lipolytic rancidity will be studied. It can be anticipated that results of these experiments when published will lead to a number of practical recommendations.

4. "Milk Quality"

This project is aimed at gaining a more thorough understanding of factors influencing milk composition under Australian conditions. After slightly modifying our laboratories we are in a position to carry out a number of measurements relevant to this particular problem. In addition to detailed bacteriological examinations, mastitis tests and cell counts, milk will be analysed for milk fat, solids-not-fat, protein and lactose, and milk production measurements from each individual quarter of the cows in the foundation herd will be carried out routinely every fortnight. When these results are collated it will be possible to relate the severity of mastitis to milk production and composition. When this work is completed it is hoped to carry out more extensive field studies on the effects of nutrition on milk production and quality, and, in particular, to determine how these vary in herds maintained on pasture all year round.

FUNDAMENTAL RESEARCH

1. "Studies on Lactational Physiology with Special Reference to the Formation of Milk Fat"

This study is aimed at understanding more thoroughly how a cow synthesises fat in her body and where this fat comes from. It is quite clear that some of the pre-formed fats for milk production come from body fat that has been previously stored in the body. The rest of the fat that the cow needs for its milk is derived directly or indirectly from its daily diet. A cow on pasture may consume between three-quarters to one pound of fat a day. There is some evidence suggesting that much of this is absorbed from the gut without being broken down to any extent by the micro-organisms from its fore stomachs. These things are known. Therefore it is of tremendous interest to determine how efficiently cows can absorb and utilise, for milk fat formation, additional fats added to their diets.

Although it is already known that the eating of unsaturated fats by a cow does not lead to a significant change in milk fat composition—because saturation occurs in the rumen—it is still unknown whether the feeding of fat at certain levels may not provide a useful source for milk fat synthesis. Furthermore with the new precise techniques that have been developed, it will be possible to determine the fundamental reasons why milk fat content decreases under certain nutritional regimes.

At Camden a number of cows have been surgically prepared so that the blood supply in the artery going to the udder and the vein coming from the udder can be sampled simultaneously. These blood samples are analysed. Samples are being taken from both lactating and dry cows. Results so far have indicated that the mammary gland of the cow is very heavily dependent on glucose and when a cow is fed a ration which reduces its blood glucose its milk production will fall considerably. Results also indicate that up to 66 per cent. of milk fat may be derived from preformed fats, i.e., triglycerides and free fatty acids which are circulating in the blood. Some very interesting new data on the composition of blood plasma fat of the dairy cow at different stages of lactation, together with results of the arterio-venous difference, will be published shortly as a result of this experiment.

2. "The Local Synthesis of Antibody in the Mammary Gland"

There has been much controversy as to whether the mammary gland makes antibody following the local introduction of foreign proteins or killed bacteria. Conflicting results reported so far by scientists in this field may be related to the insufficient rigid criteria applied after differentiating between local antibody production and the appearance of antibody in milk following its transfer from the blood. It also seems possible that the ability of the mammary gland to synthesise antibody may vary quite strikingly during the course of lactation.

In the present investigations sheep with cannulated mammary lymphatic ducts are being used. By these means the killed bacteria (vaccine) which have been introduced in the mammary gland are prevented from reaching the general circulation where they would cause a systematic antibody response. The ability of the mammary gland to synthesise the anti-body can be compared with the ability by this technique of the regional lymph gland—a well known anti-body forming site. Early results have shown that the udder in late lactation and during the dry period is capable of manufacturing large quantities of anti-body while almost negligible responses have been elicited in early lactation. It is anticipated that knowledge gained in this field will provide a background for further attempts to control mastitis by the use of locally injected vaccines.

"BRIDGING THE GAP"

In speaking to a friend recently, the latter expressed concern that, despite full cover being necessary for his employees, by virtue of Workers' Compensation Insurance, there was no apparent avenue available for protecting the welfare of his immediate family, should some accident result in his incapacity for some protracted time. The impact on trading income could be serious and in addition, employment of additional labour could be an unforeseen major expense.

At this stage I considered it opportune to remind him of the cover available under any of several Personal Accident tables readily available from The Federation Insurance Limited.

Unlike Workers' Compensation Insurance, the personal accident policy grants cover for 24 hours of each day, i.e. during the working day and in normal family pursuits the latter include accidents which may occur in leisure time (with certain reasonable exceptions) arising out of sporting activities and private hobbies.

There are two specific features which warrant particular attention:—

- For a fixed annual charge cover may be obtained for certain selected compensation—capital sums and/or weekly benefits. Such covers are "tailor made" according to the budget of the client, and at the same time may be varied should later circumstances so dictate.

- For a person engaging in his own business, at a time when full financial resources are not developed Personal Accident cover gives a wonderful measure of protection during those formative years when he is doing the more arduous and dangerous work. The need or otherwise for such insurance can be re-assessed as the business expands, as the policy is only an annual contract, renewable by negotiation in the usual manner.

Of course, it is possible, by payment of an additional premium, to widen the cover to include incapacity arising out of illness, but these and all allied matters can be ascertained from any of the State Offices or many Sub-Branches whose facilities are always available for "Federation" Service.

Know Your Noxious Weeds

A little time ago it was stated that in every reported case of infestation by Skeleton Weed, the initial reports had been made by farmers who were members of the Agricultural Bureau.

The reason is obvious, as such farmers become familiar with the problem by discussion at Bureau meetings and by reading the Journal of Agriculture.

But while this is true of Skeleton Weed, which can be classed as a "new" weed in S.A., can we be certain that we all know just what are the noxious and dangerous weeds that we should look out for and destroy?

Unfortunately, we cannot publish photographs and descriptions of every dangerous or noxious weed, but here at least is a list which is right up to date, of all the proclaimed weeds in South Australia.

DANGEROUS WEEDS

(throughout the whole of the State)

Botanical Name	Common Name
Alternanthera repens	Khaki Weed
Cirsium arvense	Perennial Thistle
Colocynthis vulgaris	Colocynth
Eichhornia crassipes	Water Hyacinth
Euphorbia marginata	Snow of the Mountain
Iva axillaris	Poverty Weed
Prosopis juliflora	Mesquite
Salpichroa rhomboidea	Pampas Lily of the Valley
Salvia reflexa	Mint Weed
Senecio jacobea	Ragwort
Sida hederacea	Alkali Sida
Toxicodendron radicans	Poison Ivy
Xanthium pungens	Noogoora Burr

NOXIOUS WEEDS

(throughout the whole of the State)

Botanical Name	Common Name
Alhagi Camelorum	Camel Thorn
Allium triquetrum	Three-corner Garlic
Allium vineale	Crow or Field Garlic
Amisinckia hispida	Yellow Burweed
Asphodelus fistulosis	Onion Weed
Cardaria draba	Hoary Cress
Carduus pycnocephalus	Slender Thistle
Carduus tenuiflorus	Winged Slender Thistle
Carthamus lanatus	Saffron Thistle
Cenchrus tribuloides	Innocent Weed
Centaurea calcitrapa	Star Thistle
Centaurea repens	Creeping Knapweed
Chondrilla juncea	Skeleton Weed
Conium spp.	Hemlocks
Convulvulus arvensis	Field Bindweed
Cuscuta spp.	Dodders
Cynara cardunculus	Cardoon or Artichoke Thistle or Wild Artichoke

Datura spp.	Thorn Apples
Euphrobia terracina	False Caper
Homeria spp.	Cape Tulips
Hypericum perforatum	St. John's Wort
Lycium ferocissimum	African Box Thorn
Marrubium vulgare	Horehound
Opuntia spp.	Prickly Pear
Picnomon acarna	Soldier Thistle
Reseda luteola	Wild Mignonette
Reseda lutea	Cut leaved Mignonette
Rubus fruticosus	Blackberry
Senecio pterophorus	African Daisy
Silene cucubalus	Bladder Campion
Silybum marianum	Variegated Thistle
Solanum elaeagnifolium	Tomato Weed
Solanum rostratum	Buffalo Burr
Sorghum halepense	Johnson Grass
Tribulus terrestris	Caltrop
Ulex europaeus	Gorse or Furze
Vella annua	Wards Weed
Xanthium californicum	Californian Burr
Xanthium spinosum	Bathurst Burr

NOXIOUS WEEDS

(in certain areas of the State)

Botanical Name	Common Name
Hirschfeldia incana	Buchan Weed

Mount Gambier, Port Macdonnell, Tatiara, Naracoorte, Penola, Lacepede, Lucindale, Tantanoola, Robe, Millicent, and Beachport.

Melianthus major — Cape Honey Flower

District Council of Strathalbyn.

