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International Association of Milk, Food and
Environmental Sanitarians, Inc.



Newbould and Barnum (1956) found that a farm using a chlorine compound for udder washing and teat cup dipping had much larger numbers of staphylococci on the teat cup liners than 2 farms which used chlorhexidine. The farm using chlorhexidine at 400 p.p.m. had an average count several times lower than that using the same substance at 250 p.p.m. Since there was little difference between the 3 herds in the number of staphylococci being shed in the milk, these authors concluded that chief source of contamination of the liners was the teat skin and that chlorhexidine was effective in reducing the numbers found there.

To test these hypotheses they changed the disinfectant used for udder washing to chlorhexidine on the first farm and to the chlorine compound on one of the others, while leaving the teat-cup dipping procedure unchanged. This was followed by a substantial and rapid fall in the number of staphylococci on the liners of the first farm and a rise in that on the liners of the second.

Confirmation of the efficacy of chlorhexidine as an udder wash was obtained by the present author in experiments with monozygous twins (Reports, 1958 and 1959). The object of these experiments was to determine whether sufficiently rigorous hygienic precautions at milking time would effectively control the transmission of staphylococci.

In an experiment on the control of staphylococci on the udder skin, 1:5,000 chlorhexidine was used as an udder wash in one group of cows, using a separate udder cloth for each cow, and the milking unit was flushed with running water after each cow was milked. In the control group, the udders were washed with water, again using a separate cloth for each cow, and the milking unit was transferred directly without rinsing.

This combination of precautions reduced the number of staphylococci found on the udder surface in the experimental group to less than one-eighth that in the control group.

In a further experiment, the cows were exposed to donor animals shedding a particular strain of staphylococcus in the milk. The donors were milked first and the same precautions were taken in the experimental group. The introduced staphylococcus caused mastitis in 5 of the 9 control cows but in none of those in the experimental group. As in the first experiment, there was a marked reduction in the number of staphylococci on the udder surface in the experimental group.

Thus, in these experiments, a combination of antibacterial udder wash, individual udder cloths and rinsing the milking unit with running cold water after milking each cow was effective in controlling the spread of infection and reducing the amount of mastitis.

Davidson, Ian: Staphylococcal mastitis: its epidemiology, *Veterinary Record* (London), 73, 43 (1961).

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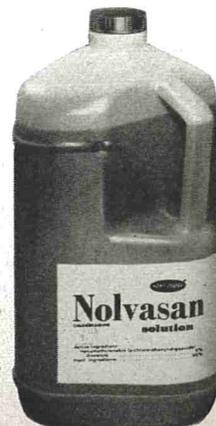
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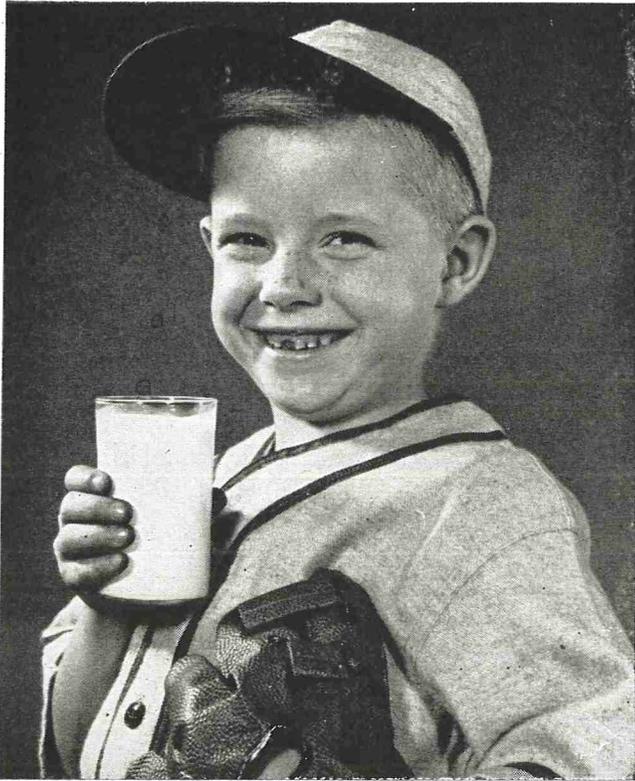
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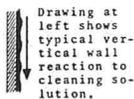
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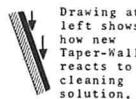
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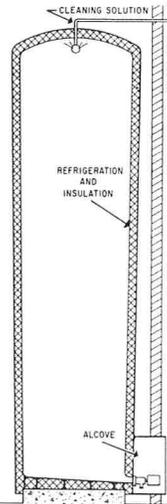


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PESTICIDES IN CONTROVERSY

When you look over the long list of new chemicals available today, you cannot help being impressed by the tremendous developments in modern chemistry. Various known as pesticides, fungicides and herbicides, many were unknown a few years ago but now they are rather generally accepted and have taken their place in our new and ever expanding technology.

It may be that all the credit cannot be put on the asset side of the ledger however effective these may be in improving crop production, removing hazards of insect-spread diseases or just making life more comfortable.

Perhaps too many of us were going along with the idea that any feasible method to bolster crop production and to cut down on the ravages of pests and vermin was just right and a good thing.

A book recently appeared on the shelves, which has given pause for thought and reflection, entitled, *Silent Spring*, written by Rachel Carson. Miss Carson, a well trained biologist, takes the position that these varied and assorted chemicals have been used too freely and too indiscriminately — from the household bug bomb to crop dusting from aircraft. She cites evidence of the steady decline in wildlife population, the decimation of lake fish, even the spawning salmon in the Pacific Northwest and the reduction in numbers of small mammals.

The controversy generated by this book among biologists, conservationists, agricultural chemists and public health people has had almost cyclonic effect. The book has been attacked, praised and criticized. Attack or praise depended, in degree, upon the particular group involved.

Among public health people I would say the book has done a great deal of good. Those of us having as our mission the protection of the public's health, through the control of hazards in man's environment, have been aware for sometime that our new chemical environment could not be lightly shrugged off. We have seen the rise of insecticides from DDT, right after World War II, through such chemicals as dieldrin, chlordane, benzene hexachloride and, even more recently, the organic phosphates like malathion and parathion, to mention just a few.

We can surely raise the question — *Do we always know beforehand what effect these have on MAN's health?* Have we had enough experience to know what, if any, are the cumulative effects? Will men react the same way as laboratory animals? These are hard questions to answer. And when we get an answer that say the chemicals are safe, it is generally on the basis of correct application, proper concentration and use. Can we always be sure that in the hundreds of situations calling for chemical application, use will be judicious and handled in the manner intended?

Perhaps sanitarians are going to have to interest themselves more actively than in the past in the how, wherefore and what-for use of pesticides and other agricultural chemicals. We could doubtless play this roll with considerable effectiveness. We've been dealing with detergents, sanitizers and disinfectants as part of our stock in trade for a long while.

Perhaps in this new role we'll get more concerned with the fly spray in the restaurant and the herbicide on the farm, than heretofore. Perchance we've had our minds too much on the bug, the weed and the rat and not enough on the real end product—THE MAN.

H. S. ADAMS, *Professor*
Indiana University School of
Medicine
Indianapolis, Indiana

LABELING PROBLEMS INVOLVED IN "SUBSTITUTE" AND "IMITATION PRODUCTS"

CHARLES M. FISTERE

Fistere and Habberton

*General Counsel, Dairy Industry Committee,
Continental Building, Washington, D. C.*

The Dairy Industry perhaps more than of the other food industries has been concerned over the years with imitation and substitute products. The reason that this is so is not hard to discover. Invariably it is the valuable article which is most usually imitated. It was said back in 1800 by one Charles Caleb Colton that "imitation is the sincerest of flattery". I suppose that diamonds among all of the precious stones have been the subject of the most intensive simulation and this is because diamonds, in addition to being a girl's best friend, are regarded as being the most precious of all gems. It is a recognition of the intrinsic value of milk and other dairy products which has led to so many attempts to imitate dairy products and to trade upon the good name of milk and other dairy products. Although the subject assigned to me relates to the matter of imitations and substitutes, specifically with their labeling, it occurs to me that some background concerning imitations in the dairy field might be a valuable prelude.

A good deal has been written about oleomargarine and filled milk and there is not a person in this audience who does not possess considerable familiarity with the subject of filled milk and oleomargarine. Nevertheless, a few general observations would seem to be in order.

In common understanding oleomargarine is certainly an imitation of butter. It looks like butter, it smells like butter, it tastes like butter, it is confusable with butter and so far as the scientists have been able to determine, it approximates very closely butter in nutritional value. As a matter of fact oleomargarine is so close an imitation of butter that few there are who are able to distinguish the two products by organoleptic method.

There is really only one point which needs to be made here about oleomargarine and that is to recall to you that here is a product about which it might be said to have been conceived in sin but has reached a point in public acceptance where its production and sale is greater than the product it was conceived to imitate. Oleomargarine achieved complete legal legitimacy upon the happening of two events. The establishment of a definition and standard of identity

under the Federal Food Drug and Cosmetic Act and the repeal of the five cent per pound tax on yellow oleomargarine. The fascinating history of oleomargarine has yet to be written but the point I wish to make is this, even though oleomargarine is as close an imitation of another food as you can possibly get, no one at this late date could seriously advance a regulation which would require that it be called "imitation butter." As a matter of fact, the Circuit Court of Appeals for the Eighth Circuit settled that question in 1943. The final judgment on the matter was rendered in *Land O'Lakes vs. McNutt*, 132 F. 2d. 653. The case was not appealed to the Supreme Court. In dismissing the contention that oleomargarine was legally an imitation the court said: "*Oleomargarine is a well known food product with an identity of its own*". And that gentlemen is that so far as the law of imitations relates to oleomargarine.

The substitute commonly known as "filled milk" has had a different history and its present status is vastly different from oleomargarine and yet there is a curious similarity between oleomargarine and filled milk. "Filled milk" as defined may not be shipped in interstate commerce and its manufacture and sale in many states is prohibited. Like oleomargarine, filled milk has been the subject of fortification with vitamins and in litigation it has not been shown to be inferior to evaporated milk in the matter of nutrition. It is interesting although not very profitable to speculate as to the evolution of oleomargarine if the legislation designed to regulate and control it had followed the pattern later adopted in the so-called Federal Milk Law. Filled milk is defined under the federal statute as being any milk, cream or skim milk whether condensed, evaporated or dried to which has been added a fat or oil other than milk fat so that the resulting product is in imitation or semblance of milk or cream whether condensed, evaporated or dried. It will be seen from this that there are two distinct criteria involved in the definition. First there must be a combining of vegetable oil with certain named dairy ingredients, and secondly the resulting product must simulate one of the enumerated dairy products. Thus, it is entirely lawful to combine vegetable oil with non-dairy proteins producing a product which simulates one of the enumerated dairy products and still escape the sanction of the law. On the other

¹Presented at the Sixteenth Annual Meeting of the Dairy Products Improvement Institute, Inc. on February 14, 1963, New York City.

hand, it is also possible to combine the forbidden dairy ingredients with vegetable oil but so long as the finished product does not simulate one of the enumerated dairy products it is possible to escape the sanction of the law. An example of the latter would be the utilization of a device to impart a non-dairy flavor to the finished product, such as vanilla. An example of the former would be to combine cereal solids with vegetable oil and produce a product which simulates one of the enumerated dairy products. On two occasions the validity of the Federal Filled Milk Act has been passed upon by the Supreme Court of the United States and upheld as being constitutional. It is interesting to note that the last time the Supreme Court passed upon the Federal Milk Act, which was in 1944, the product involved was one which had been fortified with Vitamin A and D. In that case, *Carolene Products Company vs. United States*, 323 U. S. 18, while the court recognized that initially the vitamin deficiencies of filled milk was an efficient cause of bringing about the legislation, there was an additional reason asserted by Congress. This was that filled milk compounds lent themselves readily to substitution for or confusion with milk products. It is not easy to distinguish between the factual situations surrounding filled milk on the one hand and oleomargarine for example, (a) the labels of both products are fully informative of the identity; (b) both products are combinations of vegetable oil and milk solids not fat; (c) they both have been fabricated in such a way as to simulate very closely evaporated milk on the one hand and butter on the other, and (d) both have been fortified with vitamins to the point where neither can be said to be significantly inferior nutritionally to the dairy products which they simulate. Yet from a federal law standpoint one of the products has achieved complete legitimacy whereas the other one may not lawfully be shipped in interstate commerce.

Later in this paper I will have something to say concerning frozen desserts which simulate ice cream or ice milk but where there has been a substitution of fat and/or protein, yes, and even a substitution of carbohydrates. At this point I wish mainly to say that the International Association of Ice Cream Manufacturers has been acutely conscious of the evolution of oleomargarine and of filled milk and has attempted in the development of its policies to give expression to the lessons which have been learned by a study of a history of these two classic substitute products, namely oleomargarine and filled milk.

It will be instructive at this point I trust, to discuss the leading court case on the subject of "imitations".

Most of you are aware I am sure that the Food and Drug Act contains a section which provides

that a food shall be deemed to be misbranded if it is an imitation of another food, unless its label bears in type of uniform size and prominence, the word "imitation" and immediately thereafter, the name of the food imitated.

"Congress did not give an esoteric meaning to the word imitation," said Mr. Justice Frankfurter, speaking for the Supreme Court of the United States in the landmark "Imitation Jam Case."² "Congress left the meaning of the word to the understanding of ordinary English speech" said the Justice.

These remarks are from the opinion of the court in a misbranding case brought by the Food and Drug Administration against 62 cases of a jam product which was composed of 55% sugar, 25% fruit and 20% pectin. The product was labeled "Delicious Brand Imitation Jam." The government contended that the product purported to be the standard jam and since it contained only 25% fruit instead of 45% as required in the jam standard, it was not a lawful article for interstate commerce under any labeling. The company's position was that the product was labeled in strict conformance with the requirements of Section 403 (c) of the Act which provides that a food shall be deemed to be misbranded if it is an imitation of another food unless its label bears, in type of uniform size and prominence, the word "imitation" and immediately thereafter, the name of the food imitated.

The court in upholding the contention of the manufacturer said that the name "imitation jam" at once connotes exactly what the product is — a different, an inferior preserve not meeting the defined specifications.

Shortly after the decision in the imitation jam case the Food and Drug Administration thereafter proceeded against a vegetable oil frozen dessert called "Chil-Zert"³ the label of which did not bear the words "Imitation Ice Cream." This case was brought prior to the promulgation of the ice cream standards. Here, in a Federal District Court, the judge found the omission on the label of the words "Imitation Ice Cream" to constitute misbranding. This product contained no dairy ingredients whatsoever. Its label carried statements that it did not contain milk or milk fat. It was prominently labeled "not an ice cream." The court found, however, that it had the same characteristics of color, taste, texture, body and melting qualities as chocolate ice cream and hence was an imitation of ice cream, and under Section 403 (c) its label was required to bear the words "Imitation Ice Cream." Since its label did not bear these words, it was held to be misbranded. These cases taken together illustrate that there may be imitations

²62 Cases Jam v. U. S., 340 U. S. 593.

³U. S. v. 651 Cases of "Chil-Zert", 114 F. Supp. 430.

⁴21 CFR 3.205.

of both standardized and unstandardized foods.

The position of the Food and Drug Administration has been further enunciated in an informal statement of general policy in connection with jams and jellies containing artificial sweeteners. In a published statement Food and Drug has said that sugar is one of the basic ingredients of jam and jelly. Its presence in these foods is required by the standards of identity for the products. An artificially sweetened jam or jelly must be labeled as an imitation even though the fruit or fruit juice content equals or exceeds that of the standardized article.

These decisions and rulings follow a common dictionary definition of imitation, namely: ". . . that which is made to resemble something else; a counterfeit." As an adjective the dictionary says ". . . made to resemble something superior or of better material." Thus a paper doilie is characterized as "imitation lace."

The test seems to be: does the deviation result in making the finished food look like or taste like another standardized or otherwise generally recognized food.

In a symposium on the subject of substitutes held at Atlantic City last year, Dr. Morse of the Thomas J. Lipton Co. and Dr. Spilman of Foremost Dairies opened up some scientific vistas which have already made possible and foretell still greater use of ingredients in foods which may differ from their historic counterparts as fat, carbohydrate and protein sources.

It is a reactionary principle which requires that a processed food which incorporates valuable or especially useful constituents resulting from scientific research, which happens to look and taste like another food, to be labeled as an imitation.

I believe that consumers are well served by the absence of any law requiring a shirt to be labeled "imitation cotton" when it is made with one of the marvelously useful synthetic fabrics which are so abundantly available today.

The decision of the Supreme Court in the imitation jam case certainly represents a correct application of the imitation section of the Food and Drug Act to that situation. I would not question it if I could. We were dealing there with a sub-standard product. The real question now is this: Should the doctrine be extended to apply to foods which are formulated for reasons other than cheapening and debasement, simply because the finished product happens to look and taste like another food?

Take for example the situation presented by such products as "Frozen Dietetic Dairy Dessert." Here we have no court decision but the Food and Drug Administration has taken the position that such a product is also "Imitation Ice Cream."

Before going further into the matter of whether

a "Frozen Dietetic Dairy Dessert is an "imitation" it is well to have in mind the statutory requirements which govern their labeling as foods for a special dietary use. Congress treated this subject very explicitly. Section 403(j) of the Act provides that a food shall be deemed to be misbranded, ". . . if it purports to be or is represented for special dietary uses, unless its label bears such information concerning its vitamin, mineral, or other dietary properties as the Secretary determines to be, and by regulations prescribes as necessary in order fully to inform purchasers as to its value for such uses."