Echium italicum — Italian Bugloss

Mount Gambier, Naracoorte, and Victor Harbour, and the District Councils of Beachport, Encounter Bay, Gumeracha, Lacepede, Lucindale, Millicent, Mount Gambier, Naracoorte, Onkaparinga, Penola, Port Macdonnell, Robe, Tantanoola and Tatiara.

Echium plantagineum — Salvation Jane or Paterson's Curse

Burnside, Campbelltown, Mitcham and Mount Gambier, Naracoorte, Maitland, Port Lincoln and Victor Harbour, and the District Councils of Barossa, Beachport, Cleve, Clinton, Coonalpyn Downs, East Torrens, Elliston, Encounter Bay, Franklin Harbour, Gumeracha, Kimba, Lacepede, LeHunte, Lincoln, Lucindale, Meadows, Millicent, Meningie, Minlaton, Mount Barker, Mount Gambier, Mount Pleasant, Murat Bay, Naracoorte, Noarlunga, Onkaparinga, Penola, Port Elliot, Port Macdonnell, Robe, Stirling, Strathalbyn, Streaky Bay, Tantanoola, Tatiara, Teatree Gully, Tumby Bay, Warooka, Willunga, Yankalilla, Yorke Peninsula and Yorketown.

Emex australis — Spiny Emex or Three-Cornered Jack

Adelaide, Burnside, Enfield, Kensington and Norwood, Marion, Mitcham, Port Adelaide, Prospect, Unley, West Torrens and Woodville, Brighton, Campbelltown, Henley and Grange, Hindmarsh, Payneham, St. Peters and Thebarton, and the Garden Suburb, and the District Councils of Barmera, Barossa, Berri, Encounter Bay, Noarlunga, Port Elliot and Loxton and the Cooltong War Service Irrigation Areas.

Lavandula stoechas Topped Lavender
District Councils of Port Elliot and Strathalbyn.
Limonium thouinii Winged Sea Lavender
Moonta, Kadina and Wallaroo, and the district council of Kadina.
Diplotaxis tenuifolia Lincoln Weed
District Councils of Minlaton, Warooka, Yorketown and Yorke Peninsula.
Foeniculum vulgare Fennel
Adelaide, Burnside, Enfield, Kensington and Norwood, Marion, Mitcham, Mount Gambier, Port Adelaide, Prospect, Unley, West Torrens, Woodville, Brighton, Campbelltown, Glenelg, Henley and Grange, Hindmarsh, Payneham, St. Peters, Thebarton and Walkerville, and the Garden Suburb, and the District Council of Port Macdonnell.

DAIRYFARMERS IN U.K. ALSO HAVE PROBLEMS

Despite the fact that primary production in Great Britain is supported by massive Government aid in the name of self-sufficiency, there is still considerable dissatisfaction, and it was reported recently that when dairy farmers who were seeking a price increase of 2d. received instead only ½d., they expressed their disgust by driving farm implements on the main highways (a perfectly legal action) at the weekend, thereby congesting the traffic to such an extent that major stoppages were caused on the main highways.

It is claimed by Sir Harold Woolley, President of the National Farmers' Union of England and Wales, that about 5,000 farmers are leaving the dairy industry in Britain each year.

Sir Harold, speaking at the annual meeting of the union in London, said this alarming situation arose because the reward for an arduous seven-days-a-week job was quite inadequate.

He added: "Unless the trend is halted there is a real danger of future milk supplies being inadequate and of the country being seriously short of beef."

Sir Harold also said an immediate improvement was vital in the incomes of agricultural farmers.

"The disparity between farm incomes and those of the community is not only a social injustice," he said, "but if allowed to continue, would also put the future food supplies of this country in jeopardy."

The levels at which prices for agricultural commodities had been fixed had resulted in increasing economic pressure on the industry, he said.

COMPARISONS DIFFICULT

It is very difficult to compare the position of dairy farmers in Britain with those in Australia to see who, in fact, is the worse off, but the latest figures available indicate that the English farmer obtained an average return of 33.05 pence (sterling) per gallon for all milk in 1962-1963, compared with 37.17 pence 10 years ago. During the same period the minimum wage rates for agricultural workers had risen by 50 per cent.

The average herd size in England is 23 cows, each producing 785 gallons annually, to give a gross income from dairying of £2,490 sterling (£A3,110) although the farms in the production cost survey average 32 cows (55 in Scotland), each producing 838 gallons.

Glenjoy Lulu Tulip, Junior Champion heifer at the Friesian Autumn Fair; another typical Denkavit Champion!

The Glenjoy Friesian Stud of M. R. and G. P. Rathjen, Springton, was outstandingly successful at the Second Annual Friesian Fair. Glenjoy showed the champion and reserve champion cows the junior champion heifer and the junior champion bull. They also won nine first prizes, four seconds and two thirds.

THE SOUTH AUSTRALIAN DAIRYMEN'S . . . Journal

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

Published Bi-monthly

Vol. 4, No. 6 Adelaide, MAY-JUNE, 1965

"YOUNG HOPEFULS"
... to the Bull Team
ARTIFICIAL BREEDING BOARD — NORTHFIELD

PRICE
2/-

...ntered ... G.P.O., Adelaide,
...on by post as a periodical.

12/- per Year, Post-Paid

THE SOUTH AUSTRALIAN DAIRYMEN'S JOURNAL

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

THE FEDERAL DAIRY BOUNTY

Its History, and Future Possibilities

Probably no aspect of Australian dairying receives greater publicity or comment from outside the industry than the Commonwealth Government's subsidy, and at times these comments are so critical that even the dairy-farmer must wonder what justification there is for a system that seems to arouse so much ill-feeling. So let there be no misunderstanding; the justification is there, right enough! Although Australia is one of the world's leading exporters of dairy produce, compared with other dairying countries we enjoy few, if any advantages. On the contrary we have to battle against a cost structure which is higher than that of our competitors, and which can be blamed entirely on the protectionist policy of successive Federal Governments.

If, then, Government action has, by its direct effect on prices and its indirect effect on wage levels, created this obstacle, is it not reasonable to ask for Government assistance to overcome it?

Although it was not for this reason that the subsidy was first granted in 1942; in those days the Government's aim was to maintain a fixed price level; in the years that hove followed the upward movement of costs has removed all hope of any sort of price stability, or any hope of matching production costs with an acceptable retail price level.

ORIGIN OF DAIRY SUBSIDY IN AUSTRALIA

The present series of "Stabilization Schemes" were not the industry's first experience of Federal intervention.

OUR FRONT COVER

These young Jersey bulls, recently selected by a special committee as additions to the bull team standing at the Artificial Breeding Board's Bull Centre at Northfield, are now undergoing routine tests before being put into service. The group consists of RANDERS ECHO *(Hansen & Sons, Eudunda),* GARFORD ROYAL BANNER *(M. C. Garrard, Watervale),* GUMRELLA PETAL'S COUNT *(L. K. Richter, Reeves Plains), and* MANNANARIE PRIM'S PRIDE *(V. A. Robinson, Jamestown).*

Prior to World Wor II control of dairy prices in Australia was confined to a form of "equalization", originating in the "Paterson Plan", by which the returns from a high domestic price and a low export price were pooled to give an overall price higher than "parity" (i.e. world price).

In 1942, in order to maintain the level of food production, the Federal Government decided, as a temporary expedient for the relief of the industry, to grant a subsidy of £1,500,000 for the last nine months of 1942-43. The Government intimated that the subsidy should be regarded as an interim payment pending a re-examination of domestic prices for butter and cheese.

In March, 1943, the dairying industry submitted to the Commonwealth Prices Commissioner a case for an annual subsidy of £6,500,000 to ensure an average return of 18d. lb. c.b. A subsidy of this amount was granted for the 12 months commencing 1/4/43.

This was followed by a 2-year stabilisation scheme, and since 1947 by a series of 5-year schemes. From 1943-44 to 1948-49 a subsidy was also paid on whole milk.

The subsidies paid in each year were:

	Manufacture	Whole Milk
July 42—March 43	£1,289,000	——
April 43—March 44	6,181,000	£319,000
April 44—March 45	5,917,000	1,786,000
April 45—March 46	3,966,000	2,320,000
April 46—March 47	2,531,000	2,249,000

FIRST 5-YEAR PLAN

(Returning cost of production on all output)

(States fix domestic prices)

April 47—June 48 (15 months)	£6,634,000	£2,157,000
July 48—June 49	4,553,000	564,000
July 49—June 50	8,473,000	——
July 50—June 51	14,816,000	——
July 51—June 52	17,274,000	——

SECOND 5-YEAR PLAN

(Returning cost of production on home consumption + 20%)

(Commonwealth fixes domestic prices)

July 52—June 53	£15,263,000	——
July 53—June 54	15,469,000	——
July 54—June 55	16,081,000	——
July 55—June 56	14,500,000*	——
July 56—June 57	13,500,000*	——

(* Government abandoned cost of production basis and granted a fixed subsidy only.)

THIRD 5-YEAR PLAN

(Fixed subsidy)

(Commonwealth fixes domestic prices)

July 57—June 62 (each year)	£13,500,000	——

FOURTH 5-YEAR PLAN

(Fixed subsidy—guaranteed return 40d. lb. c.b.)
(Industry fixes domestic prices)

July 62—June 67 .... £14,000,000 ——

SUBSIDIES IN OTHER DAIRYING COUNTRIES

As in Australia, prior to World War II there was little or no direct subsidization in other dairying countries, but in the post war period probably every major dairying country has adopted one or more forms of direct or indirect support, although many of the schemes do not include actual subsidization from government funds. Whatever the form of the schemes, the intention has generally been to improve or stabilize the income of the dairy farmers relative to that of the rest of the community and, except on economic grounds, there has been little criticism of these schemes.

However, in many cases the schemes have also resulted in, **or been actually designed to cause,** increased production which, in the case of exporting countries, must be sold on world markets, and this increased production has had the result of destobilizing world prices and so reduced or eliminated the income-increasing effect that the schemes were intended to achieve.

This has led to protest, in some cases from exporting countries whose traditional markets have been invaded by newcomers trying to get rid of their subsidy-induced surpluses and in other cases where the relative position of exporting countries supplying the some traditional market has been affected by the use of direct subsidy by some, so giving them an advantage over others who have adopted stabilization schemes without external funds.

RELIEVE **CALF SCOURS** IN HOURS WITH NEW '**NEFTIN**' TABLETS

cours can strike — and spread quickly — at any time, on any farm, even a well-ept farm. Bacterial scours are the greatest health threat to your stock investment. vernight, a scours outbreak can turn profits into losses. Prompt, effective, 'Neftin' eatment is essential if your losses are to be kept to a minimum.

ime is the big factor — both for the infected animals and to prevent spread of the isease to others. 'Neftin' tablets work fast. Relief is apparent in a matter of hours nd calves recover in a day or so.

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

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

our veterinary supplier will advise you that 'NEFTIN' tablets are the modern, fective, economical treatment for calf scours.

Smith Kline & French Laboratories (Australia) Ltd.,
Warringah Road, French's Forest, N.S.W.

SK&F

SKF23a.64.

"PRODUCER" AND "CONSUMER" SUBSIDIES

It must be noted that subsidies are sometimes referred to as either "producer subsidies" or "consumer subsidies", and although there is no agreement as to the exact difference between these terms, a reasonable interpretation results from relating a subsidy to the effect on the producers' returns in relation to world parity prices, so that a "producer subsidy" is one that gives a total return greater than world parity, whilst the home consumer pays parity prices or more; "consumer subsidy" is one that gives a total return higher than the equalised price whilst allowing the home consumer to pay less than parity prices.

The effect of a subsidy depends on the way it is applied and the point at which; when added to an existing price structure it will increase farm income without increasing living costs, when subtracted from an existing price structure will decrease living costs whilst allowing farm income to remain at its previous level. Clearly the first is more attractive to the producer, the second is more attractive to the consumer and the Government, but as we can generally assume that an increase in consumption will result from a reduction in price there will become gain to the producer from the second alternative in an increase in his equalised return, although the amount of the gain will not be predictable with anywhere near the certainty of a direct subsidy, where the amount gained is the actual amount of the subsidy.

THE CASE OF OUR COMPETITORS

Although an examination of the many schemes in use may be of interest from Australia's point of view the most important schemes are those that have been adopted by the countries with which we compete.

Australia's chief competitors on the U.K. butter market are:—

N.Z.	(156,000 tons)
Denmark	(96,000 tons)
(Australia)	(72,000 tons)
Poland	(16,000 tons)
Netherlands	(16,000 tons)
Eire	(13,000 tons)

and on the U.K. cheese market:—

N.Z.	(80,000 tons)
(Australia)	(15,000 tons)
Denmark	(7,000 tons)
Canada	(6,000 tons)
Netherlands	(6,000 tons)

The price supports in these countries for dairy products are:—

N.Z.: Stabilization scheme, government guarantee, no direct subsidy.

Denmark: £A24,000,000 in direct and indirect assistance for dairy produce and whole milk.

Poland: No direct subsidies.

Netherlands: Stabilization fund, government guarantee, no direct subsidies.

Canada: No direct subsidy.

Eire: Direct subsidies—1962-63, £A4,500,000.

ATTITUDE OF AUSTRALIA'S COMPETITORS

The details shown above refer to the present position of traditional dairy exporting countries trading in direct competition with Australia, but there are

a number of other countries which, because of increased production, or in an attempt to correct balance-of-payment positions, have tried to break into traditional markets or to increase their share of traditional markets with heavily subsidized exports.

To counter this type of action the provisions of the General Agreement on Trade and Tariffs (GATT) were strengthened, particularly Article 6, which deals with dumping and the application of anti-dumping duties, and Article 16 which states that subsidies cannot be used to secure more than an equitable share of trade.

The provisions of Article 6 of GATT were also written into the U.K.'s Customs Duties (Dumping and Subsidies) Act, which allows action to be taken "if the export price from the country in which the goods originated is less than the fair market price of the goods in that country."

The implementation of these provisions has been sought on several occasions by N.Z., Denmark, and the (British) National Farmers' Union, and appropriate action has been taken against various countries, but the difficulties of proving a satisfactory case finally led the U.K. in October, 1961 to introduce a system of quotas. The operation of the quota system has stabilized the U.K. market to the extent that prices have risen steadily from 247/- cwt. in September, 1961 to 350/- as shown in the table.

	Butter Prices — Shillings per cwt. — London							
Year	1958	59	60	61	62	63	64	65
Highest	287	409	409	268	314	334	350	350
Lowest	205	287	275	247	282	314	334	350
Average	236	313	308	254	296	325	338	350

CURRENT INTERNATIONAL POLICIES

Although the U.K. quota system has restricted the ability of some countries to derive a quick benefit from subsidized dumping, the countries belonging to IFAP reaffirmed their opposition to subsidy payments at the latest IFAP Conference in December, 1964, where the member countries called for restraint in pursuing further policies of subsidization, on the grounds that "although such subsidization is not an unknown occurrence in international agricultural trade, the systematic expansion of such programmes would be an alarming prospect."

The reasons for this opposition are stated to be not so much the immediate disruption that is caused to world trade but the fact that domestic price support policies lead to unwarranted expansion of production which in turn leads to depressed prices, which generates a demand for further subsidy and so on.

THE FEDERAL GOVERNMENT'S ATTITUDE TO SUBSIDY

Although the existence of the present subsidy appears to indicate Government recognition of the disabilities borne by the Australian dairying industry in its fight against the cost spiral both on home and overseas markets, our hopes for an increase, even though such an increase may be claimed to be justified by the fact that the severity of the cost spiral owes much to the continuation and extension of Federal protectionist policy, must be measured against its possible effect on overseas trade, as stated in the recent warning by the Minister for Trade in these words: "When competing countries pay subsidies they pay from a deeper purse than we can ever possess and if we ever accept it that the competitive position of the product at its end point of sale is to be determined by subsidy, that's a battle that we have no hope of winning. . I say quite clearly that **we can't go in for policies of subsidizing exports ourselves and we must denounce the other fellow for doing the same thing.**"

OTHER FEDERAL BOUNTIES

The dairying industry is not the only industry to receive Commonwealth assistance in the form of bounty or subsidy. The high level of protection given to a major section of Australia's secondary industry against import competition is only a subsidy in another form, and of a magnitude which makes the dairying subsidy microscopic by comparison.

There are, however, a number of industries where the Federal Government has considered it more appropriate to provide encouragement or protction in the form of a direct payment rather than by a tariff, which has the very desirable effect of keeping prices nearer to world parity. In other cases direct payments are made where tariff protection is clearly inappropriate, e.g. petroleum exploration, and there are also examples of direct support for other primary industries.

The amounts of these bounties and subsidies is set out in the following table.