Pursuant to the regulations under this section and Sec. 403 (i), a dietetic frozen dessert carries on its label a complete list of the ingredients, the percentages of fat, protein, total carbohydrates present, and a statement as to the number of calories supplied by each in a given weight of food. What more need be said?

The question is: If a product complying with the provisions of 403(j) is given a distinctive name such as Frozen Dietetic Dessert, and which is not otherwise misbranded under any other subsection of 403, may it nevertheless be considered misbranded unless its label bears the words "Imitation Ice Cream" as 403(c) purports to require? If a product were made as ice cream is made but containing sorbitol and sodium cyclamate in place of sugar, packaged in bulk containers and not labeled in accordance with the provisions of 403(j), I think there is no question but that the product would be misbranded unless its label bore the words "Imitation Ice Cream."

If, however, the product is sold, as indeed it universally is, in consumer size packages and designated as "Dietetic Frozen Dessert," or "Diabetic Frozen Dessert," and otherwise labeled in accordance with Section 403(j), it is my opinion that 403(c) (imitations) does not and should not apply.

The differences between ice cream and the frozen dessert for special dietary uses are clearly and fully revealed by the labeling required by Section 403(j). This meaningful information would become cloudy if additionally the label had to bear the words "Imitation Ice Cream."

Congress certainly intended that the several subsections of 403 had for their purpose the prevention of fraud, deception and confusion. Congress could not have intended that their application should result in the confusion and consumer frustration that would result by piling the requirements of Sec. 403 (c) on top of 403(j) labeling.

Frozen desserts for special dietary uses are not imitative of ice cream. Obviously 403(c) is intended to prevent the palming off of inferior and counterfeit products as compared with the product imitated. It cannot be said of a dietetic or diabetic

frozen dessert that it is inferior or a counterfeit as compared with ice cream. The substitution of sorbitol and cyclamate for sucrose and corn syrup solids is not going to decrease the manufacturer's costs.

Dietetic frozen desserts are purchased and consumed for a particular dietary use. If consumers of such products, having been given on the label full information concerning ingredients, calories, composition in terms of protein, fat, carbohydrates, etc., are then confronted with the term "Imitation Ice Cream," the whole purpose of the 403(j) labeling, it seems to me, is destroyed because it is bound to raise a question in the mind of the consumer as to the nature of the difference between this product and ice cream which is not revealed by the Sec. 403(j) labeling.

As far as the consumer who wishes to purchase ice cream is concerned, he is not deceived or confused. The name of the product "Frozen Dietary Dairy Dessert," the distinctive 403(j) labeling, the higher price—all would tell the consumer it is not ice cream.

Turning now to Section 403(g), for which the government at first contended in the Jam case, the court decided, as was pointed out earlier, that a substandard food, deficient in fruit in this case, was nevertheless a lawful article of commerce if labeled "Imitation Strawberry Jam" in accordance with 403(c). But, imitation jam is not a special dietary food. It does not have to bear 403(j) labeling, and therein lies, it seems to me, the important difference.

It should be remembered in the jam case the Food and Drug Administration took the position that the imitation jam "purported" to be the standard jam and hence could not be the subject of interstate commerce at all. The court disagreed. The product was held to be lawful for interstate commerce if labeled "imitation" in accordance with 403(c). It is my view that the court would hold that if a product is properly labeled under 403(j) it is not subject to 403(c).

It seems to me that the courts should rule that if a frozen dessert bearing a distinctive descriptive name, such as Frozen Dietary Dairy Dessert, and was properly labeled as to dietary information as required by Section 403(j) that it need not bear an "imitation" label.

Let us look back again for a moment to the oleomargarine situation. I can think of no food which more clearly imitates another food than oleomargarine imitates butter. Why is oleomargarine not required to be called imitation butter? Why does not the imitation section 403(c) apply to oleomargarine?

The reason is to be found in Sec. 403(g) of the Act. This subsection provides that a food shall be

deemed to be misbranded if it purports to be a food for which a definition and standard of identity has been prescribed if it does not conform to the standard and unless its label bears the name specified in the standard. A standard has been established for oleomargarine and oleomargarine is required to bear the labeling required by 403(g). But because a standard has been established for oleomargarine, does it make it resemble butter any the less? It still looks and tastes like butter—it still is in *fact* an imitation of butter even though in *law* it is not. I am of course, not suggesting that oleomargarine be subject to Section 403(c)'s imitation brand. To the contrary, it is my view that any product which meets the requirements of 403(g) is not subject to Sec. 403(c). Similarly, it is my view that a special dietary food which meets all of the requirements of Sec. 403(j) should not be subject to the imitation section.

Earlier I mentioned that the International Association of Ice Cream Manufacturers has been mindful of the lessons to be learned from oleomargarine and filled milk. There has been a development with the Association in the field of standards for so-called "imitation products" which I would like to mention. In 1955 the Association developed a model bill for the purpose of state legislation defining and establishing a definition and standard of identity for Mellorine, a frozen dessert made with fats and oils other than butterfat. The adoption of such a standard would take it out of the class of imitations in the states adopting it. The federal problem still remains.

More recently the Association's Committee on Definitions and Standards at the direction of the Board of Directors has been considering drafts of standards for a low-fat vegetable oil product, the counterpart of ice milk and counterpart of sherbet, tentatively to be known as "Lorine" and "Sherbine" respectively. The Committee also considered state standards for two types of special dietary frozen desserts—one containing dairy ingredients, the other not. These latter standards are so closely related to the FDA's extensive revision of the regulations governing foods for special dietary uses now under way, that work on these standards has had to be suspended.

In summary, it is our feeling that something better than the crepe label "Imitation" should be accorded to foods which do not masquerade as something they are not and which deviate from the standard foods which they resemble because science has pointed a new way to meet a need in the human dietary.

FREEZE-DRYING – PRESENT AND FUTURE¹

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Basically, freeze-drying is changing frozen foods (cooked or uncooked) to dried food by sublimation. This means ice is removed directly from the frozen state to the gaseous state, by-passing the liquid phase. The sublimation process takes place in a vacuum chamber, at low pressure and controlled input of heat. Since only distilled water leaves the food, the resulting product has a definite advantage over other drying techniques in that the oils and other flavor-carrying liquids remain; the flavors also stay in the food. Moisture content of the finished food is reduced to 2 percent or less.

When the product is properly prepared and controlled throughout the freeze-drying process, the quality and trueness of flavor of the reconstituted food is said to equal that of frozen foods. Yet there is no need for refrigeration in handling, transportation, and storage. The shelf life is longer than for frozen foods. In addition, there is a weight reduction exceeding that of other dried foods. For example, 100 pounds of cooked beef reduces in weight to 42 pounds; 100 pounds of mushrooms has a dried weight of 10 pounds.

The United States Department of Agriculture has finished a taste test of freeze-dry products now on the market.

Chicken, turkey and ham appear to have the greatest future among the meats. Several shell fish, such as shrimp and crab, have already been market-tested and are assured success. Among the vegetables, asparagus and a few members of the cabbage family, for example broccoli, have potential. Mushrooms will be freeze-dried in large quantities. Among the fruits, blueberries, strawberries, raspberries, pineapple, apples, apricots, and others appear economically feasible. Specialty foods that appear promising are seasonings, spices, coffee and fruit powders. A manufacturer of freeze-dry equipment has worked out, in its own laboratory, an efficient processing cycle for more than 50 foods.

Foods with a high protein or starch content usually freeze-dry easily. When foods have high water content and loose structural characteristics, as for example watermelon, tomatoes, and cucumbers, it is quite easy to freeze-dry them, but virtually impossible to reconstitute them to their original form.

Another way of assessing the potential of the industry is to examine possible markets for the products. These would include:

1. Institutional sales: Mass feeding used in restaurants, schools, hospitals and other away-from-home eating places.

2. Secondary processing: Freeze-dry ingredients added to soup, preserves, desserts, and bakery products.

3. Convenience foods: Camp packs, dip mixes and unique confectioneries.

4. Armed Forces: Probably the largest single buyer of freeze-dried products is the Quartermaster Corps.

5. Retail: People in the field agree this market is still several years in the future.

6. Specialty items: It is quite possible that within this area, freeze-drying may have its greatest impact. As an example, instant coffee dehydrated by this method is said to yield a product with trueness to flavor unequalled by any other drying method. A prominent food company is now installing freeze-dry cabinets in their coffee plant.

The future of the freeze-dry industry depends largely on two factors, quality of the products and the cost of processing.

A custom freeze-dry plant has a rate of 10 cents per pound of raw product. This would be equivalent to 11 to 14 cents per pound of water removed. A well-known consultant to the food industry uses 7 cents per pound of water removed as a rule-of-thumb cost. Automatic programming of the drying cycle in conjunction with accurately sequenced operation, is an important factor in the economics of freeze-drying. Batch freeze-drying, with several chambers, probably will always prove the most profitable method for processors who freeze-dry a variety of products, but the continuous method can be more profitable for a single product at a high production rate.