NEW TELEPHONE NUMBER

The telephone number for the A.B. Sub-Centre at Narrung is now MENINGIE 156

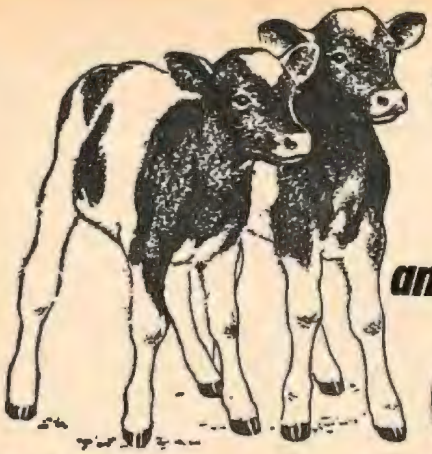
COMMONWEALTH BOUNTIES AND SUBSIDIES CURRENTLY PAYABLE TO AUSTRALIAN INDUSTRIES

Year	Butter Cheese Processed Milk (a)	Cellulose Acetate Flake	Copper	Copper and Brass Strip	Cotton	Gold-mining Industry (c)	Petroleum Search	Phosphate Fertilizers	Pyrites	Rayon Yarn	Ship-Building	Sulphate of Ammonia	Sulphuric Acid	Tractors	Vinyl Resin	Wheat	Wool Use Promotio
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
1939-40	—	—	—	—	—	—	—	—	—	—	—	—	—	6,400	—	—	—
1940-41	—	—	—	—	—	—	—	—	—	—	—	—	—	6,750	—	—	—
1941-42	—	—	—	—	—	—	—	—	—	—	—	—	—	1,108	—	—	—
1942-43	1,186,306	—	—	—	—	—	—	—	—	—	—	—	—	850	—	—	—
1943-44	7,346,120	—	—	—	—	—	—	—	—	—	—	—	—	5,652	—	—	—
1944-45	5,152,872	—	—	—	—	—	—	—	—	—	—	—	—	13,317	—	—	—
1945-46	6,373,511	—	—	—	—	—	—	—	—	—	—	—	—	10,095	—	—	—
1946-47	1,738,740	—	—	—	—	—	—	—	—	—			—	22,955	—	—	—
1947-48	7,017,886	—	—	—	—	—	—	—	—	—			—	19,978	—	—	—
1948-49	4,652,951	—	—	—	—	—	—	—	—	—			—	37,146	—	—	—
1949-50	8,008,500	—	—	—	—	—	—	—	—	—			—	54,472	—	—	—
1950-51	14,997,980	—	—	—	—	—	—	—	—	—			—	89,898	—	—	—
1951-52	17,843,396	—	—	—	—	—	—	—	—	—	(b)		—	102,621	—	—	—
1952-53	15,718,800	—	—	—	—	—	—	—	—	—			—	38,182	—	—	—
1953-54	15,399,879	—	—	—	17,651	—	—	—	—	—			—	145,141	—	—	—
1954-55	15,749,998	—	—	—	25,243	97,019	—	—	—	11,890			306,305	81,787	—	—	—
1955-56	14,499,587	—	—	—	67,284	401,055	—	—	—	38,294			512,471	55,035	—	—	—
1956-57	13,499,974	179,117	—	—	150,665	495,496	—	—	—	59,928			420,652	158,303	—	—	—
1957-58	13,500,000	110,650	—	—	64,702	659,634	263,634	—	—	86,871	1,858,442	—	708,654	467,088	—	—	—
1958-59	13,500,000	110,022	768,329	—	139,454	898,424	463,385	—	—	69,189	1,800,000	—	1,300,656	415,152	—	—	—
1959-60	13,500,000	128,382	407,526	—	214,456	838,382	359,893	—	—	71,500	1,842,000	—	1,480,638	621,212	—	—	—
1960-61	13,500,000	127,428	404,853	—	373,487	698,658	1,399,180	—	85,842	72,141	3,000,000	—	1,353,249	940,663	—	—	—
1961-62	13,500,000	69,178	686,451	—	315,105	659,364	2,542,949	—	396,951	69,155	1,686,102	—	1,008,908	876,518	—	11,906,132	—
1962-63	13,784,236	101,159	698,685	18,512	287,077	791,233	4,999,694	—	398,229	135,021	1,928,994	179,753	1,094,479	963,147	—	7,287,784	—
1963-64	13,899,824	108,725	694,524	61,746	473,447	748,323	4,716,883	9,403,343	614,153	—	2,368,148	159,033	1,157,478	1,006,526	114,151	11,317,433	—
1964-65 (Estimate)	13,850,000	47,000	404,000	53,000	1,100,000	710,000	5,000,000	11,250,000	644,000	—	2,183,000	386,000	973,000	1,292,000	722,000	500,000	4,600

(a) Before 30th June, 1952, the bounty to the dairy industry was paid on processed milk products as well as butter and cheese. No bounty on proces milk products was paid from 1st July, 1952 to 30th June, 1962. The current bounty on processed milk products commenced on 1st July, 1962, the amounts being 1962- £284,456; 1963-64, £399,624; 1964-65 (estimate), £350,000.

(b) Prior to the establishment of the Australian Coastal Shipping Commission during 1956-57, the Commonwealth purchased Australian-built ships, operation by the Australian Shipping Board, at cost without formal determination of subsidy. Full details of subsidy are not therefore available in respect of these ye but during the period 1946-47 to 1956-57 inclusive, subsidy to the extent of approximately £2.6 million was paid on 13 ships purchased by other owners. Sh built for the Commission are eligible for subsidy in the same manner as those for private shipowners.

(c) Includes Gold Mines Development Bounty from 1st July, 1962, the amounts being, 1962-63, £80,000; 1963-64, £79,000; 1964-65 (estimate), £150,000.



Watch your poddies . . .

and your profits . . .

GROW!

Kaf-O-Milk is the complete calf milk that begins to build good milkers . . . and sturdy mothers . . . right from the start. Kaf-O-Milk is a balanced blend of 14 ingredients including a body building meal which is made readily digestible by the inclusion of three essential enzymes.

Giving the rumen an early start

Kaf-O-Milk should be fed from the fourth day. When a calf is naturally ready, there is sufficient "body" in the diet to start the rumen working, promoting rapid development and a strong constitution.

One factory . . . Strict quality control

Kaf-O-Milk is made only by the D.H.A. Rural electronically controlled feed mill. Every batch is true to formula, every ingredient thoroughly dispersed to ensure complete uniformity in the diet.

Maximum feed conversion . . . greatest economy

You'll get healthier development and better herd stock with Kaf-O-Milk at a fraction of the cost of feeding whole milk. Kaf-O-Milk has proved to be a profitable investment for dairy farmers everywhere. Order a trial batch now and watch your poddies . . . and your profits . . . grow!

DHA

KAF-O-MILK

Packed in 50 and 100 lb. Polyethylene-lined bags

MILK REPLACER
FOR CALVES AND PIGS

A product of
DRUG HOUSES OF AUSTRALIA LTD.
RURAL DIVISION

Distributed in South Australia by BENNETT & FISHER LIMITED

Statistics

ADELAIDE METROPOLITAN MILK SUPPLY AREA

PRODUCTION (000 gallons)

	For Month		Total since July 1		Total since Jan. 1	
	1964	1965	1963/64	1964/65	1964	1965
April	2,752	2,854	38,018	42,030	12,463	13,519
May	3,187	3,117	41,205	45,147	15,650	16,636

SALES (000 gallons)

	For Month		Total since July 1		Quota %		C.M.B.	
	1964	1965	1963/64	1964/65	1964	1965	1964	1965
April	1,694	1,706	16,338	16,755	61.6	59.8	2/10¾	2/9½
May	1,664	1,764	18,002	18,520	52.2	56.6	2/4	2/6¼

Moving Average Quota for 12 months ended 30/4/65, 41.45%; 31/5/65, 41.53%.

INTERIM PRICES TO LICENSED SUPPLIERS

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

1965	Basic	C.M.B.	Total	3%	3.5%	4%	4.5%	5%
	(per lb. butterfat)			(per gallon)				
April	3/9¾	2/9½	6/6¾	2/0½	2/4½	2/8½	3/0½	3/4¼
(cents)	38.12	27.60	65.73	20.35	23.68	27.13	30.53	34.85
May	3/10¾	2/6¾	6/5½	2/0	2/4	2/8	3/0	3/4
(cents)	38.96	25.63	64.58	19.99	23.26	26.66	29.99	33.32

LONDON PROVISION EXCHANGE QUOTATIONS

(Sterling Currency)

	April		May	
	1964	1965	1964	1965
Butter—Choicest Australian	334/–	342/–	334/–	331/–
Cheese—First Grade Australian	236/–	255/–	238/–	245/–
Rindless Australian	244/–	265/–	246/–	260/–

APRIL PRODUCTION RECORD

Despite the absence of worthwhile early rains, milk production in April, which is the critical month of the year, was higher than ever before, and continued the spectacular rise in lean-period production which has been the feature of recent years. Although the annual production since 1957 hos increased 1¾ times, April output is now more than twice the figure it was at that time.