Practically all management men of the major food firms have an interest in freeze-drying. Many have investigated the possibilities of freeze-drying as it might apply to their businesses. Almost every one of them feels that there is a future for this industry. They are testing products, calculating costs, watching developments and waiting.

In taste testing, some of the freeze-dried products showed up well. Others leave something to be desired. All products are not uniformly good.

Costs are high. Currently, they are much higher than other drying and processing methods. However,

¹Presented at the spring meeting of the Indiana Public Health Association, Environmental Sanitation Section, Indianapolis, Indiana, April 25, 1963.

we must consider costs other than processing ones. It is quite possible that transportation, handling or storage costs may be enough lower in freeze-dry products that they could more than offset the higher processing costs involved.

The freeze-drying industry is already here. There are some 30 odd products now on the market. Eight companies are in commercial production, and at least three of these are presently enlarging or modernizing their plants. Four plants are now being built in this country and two in Canada. Six equipment companies are engaged in designing, building and installing equipment in this country and three are active in Europe.

It is estimated that the dollar volume of the freeze-drying industry in 1970 will be about one billion dollars annually. In seven years this is a potential of about one percent of total food sales.

Experts do not know and have not expressed their ideas to what extent freeze-drying might cut into the frozen food or canning industries. On the basis of taste tests and cost studies, one should not be overly worried about the immediate future if he

were a frozen food processor or canner.

Freeze-dried foods must comply with provisions of the Indiana Food, Drug, and Cosmetic Act in respect to labeling, adulteration and contamination.

Laboratory analysis of investigational samples of various freeze-dried foods has revealed some to contain heavy bacterial contamination. For example, the standard plate count of one freeze-dried product was 91,000,000/gm.

The Quartermaster Food and Container Institute's Industry Advisory Committee is of the opinion that bacteriological standards must be established for pre-cooked freeze-dried foods. The suggested standard is 5,000 (standard plate count) per gram, with staphylococci and probably *E. coli* absent in a 0.1 gram dilution.

The control of heavy bacterial contamination becomes increasingly important as consumer demands turn to the use of convenience foods that are served in the home without cooking or heating or after short periods of cooking at relatively low temperatures.

A DECADE OF PROGRESS¹

LUTHER L. TERRY

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It is an honor to participate with you in this Ninth National Conference on Interstate Milk Shipments. The occasion gives me great pleasure since I know that this group, which has the respect of both the dairy industry and the public health and agricultural agencies, is performing an important service for the American people.

Rapid increase during the past decade in the number of communities and dairies which have joined in protecting the sanitary quality of interstate shipments of fluid milk and milk products bodes well for the future of your interstate certification program and for your activities here this week.

You are meeting at a time in history when no one any longer questions the need for proper sanitary protection of milk. Indeed, it is hard to realize that some sixty years ago health workers were struggling to set up the first milk-heating stations in New York to dispense milk which would be safe for babies to drink. Milk was suspected as the carrier of illness which, near the turn of the century, brought death

to 241 of every thousand babies in New York before they completed a full year of life.

This kind of situation led W. T. Sedgwick, one of the early public health leaders, to write in 1901:

"Among all vehicles of infectious disease there is perhaps none more dangerous than milk. This fact is the more remarkable because milk has always been one of the most trusted of human foods. Clothed in a veil of white, associated with the innocence of infancy, of high repute for easy digestibility, believed to represent perfection as a natural dietary, popular and cheap, milk has always deservedly held a high place in public esteem."

Because of milk sanitation and other health measures, milk has been restored to its high place in public esteem. Infant mortality has been reduced 90% in the past 100 years. There has been such widespread acceptance of the merits of milk sanitation that today more than 96% of the market milk consumed by our Nation's urban population is pasteurized—a phenomenal accomplishment in a relatively short period of years.

Many groups have contributed to this achievement. Public health and agricultural agencies, the

¹Presented at the 9th National Conference on Interstate Milk Shipments, Peabody Hotel, Memphis, Tennessee, April 16, 1963.

dairy and related industries, the medical and veterinary professions, educational institutions, and an enlightened public all share the credit. Your milk shipper certification program has been, and continues to be, a major and decisive factor in the continued improvement of the Nation's milk supply.

We all realize that despite the progress that has been made, occasional milkborne outbreaks of illness still occur, emphasizing that constant vigilance is required for the control of disease. Continuing joint effort by the dairy industry and government has been essential to guard our milk supply.

In the early history of the fight for wholesome milk, it was possible for one man, Nathan Straus, to attack a major health problem—the relationship between milk and sickness of babies. His leadership saved thousands of young lives. Now, in our time, with a Nation tripled in size and sophistication, the individual faces almost impossible odds in attempting to work alone against environmental hazards to health. It was once possible for the community to control certain diseases by concentrating its attack at a few places in the environment where control measures could be applied. Pasteurization is a good example of this practice. But we cannot "zero in" on the newer problems because of their size and complexity.

In all periods of recent history people have had a special sensitivity to anything affecting the purity and safety of milk, because of a natural concern for the health of babies and children, our most important milk consumers. Today many people are worried about a variety of new things which may be happening, or might happen in the future, to taint the Nation's milk supply.

There is concern about the radionuclide contamination of milk and other foods by fallout from nuclear explosions, by-products of atomic reactors, and residues of radioactive wastes. A study published two years ago estimated that 5/6 of the strontium 90 taken into the human body comes from foods, especially dairy products. This kind of report alarms people. Extensive studies will be necessary to reveal the immediate and long-term effects of radionuclides on man, so that we will know what fears are groundless and what fears have sufficient justification to warrant our intensive concern.

Another major health problem is the determination of how and when chemicals may be used safely in relation to food. There is no indication that this problem will lessen in the immediate future.

The use of chemicals to protect crops and to eradicate pests has brought new possibilities of danger to foods, including milk.

The cow grazing in pasture may eat chemicals which have fallen on grass growing near sprayed

cropland. Water, from the stream or the trough, may bear trace amounts of chemical or radioactive substances.

We have not yet fully traced the progression of contaminants through the food chain—from water to soil to grass to cow to milk to man—so that we can understand the effects of a small but constant and cumulative exposure to chemicals or other pollutants. Nor are we aware of the subtle genetic effects that changes in environment may have on animals or on man.

Population growth, the movement of people from rural to metropolitan areas, and technological change have significantly influenced the interstate and intrastate movement of milk and milk products. In 1900 we had a population of 75 million people, two-thirds of whom lived on farms. By 1940 the population had increased to 132 million and, as a result of industrialization, the shift from rural to urban areas was pronounced. World War II brought about further changes so that by 1950 two-thirds of the Nation's 151 million people were living in cities. Today our country's population numbers 181 million people, of whom approximately 114 million live in some 200 metropolitan centers.

As these centers have grown, more and more crop and pasture land has been converted into suburban developments, recreational areas, sites for small industrial plants, and into roads and other improvements. Less land is available for dairy farming in the vicinity of some of our metropolitan centers and cities.

Constantly increasing numbers of communities have been compelled to look to more distant sources for supplementary supplies of quality milk and milk products. In some municipalities the need for such supplies has been limited to periods of seasonal shortages, but in many cities the overall demand can no longer be satisfied by local milkshed production. Thus, the trend has been—and continues to be—toward movement of greater volumes of milk and milk products in both interstate and intrastate commerce. Practically all States now export and import fluid milk and milk products to some extent throughout the year.

The advancements in dairy science and dairy technology during the past 25 years have enabled the dairy industry to cope with many of the problems arising from population growth and urban concentration. Developments in herd management and production, sanitation, farm refrigeration, processing techniques, and refrigerated transport now make possible the safe movement of adequate amounts of quality milk and milk products to almost any point in the Nation. These advances have had an impact on State and local milk sanitation regulations and

administrative practices. The great variation once prevalent among milk sanitation regulations has been markedly reduced.

It is gratifying to us that the National Conference on Interstate Milk Shipments has adopted the Milk Ordinance and Code recommended by the Service, and its milkshed rating method, as uniform criteria for making sanitation compliance and enforcement ratings of interstate milk shippers. Currently, its administrative and technical provisions have been adopted as the basis of the milk sanitation law or regulations of 37 States and more than 1900 municipalities and counties—a population coverage of almost 110 million people.

The certification program is a unique Federal-States operation which, to my knowledge, has no counterpart in government operations.

It is important that participation in this program is entirely voluntary. State and local governments retain responsibility for the routine sanitary control of milk supplies. Participating States report on those shippers whose products and plants have been rated by qualified State milk sanitation rating officers, publishing ratings only with the permission of the shipper. The Public Health Service publishes and widely distributes the list of the sanitation compliance and enforcement ratings of the shippers. The main role of the Public Health Service is to stimulate uniformity of performance on the part of State and local authorities so that certifications can be accepted with confidence.