Certainly the licensed dairy farmers in the metropolitan supply area have paid for many years ahead the spectre of a shortage of city supply. The current production was higher by 43,000 gallons per day than metropolitan consumption and, according to forecasts made by the Milk Board in 1961, sufficient to supply the city until 1982, and still leave a daily safety margin of 10,000 gallons, even if no further increase occurred, which seems unlikely.

METROPOLITAN MILK SUPPLY AREA

Milk Production in April (thousand gallons)

1957	1958	1959	1960	1961	1962	1963	1964	1965
1,415	1,506	1,851	1,858	2,065	2,323	2,383	2,752	2,854

Foot and Mouth in U.K.

Foot-and-mouth disease was confirmed in April on a farm in Kent. Thus ended the longest spell free from the disease since 1908; and the last outbreak was in Wales in 1962.

The outbreak involved a 150-strong herd. All animals were slaughtered, including 63 cows in milk.

PROGRESS ON RESEARCH PROJECTS

An important part of the Australian Dairy Produce Board's function is the administration of a research programme which embraces many aspects of dairy farm and dairy food manufacturing research, and which is financed by a levy on dairy farm production and a similar contribution from the Federal Government.

This year the projects wholly or partly sponsored by the Board were reviewed at a Seminar in Brisbane. This Seminar provided an ideal medium for the exchange of knowledge and it is envisaged that one will be held every year from now on.

This paper is a brief review of some of the more important matters discussed and papers submitted.

More complete summaries of specific papers may be obtained by members of the industry, on a confidential basis, by writing to the Director of Technical Development at this address.

Research From Industry Funds
Manufacturing Research Seminar in Brisbane

By L. F. Gunnis and G. Loftus Hills

The co-ordinating role played by the Dairy Produce Board in dairy manufacturing research in Australia has led to a most valuable development—the holding of an annual seminar at which research results from the nine or ten research centres are reported and considered, ideas for future work are exchanged, and much mutual stimulus imparted by discussion of the rapid developments taking place in this field. The most recent of these seminars, held in Brisbane at the end of April, was extended to three days so that dairy farm research projects bearing most closely on dairy manufacturing practice could also be reported and discussed. Mr. J. P. Norton, vice-chairman of the Australian Dairy Produce Board, expressed the response of all attending the Seminar when he said, "This was a most lively, progressive and informative discussion. If dairy farmers who provide the funds for these research activities had been present they would have been impressed not only by the breadth and depth and good balance of both applied and fundamental work, but also by the enthusiasm, the keen thinking and the energy with which the problems are being tackled."

CREAM AND BUTTER

The subjects of the first session were cream and butter. Miss Lorna G. Light body of the Queensland Department of Primary Industries reported investigations into the bacteriological characteristics of cream degraded on arrival at the factory. While the most common spoilage organisms were gram-negative contaminants, creams also tended to drop rapidly in quality once they become acid, due in part to the development of oxidative changes. A temperature of 50°F appeared the most suitable for the farm storage of cream. Mr. W. A. Allaf outlined work, which is just beginning, on factors affecting oxidative deterioration in farm cream.

PESTICIDE RESIDUES

The attention of food authorities throughout the world has been concentrated for some time on the presence of pesticide residues in foods. The requirements

dairy products in some markets, particularly the U.S.A., are very strict. The Queensland Department of Primary Industry has been carrying out an Australia-wide survey of the incidence of chlorinated hydrocarbon residues in butter. Mr. R. J. Park stated that the level had shown a general decline since legislation was introduced in 1962-63 to prohibit the use of these insecticides in cattle dips. The resultant change to the use of organophosphates has now made it necessary to analyse for this insecticide (or its metabolites) as well. He described the techniques used for analysis.

DETERIORATION OF BUTTER

Mr. P. W. Parodi of the Butter Marketing Board reported a series of studies on factors affecting the keeping quality of butter in cold storage. Any or all of the several reducing systems present in butter might be expected to counter oxidative deterioration, but they were found to be without effect. The oxidative stability of the butterfat itself, which was found to vary regionally and seasonally throughout Australia, was not correlated with either its tocopherol content or its content of unsaturated acids. Over two seasons the copper content, one of the major factors controlling deterioration of butter in cold storage, had, according to Mr. Parodi, ... "been found to show a heartening improvement as the industry responded to the recent emphasis on eliminating copper in farm and factory."

BUTTER WRAPPINGS

The nature and quality (including the copper content) of the paper used for wrapping butter has been under discussion in Australia for some time. Several such papers were tested, under retailing conditions of temperature and lighting, by Dr. G. J. Smith and Mr. C. W. Lattimore of the New South Wales Department of Agriculture. Parchfoil gave almost complete protection in light or in dark, parchmentine caused more severe deterioration than parchment in the dark, but both allowed rapid and serious deterioration under retail lighting conditions. The off-flavours extended from the surface into the core of the print butter.

WEED TAINTS

In Queensland weed taints remain a major problem in butter quality. Mr. R. J. Park reported studies on the nature of the tainting compounds derived from the weed. He showed that benzyl thiocyanate can be formed in the major tainting weed **Coronopus didymus** (bitter cress, lesser swine cress) and when fed to the cow this compound caused typical taint in the cream. On heating of the cream during processing the thiocyanate could be altered to the mercaptan. Likely tainting compounds were suggested for several other weeds. Mr. J. Armitt described the work that has been done on the control of weeds on the farm. His general conclusion was that measures designed to improve pastures to give higher return per acre are the ones that most assist to eliminate weed taints. The Queensland Department of Primary Industry has not been content with chemical and farm studies on weed taint. Mr. W. C. T. Major has also been working on methods of cream treatment which may diminish or eliminate the flavour in tainted cream. Experiments at Boovol with very high temperature short-time treatment of the cream had given most promising results. Grade points of the butter were 2 to 2½ points higher than those of normally treated controls. The method of treatment gave better grades even with weed-free butter.

EFFLUENT DISPOSAL

As dairy factories increase in size and become more diversified in manufacture, the problem of effluent disposal, without nuisance or biological hazard,

becomes steadily greater. Mr. C. D. Parker, a consulting engineer with much experience of effluent problems in other industries, is undertaking a survey of effluent disposal methods and difficulties throughout Australia. This is the first step in a programme of research which should provide the Australian dairy industry with valuable information and a centre for advice and consultation on these matters. Mr. Parker reported the work he has done to date, including the giving of advice where urgent problems existed, and illustrated the results of his survey with slides.

CASEIN

The final paper on the first day of the Seminar was by Mr. L. L. Muller of the Division of Dairy Research of C.S.I.R.O. He dealt with work on what are now two major products of the industry, casein and recombined sweetened condensed milk. While processes for the manufacture of casein in Australia now operate very efficiently, the product retains the characteristic high viscosity of casein in solution which is a disadvantage in use in the modern high-speed paper-coating machines. An enzyme- treatment method for the reduction of the viscosity of the casein has been developed and tested on the commercial scale and shows considerable promise. The process may also be of value in the manufacture of edible caseins and caseinates.

RECOMBINED CONDENSED MILK

Mr. Muller also described the development of the process for recombined sweetened condensed milk, the characteristics needed in the raw materials, particularly the skim milk powder, and the laboratory methods which had been developed to screen the raw materials. He showed slides of the new Asian plants, in Bangkok and Singapore, at the starting up of which he had borne a large share of the responsibility of translating a pilot plant process to full commercial operation.

Mr. Muller remarked: "To start up a new process anywhere is difficult; to start it thousands of miles from home base in a country with little or no dairy know-how and with a mainly non-English-speaking staff who have never previously seen butteroil or skim milk powder, is quite a challenge. But the process is good and the plants are now working well."

BLOOD PROTEINS AND MILK YIELD

The second day of the seminar was devoted to dairy farm research. Mr. L. F. Baily outlined earlier work on the association between the type of transferrin, a blood protein, which the cow possesses and its yield of milk or butterfat. His own observations in South Australia, so far on a preliminary basis, had shown a correlation between the presence of transferrin type D and higher fat percentage, but not with yield.

ANTIBODY PRODUCTION IN THE UDDER

Professor A. K. Lascelles and Mr. P. M. Outteridge, of the Dairy Husbandry Research Foundation, gave a comprehensive account of the immune properties of the mammary gland. They outlined the difficulties of deciding whether antibodies secreted in the milk are in fact synthetized in the udder, as Professor W. E. Petersen has maintained, and described experimental techniques they had developed to study this point. Using sheep as the experimental animals they showed that injection of various killed bacterial cultures into the involuting gland gave far more production of antibody than injection into the lactating gland. When staphylococcal antigens were infused into the mammary glands of pregnant ewes and these were subsequently challenged during the next lactation, rather dramatic responses were obtained, a result which could well bear upon the problem of staphyococcal mastitis in the cow.

MILK FAT FORMATION

Another aspect of the functioning of the mammary gland, the synthesis of milk fat, was dealt with in a further paper by Professor Lascelles and Mr. P. E. Hartmann. Their work has shown that phospholipids, cholesteral esters and cholesterol are not taken up by the lactating mammery gland and that plasma triglycerides and free fatty acids are the main sources of that part of the milk fat derived from the plasma. In studies on the source of the plasma triglycerides and the effect of the feed on these, it was found that most if not all of the fat in the feed absorbed by the gut passes by way of the lymph stream to the blood. As much as 500 g. of triglycerides is transferred each day, in the form of chylomicrons, to the blood of cows grazing pasture only.

STREPTOCOCCAL MASTITIS

While it is commonly assumed that staphylococcal mastitis is increasing in relative incidence, Professor J. Francis of the University of Queensland reported that in a survey carried out in the Brisbane area by Dr. A. J. Frost, a majority of the milk showing excessive leucocyte counts were found to contain **Streptococcus agalactiae.** In another study of 16 herds, this organism was found to be the major cause of udder trouble in 13. The major point made by Professor Francis is that mastitis caused by **Str. agalactiae,** unlike that caused by staphylococci, can readily be eliminated by suitable herd treatment with antibiotics. Full use of this technique would eliminate half the mastitis in Australia.

TROPICAL LEGUMES

Amongst the problems facing dairy production in Queensland has been the failure hitherto to find legumes which will grow adequately and reliably with the grasses under dry-farming conditions.

The work that has been going on for many years in seeking legumes suitable to the soil and climate is now bringing most promising results. In experiments on farms in the coastal district north of Brisbane, production has been increased by as much as 200 per cent. The most imortant legumes are desmodiums, glycine, siratro, stylo, **Lotonis bainesii, Dolichos coxillaria** and **Vigna marina.** Mr. P. E. Luck and Mr. N. J. Douglas of the Queensland Department of Primary Industries, in reporting this work, stated that pasture establishment costs were about £18 per acre, with £3-£4 annual maintenance and that yields of 150-200 lbs. of butterfat per annum are to be expected. They expect that about 1,000 farms in the district will be making use of the new pastures within several years, and that "the resultant improvement in dairy production will be fantastic."

FEEDING TECHNIQUES

Mr. J. G. Young and Mr. I. H. Raynor described farm survey work in the Darling Downs directed to improvement in feed production and feeding practices. They have found that green lot production allows carrying capacity to be increased by 50% and per cow production by 20%. In the Callide Valley studies of the economics of irrigation left several questions open as to the best method of use of irrigation. Good condition of the cow at calving was again shown to be a major factor in production. The assumption that the autumn decline in milk yield is due mainly to a shortage of protein in the diet must be queried as a result of recent feeding tests.

DETERGENTS AND SANITIZERS

Mr. R. Twomey, who is working for the New South Wales Department of Agriculture at Hawkesbury Agricultural College, described the work he has been

undertaking on the routine testing of commercial detergents, the factors affecting cleaning efficiency, the development of new cleaning systems and of new sanitizers and detergent-sanitizers. The testing apparatus devised by Dr. Whittlestone has been further improved and gives consistent results. Little difference has been found between the major types of detergents. Enough information is now available to establish standards for detergents, but such standards would need to be composite since manufacturers now sell cleaning systems rather than detergents. Tests on factors affecting removal of protein and mineral matter from machine surfaces were conducted . These included additions of gluconate and E.D.T.A., and variations in the alkaline constituents, including the use of sodium silicate. Mr. Twomey gave formulae for detergent combinations he had found most effective in cleansing efficiency, in lack of corrosion, and in avoidance of undue frothing. He discussed optimum temperatures for various methods of cleaning.

SUB-CLINICAL MASTITIS

Observations in New South Wales, which are being confirmed by similar studies in other States, of both the widespread incidence of sub-clinical mastitis (40-50% of all cows) and the serious effect of such chronic udder infections on the composition of the milk were reported by Mr. Twomey and Mr. B. O. E. Calder. Their observations were related particularly to the relationship between positive California Mastitis Tests and the solids-not-fat content of the milk, and for all age groups of the cows studied, the average s.n.f. value for infected cows was significantly lower than the average for healthy cows. In spite of the high incidence, only two out of hundreds of farmers in one survey were aware of any mastitis problem in their herds.

SOUTH AUSTRALIAN WORK

Mr. A. G. Itzerott of the South Australian Department of Agriculture outlined the dairy farm research projects under way in that State. The major investigations are concerned with productivity of fodder crops, field intake and utilization, and the reasons for variation in milk and butterfat production.

TESTING MILK QUALITY

In the final session of the second day of the Seminar, the centre of attention moved again towards the dairy factory with two papers on aspects of testing milk quality. Miss P. Loane of the Queensland Department of Primary Industry stated that over the past three years the incidence of positive residual penicillin tests in milk has considerably decreased. Inhibitory substances other than penicillin occur quite frequently however, and the nature of these requires further investigation. Mechanical refrigeration of bulk milk on the farm renders the usual methylene blue test a rather ineffective measure of the level of farm hygiene. A combination of methylene blue test and nitrate reduction tests after a preliminary incubation at 60°F for 24 hours gave much more satisfactory results. The extent of ascorbic acid oxidation in the refrigerated milk has been found to affect the results of the methylene blue test.

TESTING FOR COMPOSITION

Rapid methods for testing the composition of milk, particularly the protein and solids-not-fat contents, have been under investigation by Dr. S. Bakalar of Hawkesbury Agricultural College for some time. For protein determination the ultra-violet fluorescence method and an automatic formal titration have been given most attention. With the latter, rapid and accurate determinations are already possible.

The third day of the seminar was devoted entirely to applied and fundamental problems related to dairy manufacture. These covered flavour chemistry,

the chemistry of casein, biochemistry of cheese, manufacture and naturation, and the development of new foods from milk.

FLAVOUR PROBLEMS AND TECHNIQUES

Elucidation of the chemistry of flavours in dairy products, a fundomental step towards their control, has for the most part only been possible in recent years with modern techniques. These continue to advance rapidly, and to work in this field ot maximum efficiency it is necessary to keep up with these new techniques. Mr. D. A. Forss, of the Division of Dairy Research of C.S.I.R.O., who recently returned from a yeor with the U.S. Army defence food laboratories at Natick, described the most up-to-dote methods available. These include feeding the constituents of a flavour extract, separated from each other by gas chromatography, directly into a mass spectrometer to determine their chemical structure and composition. Thin layer chromatography is another most valuable technique in separation and identification of flavouring compounds.

GLUEY FLAVOUR IN CASEIN

Dr. E. H. Ramshaw, also of the Division of Dairy Research of C.S.I.R.O., outlined progress to date in his investigation of the gluey flavour in casein which hampers full exploitation of the considerable potential of the protein for use as o constituent of other foodstuffs. Vacuum treatment removes the odour but not the flavour, the total effect being thus obviously due to more than one compound. The compounds have proved particularly recalcitrant in isolation and identification, but promising clues as to their identity have recently been obtained.

KAPPA-CASEIN

The component of casein acted on by rennin, and thus responsible for coagulation in cheesemaking, is known as Kappa cosein. This component of casein is itself a mixture of genetic and other variants and recent studies in various centres throughout the world have hitherto tended to make the picture steadily more complicated. Dr. R. G. Wake of the Biochemistry Department at Sydney University reported to the seminar the results of his investigations which start to bring order and clarity into our knowledge of this protein. He prepared a derivative of Kappa casein and subjected it to electropheresis on starch gel and to chromatographic separation. His major finding is that the protein is heterogenous in carbohydrate content, but that carbohydrate is not essential to its stabilizing action on the casein micelle. The action of rennin is to split off the part of the molecule to which carbohydrate may or may not be attached, and which itself has genetic variants. The residual portion of the molecule also appears to have variants arising from amino acid substitution in this part of the chain.

GROWTH OF STARTER CULTURES

Not only is strong and reliable growth of lactic acid cultures essential to the cheesemaking process, but continued viability of the organisms for some time in the maturing cheese also seems to be necessary for the development of good flavour. For unknown reasons some cultures die out rapidly, and greater understanding of factors affecting their growth and resistance is therefore needed. Some cultures produce hydrogen peroxide. Dr. G. R. Jago, working at the School of Biochemistry at Melbourne University has studied the concentrations of peroxide needed to inhibit growth, the conditions which control the extent to which peroxide is formed, and the mechanism of this control through the known metabolic pathways.