It is unfortunate that the program has not been able to control the deliberate misuse of health and sanitary regulations by those who find them profitable as trade barriers. There is ample evidence that these valuable regulations are being used by a few to obstruct the movement in interstate commerce of milk which is of high quality. I suppose it must be expected that there will be some abuses in any program based on voluntary cooperation and involving a large number of businesses and groups. Your organization is to be congratulated that the abuse has been so minimal.

I know you are aware of many of the matters I have discussed. I mention them, however, to emphasize that it is an important part of the larger environmental picture. Although the modern environment has developed some new allies for all of us who are health oriented, it has also produced problems and hazards.

Because the same chemicals may impinge on the individual in his food, from the soil, air, water, and in his occupational environment, a variety of agencies and disciplines have found it necessary to work on problems which are similar or interrelated. Almost any environmental health program can find a counter-

part or extension of its mission in another agency, in industry, or in the research laboratory of a university.

Environmental health has become an important and distinct field of research and of operations in the national health program.

Because of our need for an overview of where we were and where we should be going, some two years ago I called upon Dr. Paul M. Gross of Duke University to head a committee of distinguished specialists to advise me on the long-range development of Public Health Service programs in environmental health. These deliberations will be of particular interest to you since the Gross Committee chose "Milk and Food" as one of the main topics for consideration, set up a special study committee for that field, and devoted a portion of its final report to the findings of that group.

The report stressed the effects of food and beverages on man's health, alone or—and this was an important emphasis—"in combination with other environmental stresses."

The Committee recommended that the existing Public Health Service food and milk program be "a nucleus around which to build a multidiscipline organization" with "greatly increased capacity and resources for experimental work, technical leadership, and conversion of research to practical food protection programs."

The Public Health Service was recommended as the focal point for research, surveillance, and standards which could maintain and improve the quality of food supply as it affects the health of the consumer. The Committee pointed out that the work of the Service over many years with States and localities as well as with other Federal agencies and industry, put the Service in a key position to integrate the interests of producers, processors, distributors, and consumers of food.

The present milk and food program of the Public Health Service was considered to be making valuable contributions which fortify and supplement the work of industry and other governmental agencies. This program can be a foundation for increased efforts, but it is not now adequate to give the public the kind of protection which expanding industry and changes in food production and eating habits require.

The Committee also suggested that we should consider ways of learning to promote good health by dietary means. It is a fresh and far-sighted, and I fear, neglected approach that we not merely protect food, including milk, from harm but that we explore the benefits to be derived by man by making greater use of our knowledge of nutrition.

There is little doubt in my mind that this voluntary

program of sanitation and milk protection developed by the Public Health Service with the States and the dairy industry, will be carried much farther in the years ahead and will serve as the basis for expanded programs.

This is a challenge to us all. And I know this Conference is well equipped to meet the challenge. Your achievements in the past have been solid and thorough. I wish you continued progress in your important work.

GLASS PIPELINE MILKER IMPROVEMENTS

E. A. QUIST

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The introduction of the clean-in-place glass pipeline milking system nearly 12 years ago was an important development. Since then numerous improvements have been made. Improvements were made for two reasons: to facilitate sanitation and to lower cost. Five such changes illustrate how sanitation was bettered, costs were cut and the entire system was benefited. These changes, made since the milkers were introduced, are: (a) all-glass receiving jars, (b) glass milk inlets, (c) weigh jars, (d) glass vacuum releasers and (e) tighter pipe tolerances.

The glass pipeline system was first used in this country in 1951. It gained widespread acceptance in the middle 50's. Product acceptance came for two reasons: health authorities had approved the clean-in-place (CIP) concept and farmers began using the bulk method of handling milk.

Before CIP, all milklines and pipelines milkers were required daily to be dismantled, washed, sterilized and re-assembled. This was a difficult task and particularly difficult with glass. Sanitarians as well as health authorities had to prove in practice that dismantling the lines was not necessary.

CIP was developed in a research program conducted by the Department of Dairy Industry at Cornell University. Research programs in cleaning glass in-place were undertaken with health department supervision. Installations were made in dairy plants and the results were tabulated. They showed that, with new chemicals available for water softening and detergent action, glass lines could be kept as clean or cleaner in place than other materials could be with conventional cleaning methods.

CIP glass lines were first widely used for raw milk lines in milk plants. With the introduction of the farm bulk tank, use of the pipeline milking system became even more attractive, for its use in combination with a bulk tank resulted in less handling, less walking and less work—hence, less labor cost.

Although the glass pipeline system initially was a remarkably sanitary means of conveying milk, there was room for improvement. One problem was in

the joint or connection of glass-to-glass or glass and another material. If the ends joined did not precisely match, the pipe would not drain properly. In addition, the gaskets required tended to soil. The obvious solution to this problem was to eliminate all possible joints and to improve the remaining ones. Other improvements similarly affected sanitation; some cut cost; others affected convenience. Five are described below:

Receiver jars. The earliest milk receivers consisted

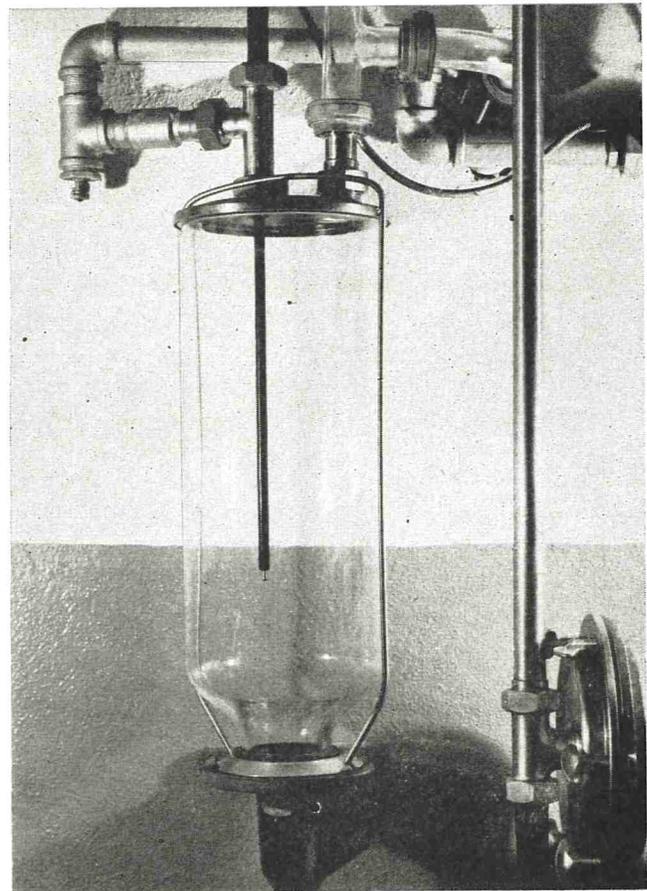


Figure 1. Early receiver jars were adapted glass cylinders with metal and gasketed ends, much like old style weigh jars. Note the many opportunities for soiling.

of either a stainless steel milker pail adapted as a receiver or long glass cylinders with gasketed stainless steel heads on either end, held together by long rods. The gaskets were large — some measuring 10 inches in diameter — and, almost without exception, subject to considerable soiling. All-glass receiver jars were designed. These jars are easy to clean, sanitary, easy to install and less expensive than previous types.

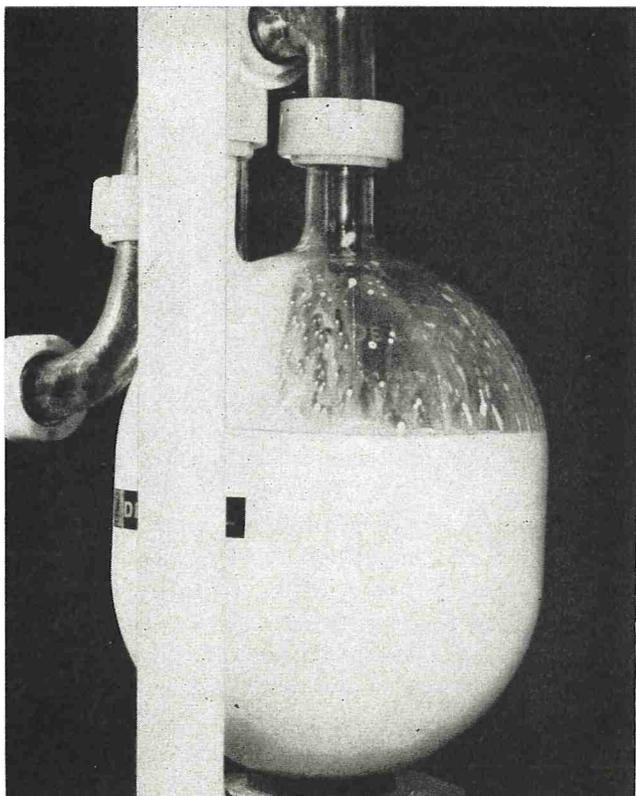


Figure 2. All-glass receiver jars are easy to handle, clean and install.

Milk inlets. Previous milk inlets on glass lines required a stainless steel valve tubulation, two couplings and two gaskets. The milk hose connected to the stainless tubulation. The tubulation itself, as well as the gaskets, were sources of contamination. Inlets were improved in two steps: first, glass tubulations can now be placed on the glass pipe, eliminating the couplings and gaskets of the conventional metal inlets. Glass milk inlets are sanitary and less expensive. The couplings and gaskets were two-thirds of the total stainless milk inlet cost. This second change eliminated about half the total gaskets in a complete pipeline milking system.

Weigh jars. Generally, glass weigh jars are advantageous for two reasons: they allow the individual cow's milk to be isolated and they permit a vacuum reserve closer to the cow. Early weigh jars were like the old receiver jars, either a stainless steel milk-

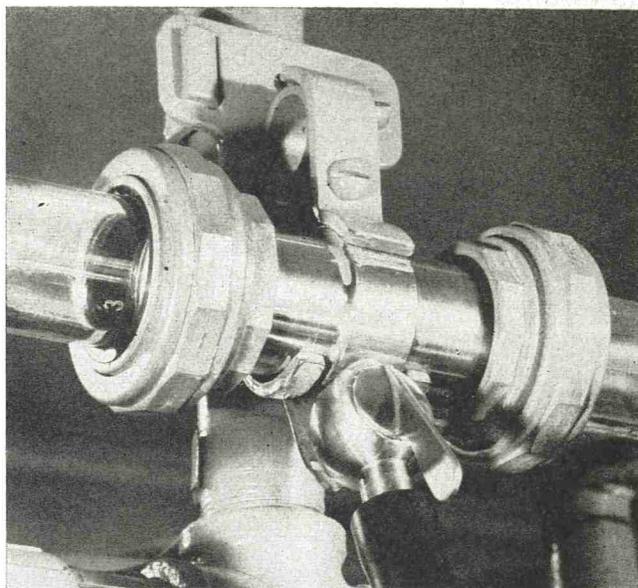


Figure 3. Old style milk inlet involved gasketing and metal couplings, sources of soiling.

er pail adapted as a weigh jar or long glass cylinders with gasketed stainless steel heads on either end, held together by long rods. Present weigh jars are all glass, eliminating the gaskets. These jars are calibrated within Dairy Herd Improvement Association (DHIA) requirements and have been submit-

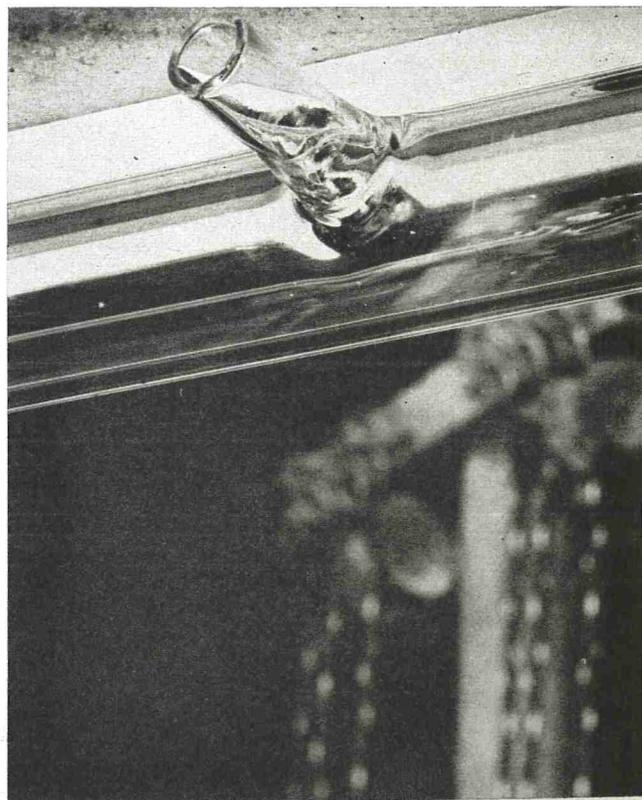


Figure 4. New glass inlets to the milk line reduce cost and increase sanitation by eliminating couplings and gaskets.

ted for DHIA approval.

Vacuum releasers. Present vacuum releasers cannot be cleaned well in place. All-glass releasers which will permit better cleaning and visibility are under development.

Tighter tolerances. These improvements are perhaps the most significant of this list. The pipe ends of early pipelines sometimes would create a dam-up in the line. Thus, improper drainage created a sanitary hazard. Three improvements were taken to correct this situation. The step within the pipe was virtually eliminated. The step from pipe to pipe at a joint was eliminated by tightening pipe tolerances 75%. The gasket radius was reduced 50 per cent by making a sharper corner with a narrow, protruding seat. This resulted in narrower gasket contact, more pressure on the gasket and tighter seal. The key to a good dairyline pipe joint is the sharpness of definition of the pipe itself. Pipe ends should be flat and parallel with sharp corners.

Glass in general can be easily cleaned. The par-

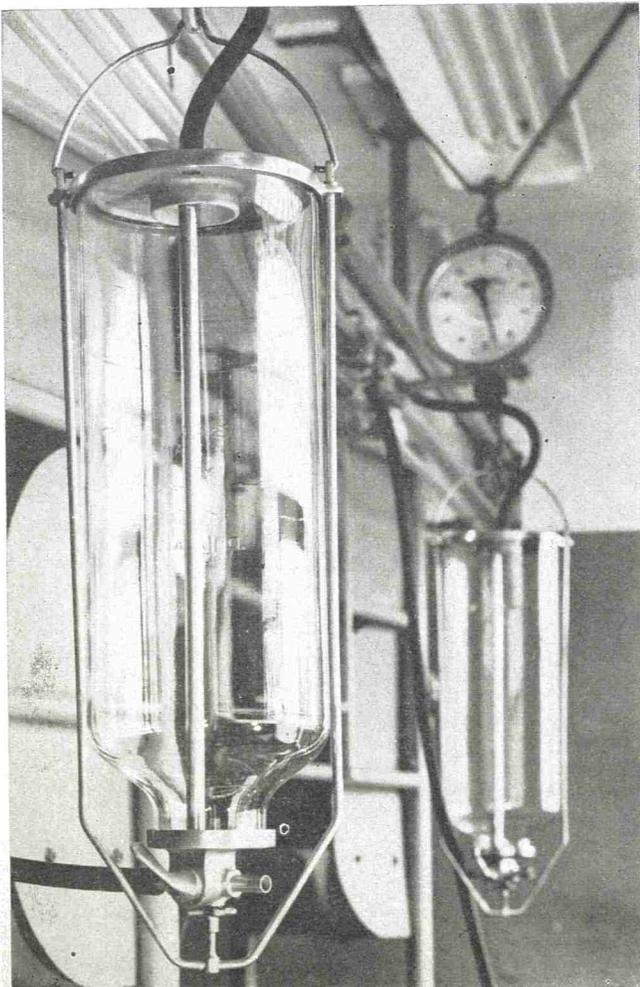


Figure 5. Old style weigh jars utilized a glass cylinder with metal tops and bottoms gasketed. These jars need to be dismantled for cleaning.

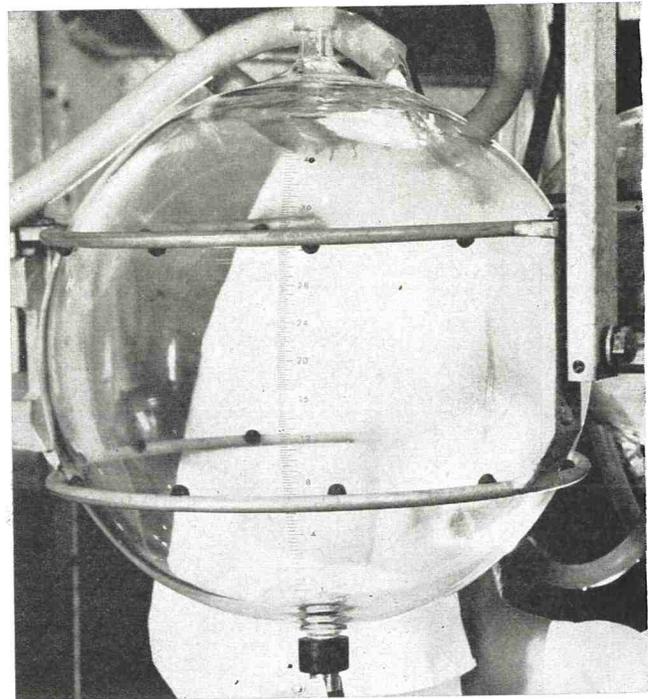


Figure 6. New, all-glass weigh jars eliminate gaskets entirely and improve ease in cleaning. The new jars have measurements that conform with DHIA requirements.

ticular material used in milk pipelines, borosilicate glass, is a hard composition, harder for example than the glass used in milk bottles. Borosilicate glass resists scratching and scuffing and retains its smooth surface, free of pits and hollows where contaminants can collect. It resists scale build-up.