LIPASE IN CHEESE RIPENING

The flavour of a matured cheese comes in part from the breakdown of butterfat. The enzymes responsible for this breakdown are probably of microbial origin, but they have not been studied because there has been no method known to isolate them from the cheese and purify them. Mr. K. Scott of the Queensland Department of Primary Industries has, partly from work with model systems using esterases, and partly by preparing extracts from cheese, made some progress in an attack on this problem. He is also studying the effect on maturation of adding various bacterial liposes to cheese.

SOFT CURD IN CHEESEMAKING

For many years certain areas have reported seasonal difficulties in cheesemaking arising from an undue softness of the curd. Similar effects occur in other cheesemaking districts throughout Australia. Studies reported by Mr. A. Hehir of the South Australian Department of Agriculture sought to link this phenomenon with variation in composition of the milk. Initial work showed an association between softness of curd and high chloride content, low titratable acidity, low protein and low lactose. In the more recent work the association with pH is more marked, the milks which did not set averaging pH 6.78. While the leucocyte counts did not fully confirm the suggestion in these findings that sub-clinical mastitis might be largely responsible for the difficulties, this conclusion was strongly supported in discussion following the paper.

NEW DAIRY PRODUCTS

In the final session of the seminar there were two papers on the development of new dairy products. Mr. C. G. Crittall of the Queensland Department of Primary Industries has been directing pilot commercial manufacture of fruit-flavoured cottage cheese. Another investigation has been directed to delaying flavour release in ice-cream so that a double flavour effect is achieved.

Mr. R. A. Buchanan of the C.S.I.R.O. Division of Dairy Research reported progress with the monufacture of butter powder, which has now reverted to the usual pilot-plant developmental stage, the attempt at short-circuiting this to meet a special commercial emergency having proved unsuccessful.

Mr. Buchanan has prepared a co-precipitate of the serum proteins of milk with the casein, gathering 97% of the total milk protein. The material can be dissolved in sodium tripalyphosphate and spray dried and in this form is at least as useful as casein as an additive to small goods. It is also an effective additive to bread. A recombined whipping cream has been produced which not only whips well but gives a particularly stiff and stable froth free from serum "weeping" and thus technically more suitable for use in the pastry making trade than normal cream, which has in fact been largely displaced by more stable artificial products. Consideroble success has also been achieved with work on a spray-dried readly dispersible coffee cream, a cereal based baby food for Asian countries containing skim milk powder and a special ice-cream for phenylketonurics. Difficulties experienced in most Australian cities at some time of the year with the frothing of milk in "Esspresso" coffee machines was traced to the presence of mono- and di-glycerides arising from lipase activity. Lipase activity may be increasing with the spread of bulk collection of milk.

— — — — — —

Summaries of the papers submitted this year may be obtained (on a confidential basis, since much of the work has not yet reached scientific publication) by writing to the Director of Technical Development, Australian Dairy Produce Board, 406 Lonsdale Street, Melbourne.

A.B. NEWS LETTER

A SUCCESSFUL YEAR COMPLETED:

The Artificial Breeding Board's team of inseminators under the leadership of the Director, Mr. W. K. Rose, completed another successful season in the year just ended.

New inseminations reached 21,098, compared with 18,836 in the previous season and 16,170 in 1962-63. The total of all inseminations for the year was 33,427, to perform which inseminators covered a total distance of 239,526 miles, an important consideration in costs associated with bringing A.B. to the widely spaced farms in S.A.

The main thing is that more farmers are making use of the A.B. Service.

"GREATEST SINGLE ADVANCE"

A.B. has been the greatest single advance in the livestock field, according to the director of the Graham Park Stock Breeding Centre, Berry, N.S.W., Mr. B. J. Doyle, who claimed that, as well as being of great practical value, A.B. had stimulated and enabled research to be done on many topics not possible before.

In the U.S.A., A.B. has passed its 25th year. At the start, the organised program had 228 cows inseminated per sire but 3,000 in 1964.

In 1947, 27 million milk cows produced 125 thousand million lbs. of milk a year. In 1965, fewer than 17 million cows produced the same quantity.

Average production per cow has increased about 2,000 lb. milk in the past ten years in the U.S. However, although the human population has now passed 190 million, low consumption of dairy products is a sore point in the industry, and butter consumption has dropped from 18 lb. to 8 lb. a person in ten years, due in part to the scare notices about cholesterol and heart diseases.

A.B. COW SETS S.2 RECORD:

In N.S.W., a Jersey cow, Winsome Park Gold Beryl owned by E. J. Brooks, of Scone, set up a new senior two-year-old record with 12,220 lbs. milk, 6.0 p.c. test and 737 lbs. butterfat.

Gold Beryl is a daughter of Merriland Gold Spot (imp. N.Z.) and Francliff Beryl 86th. The sire is an A.B. bull with the rating, RGV of milk 101, 106 fat, 4.8 p.c. test with a weight of 18.

In this State and elsewhere, A.B. bred stock are looked at critically in the show ring and in production.

A.B. STOCK SELL WELL:

Dairy stock bred by A.B. receive special mention when offered in the sale ring.

There is no special magic about this; nothing odd about A.B. bred stock, but auctioneers, sellers and buyers recognise, in the term describing the breeding, a certain seal of quality.

In many places where A.B. is used extensively and accepted in an every-day manner, stud breeders have found their sales of bulls falling. The falls may be only in the lower bracket bull lines, but certainly the studs find increased demand for heifers and cows and studmasters find these sales off-set minor losses.

The commercial producer who uses A.B. can also share in this demand for well bred female stock. He can sell his surplus heifers or cows and command good prices, even a premium, because of the favourable association of A.B.

The average farmer who uses the Artificial Breeding Board's service in S.A. gets the use of a better bull than he can buy, as a rule.

Sometimes the dairy farmer buys a winner but more often it is the other way round.

If a farm has not a bull or bulls on the place, it is capable of carrying more females, and the owner is able to spend a little time, caring for bull calves and keeping them a little longer than a bare day or two, to get a better price.

It does not matter whether the stock are A.I.S., Jersey, Guernsey, Friesian or a calf from a dairy cow by a beef sire, the artificially bred animals have got something that makes them superior to the naturally bred animal.

ROUTINE TESTING BEATS INFERTILITY IN U.S.A.:

Money is barely mentioned in an article in the American A.I. Digest which tells of the importance of maintaining high fertility. The first step is the routine, regular examination organised to occur under schedule in relation to a regular visit by a veterinarian.

If the herd owner is ready for the visit, he will have his "patients" ready in the barn, tied or yarded. Cows to be examined are those which are non-cycling, those with abnormal cycles, cows having some abnormal reproductive occurrence or cows which are breeding regularly but not conceiving.

A not-too-complex card system adds to the value of the plan particularly when coloured tabs are incorporated on each cow's card to show how problems are being handled.

PRODUCTION BACKING FOR LICENCES IN U.K.:

From January 1, 1966, general licences will not be issued for Ayrshire, British Friesian, British Canadian Holstein-Friesian, Red and White Friesian, Guernsey and Jersey bulls, states the Ministry of Agriculture. Unless they reach the standards prescribed for a dairy licence, bulls may be refused a licence.

Previously a general licence was issued on conformation but this sounds more exacting and rather strange to the S.A. dairy scene.

CHAROLAIS GO TO ISLE OF MAN:

Another 26 Charolais, comprising 24 heifers and two bulls, are to be imported into the Isle of Man, where a Charolais Cattle Society has been formed. The animals will be kept on French farms during the summer and after a month in quarantine in England will be sent to the island about December.

INTERSTATE MARGARINE SOLD IN S.A.

Although the South Australian Margarine Act limits the production of table margarine to 528 tons annually, the manufacturing licences for which are granted to two local firms, at least two brands from interstate are now selling here, presumably in the belief that they are protected by Section 92 of the Commonwealth Constitution.

Representatives of the State Dairy Produce Board have already conferred with the Minister for Agriculture (the Hon. G. A. Bywaters) as to what action is intended by the Government to maintain the production quota, but the results of this conference have not yet been released. However, the reply to a question asked recently in the House of Assembly by Mrs. Byrne, M.P., appears to indicate that the Minister will not allow this action to go unchallenged.