In the work reported by Masurovsky and Jordan (1) three types of glass were studied for their cleaning properties. They included soda-lime dairy container glass, Pyrex brand borosilicate glass and an acid-resistance blue glass enamel material. The latter is used to line such equipment as processing vats.

Results showed that "all of the glasses studied were found to be highly cleanable." The optically-polished specimen of borosilicate glass was designated as the standard of excellence for bacterial cleanability.

Glass is of course transparent, which allows the farmer visual control of sanitizing operations and a means of completely checking cleanliness. Experience has shown that the tempered glass requires only reasonable care in handling during installation and operation. The piping withstands sudden changes in temperature up to 200F. It can be safely sterilized with hot water or live steam. It is not subject to electrolytic corrosion. Glass is impervious to the most powerful cleaning solutions.

Glass pipelines are no more difficult to install than conventional metal pipe. The new-type sanitary coupling permits permanent connections to be quick-

ly and inexpensively made.

Glass pipeline milkers have been successfully used in milk transfer, around-the-barn and parlor installations. Generally, in-use experience has shown that it is best adapted to the parlor operation. This procedure takes fullest advantage of the economy and sanitation the pipeline system affords.

The properties of glass piping and the continuing improvements in pipeline milking systems make the

glass milker one of the most efficient, least expensive and most sanitary systems available. Continuing research and development assures the glass pipeline system maintenance of this high sanitation-low cost position in the future.

REFERENCES

1. Masurovsky, E. B. and Jordan, W. K. Studies on the Relative Cleanability of Milk Contact Surfaces. *J. Dairy Sci.*, 41:1342-1358.1958.

ACTIVITIES OF THE U. S. PUBLIC HEALTH SERVICE RELATING TO THE INTERSTATE MILK SHIPPER CERTIFICATION PROGRAM - 1961-1962¹

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It is indeed a pleasure to report to this, the Ninth National Conference on Interstate Milk Shipments, as to the activities of the Public Health Service in the Cooperative State-PHS Program for Certification of Interstate Milk Shippers, during the period 1961-1962.

It has been an extremely busy two-year period, charged with many sources of program satisfaction, and with many promises of future program growth.

As you know, the principal role of the Public Health Service in this cooperative activity is to bring about the highest degree of uniformity in attitude and performance on the part of State authorities, so that any State certification of a milk supply can be accepted with confidence by a receiving area.

To implement this role, the Service has been delegated a number of responsibilities which, for the most part, include:

1. The standardization and certification of the work of milk sanitation rating personnel.
2. The publication of interstate milk shipper sanitation and enforcement compliance ratings, as reported by the participating States.
3. The training of regulatory and industry milk sanitation personnel.
4. The conduct of check-ratings of listed interstate milk shippers.
5. The evaluation and approval of State milk control laboratories, and
6. The issuance of interpretations related to basic Conference sanitation and rating standards.

¹Presented as Progress Report to the Ninth National Conference on Interstate Milk Shipments, Memphis, Tennessee, April 16, 1963.

At this time, we would like to highlight our major activities related to the cooperative milk shipper certification program during the period 1961-1962 and to make a few comments concerning improvement of some operating procedures and program effectiveness.

Two years ago, Mr. John D. Faulkner reported to the Conference that we were developing a regional office field manual to guide our personnel in uniform procedures to be followed in carrying out the delegated responsibilities just mentioned. We are pleased to report to this Conference that such a manual has been completed and has been transmitted to all of our field staff. We believe that this administrative tool will contribute materially to the promotion of uniformity among all of our regional offices.

STANDARDIZATION OF PERSONNEL

The standardization and certification of State milk sanitation rating officers continues to be among our most important program activities.

The purpose of our standardization procedures is twofold: (a) to train State milk sanitation personnel in survey procedures based upon the provisions included in our PHS bulletin entitled *Methods of Making Sanitation Ratings of Milksheds*; and (b) to achieve uniform interpretation of the *Milk Ordinance and Code-1953 Recommendations of the Public Health Service*. Standardization procedures include independent and concurrent evaluations of large and small pasteurization plants, producer dairies, and enforcement programs made by the PHS regional consultant, and by the State milk sanitarian being

standardized. Complete inspections and appraisals are compared, and differences of interpretations and application of administrative and technical requirements of the Milk Ordinance and Code and the rating procedures are mutually discussed and clarified.

Standardization procedures are, generally, a prerequisite to formal certification. During formal certification, at least 25 producer dairies and five pasteurization plants of various sizes are visited and independently evaluated by the State milk sanitarian and the PHS regional consultant. Our field manual of operations specifies, that in order to qualify for a rating officer's certificate, the State milk sanitarian must (a) agree with the regional consultant 80 per cent of the time on individual items of sanitation, (b) satisfy the regional consultant as to his ability to conduct pasteurization equipment tests, and (c) demonstrate his proficiency in conducting and computing milk sanitation compliance and enforcement ratings. As many of you know, the certification of State milk sanitation rating officers is usually for a period not to exceed three years from the date of certification or recertification.

We are very pleased to report that there are currently 125 certified State milk sanitation rating officers located in 44 States. The responsibilities which are placed upon these individuals cannot be over-emphasized. They truly hold a key to the integrity and success of the interstate milk shippers program; for when they certify to the Public Health Service the ratings of a shipper for listing, they assume full responsibility that the supply is under adequate and full-time supervision; that it is being supervised in accordance with basic standards of the program; and that the supply does, in fact, come from farms and plants which actually merit the ratings submitted.

During the two-year period covered by this report, 96 State milk sanitation rating officers were certified by our regional personnel. Of this number, 26 individuals were certified for the first time and 60 were rating officers whose work was being recertified. A current list of all State milk sanitation rating officers is published in July of each year by the Public Health Service.

We are happy to report that modest increases in our interstate milk shipper program budget have permitted us to add three new milk consultants to our regional office field staff during the past two years. We also expect to fill three additional regional office positions by the end of this fiscal year. Considerable effort has been expended in standardizing their rating procedures in order to assure uniformity. During 1961 and 1962, the rating procedures of six PHS regional representatives were evaluated and standardized by headquarters personnel. Standardization of our regional consultants

is carried out in substantially the same manner as previously described for State milk sanitation personnel.

PUBLICATION OF COMPLIANCE RATINGS

One of the most satisfying aspects of this cooperative certification activity has been its phenomenal growth.

The April 1, 1963, publication of "Sanitation Compliance and Enforcement Ratings of Interstate Milk Shippers" contained the names and ratings of 899 interstate milk shippers—including the ratings of 25 shippers of Grade A dry milk products—located in 41 States and the District of Columbia. These 899 shippers represent more than a five-fold increase in a decade of program operation and represent the milk production of over 136,000 dairy farms.

The demand for the interstate milk shipper list by regulatory officials and by representatives of the dairy industry has increased sharply. Currently, the list is being distributed to over 2,000 addressees. The use of this list for additional information which would facilitate the interstate movement of milk—plant coding for labeling identification, for example—raises some interesting possibilities.

TRAINING

The annual regional seminars for State milk sanitation rating officers and State laboratory survey officers, as called for by Conference Procedures, continue to be very well attended.

These seminars provide an excellent opportunity to develop a high degree of uniformity among States in the application of supervisory, laboratory, rating and administrative procedures. Each participant at the seminar is provided with the opportunity to bring up individual problems encountered during the past year and to benefit from group discussion. Public Health Service headquarters personnel attend each of these seminars so as to assist in bringing about greater uniformity of interpretations throughout the country. The Service also utilizes this opportunity to discuss problems it has encountered as well as to become more knowledgeable of the needs of the States. When we begin to appreciate our mutual problems, we are then better prepared to work out solutions together.

During the past two years, our regional offices have sponsored 16 such annual seminars with a total attendance of nearly 300. In addition to these regional seminars, the Service has conducted and participated in a number of milk sanitation and laboratory topical training courses held both at our Sanitary Engineering Center in Cincinnati, Ohio, and in the States. Over 5,000 representatives from universities, State and local regulatory agencies and the

dairy industry have attended 98 such training courses held during the past two years.

CHECK-RATINGS OF LISTED INTERSTATE SHIPPERS

Continued emphasis has been placed on check-rating activities during the past two years.

We are still receiving comments from a few States that these check-ratings are a duplication of State effort, and that they cast aspersions as to the competency and adequacy of State rating officers and programs. We would like to reemphasize what has been said here in the past—that the purpose of check-ratings, as specified in the Conference Procedures, is to assure the validity of published ratings and to determine how well the sanitation compliance status of a shipper's supply is maintained between official ratings. The results of our check-ratings clearly indicate the need for this type of surveillance.

There were 427 check-ratings conducted by our regional office personnel during the past two years. Of this number, it was necessary to request that 74, or 17.3 per cent of the listed shippers, be completely resurveyed because the results of the check-ratings were significantly below the published rating. In addition, there were 53 requests for reinspections of pasteurization plants.