In his reply the Minister said: "I think from memory the present quota for margarine for this State is about 550 tons. This quota is allocated to Unilever, which I believe has one of the smallest quotas in Australia but the only quota in South Australia. The Government has not yet considered increasing the quota, although there has been considerable pressure from three separate margarine makers for an increase. They have stated their case, and I have listened to them without committing the Government in any way. I understand there is a big demand for margarine known as poly-unsaturated fat, for which there are different trade names. Yesterday I saw a large advertisement in the Advertiser stating that it was intended to supply this in South Australia. This is not without my knowledge, but it is certainly without my blessing. If this is illegal and any action can be taken, the firm concerned will have to take the consequences. I understand that a High Court decision is pending on whether manufactured are permitted under section 92 of the Commonwealth Constitution to trade in States other than the State in which margarine is manufactured, but I do not intend to comment on that. At this stage, what further action the Government will take depends entirely on departmental investigations into what has transpired."

U.K. MILK BOARD OFFERS BIG PRIZE FOR CATTLE IDENTIFICATION

The Milk Marketing Board of England is offering a prize of £500 for a method of identifying cattle, which in the opinion of the Board, meets a specification which they have prepared.

Closing date for the submission is September 30, 1966. The Board states the approved method could have a market in milk recorded herds amounting to 250,000 cows a year. It could also find application throughout the cattle population where the potential market exceeds two million a year.

Quick and easy identification are the main requirements of any method devised. It must accommodate six characters and be legible from behind the cow—preferably from a distance of four yards. It should also be permanent, suitable for mature and young stock, incapable of causing harm to the animal, and easily inserted or applied by an unskilled person. Any materials used must be non-toxic.

Retail cost must be kept low (e.g. eartags currently in use cost from 9d. to 1/- each).

Specifications are:

OBJECT:

To provide a quick and easy means of identifying any cow or calf from all others.

PURPOSE:

Cows are required to be identified at milking times for the correct allocation of the quantity and quality of the milk produced and for the rationing of feeding stuffs according to yield. Cows and calves (young stock) are required to be identified at other times for breeding and management purposes.

MILKING CONDITIONS:

There are two main variables. The cows may be retained in individual stalls in a cowshed, in which case the milking equipment is moved from one cow to the next. Alternatively, the cows may be kept in a yard from which they are passed through a parlour containing milking stalls or crushes. In the great majority of cases the cow stands with her back to the milker.

YOUNG STOCK:

In the case of young stock and for dry cows, identification is frequently required to be carried out in the open and preferably at a distance.

PERMANENCY:

The method of identification must be permanent and, as far as possible, proof against deliberate removal or alteration.

CLARITY:

The characters (normally three letters and three figures) must be readable from behind the cow and preferably from a distance of four yards.

MATERIALS:

Materials used in the manufacture of the device or the application of the method of identification must be non-toxic and such as to have no deleterious effect on the animal.

EASE OF APPLICATION:

The device or method must be able to be inserted or applied quickly and easily by an unskilled person.

DAMAGE:

The device or method of identification must not be unsightly and must not cause harm to the animal.

COST:

Cost is an important factor and must be kept low, e.g. eartags at present in use cost from 9d. to 1/- each.

MARKET:

The potential market in England and Wales for a method of identification meeting these specifications is 250,000 a year in milk recorded herds alone. This represents only a quarter of the total dairy cattle and with beef cattle and other livestock the potential market is likely to exceed two million a year.

'HIBITANE' Udder Wash

Control mastitis – get the 'HIBITANE' habit

'Hibitane' Udder Wash and Dairy Sanitizer effectively prevents the spread of mastitis. It reduces to a very low level the population of mastitis-causing bacteria on udders and teats.

'Hibitane' remains active for long periods, unaffected by milk or organic matter, won't irritate, taint or discolour milk.

Buy 'Hibitane' from your ICI supplier, in the new convenient plastic pack. It's economical — each capful makes 2 gallons of udder wash at 2d. per gallon. Screw cap is a handy ½ fl. oz. measure. Get the 'Hibitane' habit — soon!

ICI

IMPERIAL CHEMICAL INDUSTRIES OF AUSTRALIA & NEW ZEALAND LTD.

SKIM POWDER SHORTAGE HAMPERS UNICEF PROJECTS

The milk schemes in India and Pakistan have done much to bring a milk of sound hygienic and nutritional quality at reasonable price to the city millions of these countries. These schemes have been strongly supported throughout by UNICEF. The first of a new group of seven UNICEF-assisted schemes, that at Bangalore, came into operation on January 23rd.

All of these schemes are now being seriously hampered by lack of adequate supplies of skim milk powder. They depend on imported skim powder to "tone" the "double tone" the high-fat buffalo milk. Experience in India has shown that with the increased sales resulting from the cheaper milk, local milk production is always greatly stimulated. So valuable a development in parts of the world which need increased food production so badly calls for the utmost effort in support by the advanced dairying countries.

In Australia production of skim milk powder can be greatly increased. In North West Tasmania alone there is scope for at least one large spray-drying plant, and other opportunities exist elsewhere. If the present high casein prices lead, as seems likely, to irreversible loss of some of the paper-coating market to substitutes, the industry may be driven by economic forces to produce more skim powder. But whether or not this occurs, the situation calls for joint dairy industry and Commonwealth Government action to instal more spray drying plants in this country and to ensure that a reasonable proportion of the total production is directed to the Indian and Pakistani milk schemes. The policy of the World Food Programme of U.N. is strongly in support of these developments and the Commonwealth Government would therefore find it difficult not to fully respond to initiative by the dairy industry. Either the Processed Milk Manufacturers Association or the Australian Dairy Produce Board, or both organizations jointly, are in a position to initiate action in this matter.

U.N.E.C.E.C.A.P. Sees Problems Ahead for Cheese

The United Nations Economic Commission for Europe's Committee on Agricultural Problems recently held a meeting to examine the dairying position in that continent.

Although the Committee found that, at present, prices of all dairy products remained firm, with rises in the case of butter and cheese, it reported difficulty in foreseeing future trends, for a number of reasons. In particular, it was too early yet to evaluate the effects of the Common Market regulations. Certain exporting countries expressed their anxiety on what possible results these might have for their exports of cheese of which the trade in Europe had been liberalized in recent years. If the production of dairy products within the Community continued to expand at the same rate as in the past few years it was very likely

that the main problem for both the member countries and non-member countries would be to find outlets outside the Community.

Jerseys Doing Well in Tropics

—reports Jersey Society Federal President

Despite the hot and humid climatic conditions pure bred Jerseys which he had seen on a recent visit to Papua and New Guinea had been producing excellently, reported Mr. Geoff. O'Halloran Giles, Federal President of the Australian Jersey Herd Society. Mr. Giles said that these herds further endorsed the Jersey's position as top-producing breed for semi-tropical conditions.

The cattle exported from South Australia to Thailand in February, 1964 had also been inspected by him, and he was able to report that although one cow had been lost the remainder of the shipment looked well.

Unfortunately, they were unable to free-graze because of the presence of a virulent form of tick in that area, and as a result their production in permanent stalls was not of a high order, primarily because of insufficient protein in the diet.

REFRIGERATORS LIFT SCHOOL MILK CONSUMPTION

The Milk Publicity Council of N.S.W. recently made £5,000 available for the purchase of refrigerators for certain schools in an experiment to test the influence of refrigeration on school milk consumption. It is interesting to learn that a survey of the twenty schools where refrigerators were installed revealed that consumption of milk by the children increased in some cases from 65% to 100%.

It appears, from this, that this expenditure may be worthwhile, and that, if more refrigerators could be made available, there would be a greater consumption of school milk.

This becomes a very vital matter, because it is the children of today who are the paying consumers of tomorrow, and no effort should be spared to cultivate in them a good impression of milk.

Nevertheless, a careful weighing must be made of the immediate financial gain against the capital expenditure and running costs involved in an extension of the scheme. Although increased consumption in later life is to be hoped for, the returns on refrigeration should at least break even.

Income Tax Booklet for Farmers and Graziers

The Minister for Primary Industry, Mr. C. F. Adermann, has announced the publication of a new edition of the booklet "Income Tax for Farmers and Graziers."

In commenting on the booklet, Mr. Adermann said—

"As an aid to primary production in Australia the Commonwealth has granted a considerable number of special taxation concessions to primary producers. Many items of developmental cost, normally treated as capital expenditure, may be claimed in full as a deduction in the year of expenditure. The special 20% depreciation allowance on farm equipment and structures has encouraged farm investment with a corresponding increase in productivity. If full advantage is taken of the deductions to which they are entitled, primary producers can reap substantial benefit from them."

"Income Tax for Farmers and Graziers" is issued under the joint authority of the Commonwealth Treasurer and the Minister for Primary Industry.

The 6th Edition now available incorporates changes in taxation laws and additional concessions granted to primary producers since 1959 when the previous edition was issued.

Copies of "Income Tax for Farmers and Graziers" may be obtained free of charge from the Department of Primary Industry, Da Costa Building, Grenfell Street.