As has been pointed out in the past, unless the sanitation status of interstate shipper supplies can be maintained between ratings, the integrity of the voluntary program is placed in jeopardy. We cannot overemphasize the importance of the check-rating function. In this regard, we believe the Conference should be more specific in the "Procedures" regarding the frequency of check-ratings. We have, on occasion, been requested by receiving States to provide them with detailed information on our check-ratings for the purpose of justifying the prohibition of the receipt of milk from a specific listed shipper. It has been our practice to release the detailed results of check-ratings only to that State agency which originally certified the shipper for listing. We would like the Conference to consider this matter, and include its decision as a policy in the "Procedures."

LABORATORY EVALUATIONS

Since the last National Conference, the milk laboratory procedures and facilities in the central laboratories of 31 State health and 13 State agriculture departments located in 39 States were reviewed by representatives of the Public Health Service. In addition, 42 State milk laboratory survey officers were accompanied in joint visits to local laboratories located in 33 States. Such joint visits with State personnel are one of the criteria utilized by the Public Health Service before issuance of certificates to milk

laboratory survey officers. During the past year, laboratory survey officer certificates were issued to 50 individuals in 35 States and the District of Columbia.

Altogether, 40 States were visited by Public Health Service milk laboratory representatives during 1961 and 1962 in carrying out their responsibilities for evaluating and approving laboratory facilities and procedures. By the close of 1962, 46 of the continental States had developed programs for approval of local milk laboratories and the remaining two continental States had requested PHS assistance in establishing programs.

In 1961, the Public Health Service sent split milk samples to 53 State health or agriculture central laboratories in 49 States and the District of Columbia. Additional samples were sent to 19 laboratories which initially failed to detect samples positive for antibiotics or phosphatase tests. Apparently, these additional samples were helpful since better results were reported in split milk samples sent in 1962 to 53 State health or agriculture laboratories and the District of Columbia. In the 1962 split samples, 80 per cent of the analysts participating, agreed within ± 30 per cent on viable plate counts of normal milk samples.

In 1961, the Public Health Service placed particular emphasis upon obtaining completed sampling survey forms from State health or agriculture official laboratories and State officially designated laboratories. During the past two years, 472 sampling survey forms were received from 37 State health and agriculture laboratories and the District of Columbia; whereas, during 1959 and 1960, only 252 sampling survey forms were received from 26 States. However, in many cases, receipt of these sampling forms still represents only token participation as the forms are not fully completed. Sampling survey forms should be satisfactorily completed biennially for each interstate milk shipper.

INTERPRETATIONS

The maintenance of uniformity among States and among Public Health Service personnel in the interpretation and application of the provisions of the Milk Ordinance and Code is a continuing activity. Although absolute uniformity can never be obtained, we believe that encouraging progress has been achieved.

In addition to the contributions that the previously mentioned regional seminars and field standardization activities have made toward attaining uniformity, a giant step was made by the establishment of a uniform coding system for all interpretations. Copies of these interpretations are not only sent to

our regional office personnel but also to State milk control authorities and all State milk sanitation rating officers. It has been very gratifying to hear so many favorable comments concerning this new coding system.

MISCELLANEOUS

There are a few other brief areas of interest which we would like to make reference to at this time. One of them is concerned with the continuous survey procedure. As you will recall, the last National Conference charged the Public Health Service with the development of such a procedure to be included as a supplement to our conventional method of making milk sanitation ratings. In attempting to develop such an alternate procedure, we have encountered a number of practical problems which have precluded our completion of this assigned charge.

The continuous survey procedure is basically one in which the conventional survey procedure is spread out over a long period of time. The many different sizes, types and geographical distribution of milksheds create an almost insurmountable problem because of the variables. Accordingly, we have been unable to arrive at uniform procedures which would be both meaningful and acceptable to receiving States.

The opinion has been expressed by some that with the use of the continuous survey procedure, the initiative for maintaining sound milk sanitation programs would be transferred from local communities to the State rating agency.

In view of the problems that we have encountered relative to this continuous survey procedure, we believe that the Conference should reevaluate its recommendation to include this method as an alternate survey procedure.

Another area of interest to the Conference is the detailed evaluations which our regional personnel are making of State milk programs and procedures. These evaluations are made for the purpose of assuring uniform application of procedures governing the State-PHS Program for the Certification of Interstate Milk Shippers. During the two-year period covered by this report, the programs of 11 States have been reviewed. These reviews have been quite helpful to a number of the States. In one such State, Service recommendations assisted in securing a supplemental appropriation of \$28,000 to enable the State sanitation agency to better carry out its responsibilities under the cooperative interstate milk shippers program. It is hoped that we will be able to conduct program evaluations in each State at least once every three years.

As most of you are aware, we are in the process of revising the 1953 PHS Milk Ordinance and Code, which is the basic milk sanitation standard for this program. We expect that the revised standard will be available for consideration by the Tenth National Conference on Interstate Milk Shipments.

Perhaps many of you have already noticed our new and attractive brochure entitled "Safe Milk" on the shelf of the interstate milk shipper exhibit. Describing the principles and accomplishments of the IMS program, this brochure is now available in quantity lots through the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

The Public Health Service is very pleased to be a participant in this uniquely successful program. We know that together we can cooperatively resolve many of the problems which have been referenced in this report and which you have brought to the Conference.

Plan To Attend The Fiftieth ANNUAL MEETING

OF

The International Association of Milk, Food and
Environmental Sanitarians

October 22-25, 1963
Royal York Hotel
Toronto, Ontario

Guest Banquet Speaker
Dr. Carl C. Byers
General Motors Corp.

SPECIAL FEATURE**AN INDUSTRY VIEW OF CLEANING OPERATIONS**

RAMOND E. KASTENDIEK
 TECHNICAL SERVICE DEPARTMENT
 MONARCH CHEMICALS, INC.
 MINNEAPOLIS, MINNESOTA

When the dairy farm cleaning operation is changed from a brush wash operation to mechanical washing, several things must be considered. Mechanical cleaning is dependent upon:

1. Proper coverage of all surfaces by the wash solution.
2. Proper time for the wash solution to react chemically and physically with the milk soil.
3. Proper concentration of the wash solution to react to all soil present.
4. Proper temperature of wash solution to maintain maximum cleaning and eliminate soil redeposit.
5. Proper velocity to provide as much friction as possible and apply a maximum amount of wash solution to the milk surface in the time allowed.

When one or more of these five factors are "cut short," sooner or later cleaning difficulties will occur.

When you go on a farm that has cleaning difficulties, what do you do? Do you start by circulating with milkstone remover followed by a strong solution of chlorinated alkaline detergent? That is the usual procedure followed, but how often does it work? Assuming that the pipeline or tank has been washed regularly with milkstone remover, it would have quite a fat build-up.

If this were the case, the milkstone remover circulation would certainly have been wasted effort. The alkaline detergent wash would have been sufficient. The fat accumulation may be evident as a yellow film, or it may be blue or various shades. Of course, if you observe a hard white or off-white film or deposit, it is reasonably safe to assume that it is of mineral origin, that is, either water or milk, or both. One must never overlook the possibility that the accumulation observed may have been deposited by the detergent itself. Some types of C.I.P. detergents, under certain conditions, will build a residue on equipment without any milk being involved.

The next thing to consider is the protein film. Before we go into this, let's look at the situation from a comparison standpoint. In brushing equipment, protein film or the apple butter, jelly or whatever

it may be called, was never a problem when a brush was used. Then, friction readily removed it and kept it from forming. When time, velocity, concentration, and in some cases, temperature are used, we do not have brush friction and so must rely on other means. This primarily is the function of chlorine. Chlorine becomes our brush in mechanical cleaning. The cause of the protein film is then, the lack of chlorine in the wash solution.

This situation may be brought about by various ways. One is the result of leaving the container open — the detergent absorbs moisture and the chlorine is dissipated. Another is using too small an amount of detergent. For example, one-half the recommended amount. Another common factor is not recommending enough in the first place. The reasons for this are often misleading. When the water hardness increases in the sulphate and carbonate content, the alkalinity is buffered and allows a faster release of the chlorine. Another factor that is too often encountered is an acid water condition. In many sections of the south and east, farm water supplies often run from a pH of three to six. When this condition is confronted, the water has a low grain hardness and it is easy to recommend one ounce to two gallons.

Herewith submitted is a procedure for checking cleaning difficulties. First—if there is an accumulation present on pipeline or tank, apply chlorine — if it is protein it will be removed. If it is not protein, it is either fat or mineral. The next step is acid. Be sure to use a different spot, or rinse the chlorine off before the acid is applied. If acid and chlorine do not remove the accumulation, then it is fat, and a good strong solution of alkaline detergent will remove it with a regular wash.

Never judge or assume success by looking at a wet piece of equipment. Always go one step further than an original hardness test, and check the pH of the wash solution of your alkaline detergent. You will be fooled by how many times your original judgment will be off. You can only get satisfactory results with a pH of 11 — anything less is trouble.

PROGRAM
FIFTIETH ANNUAL MEETING
INTERNATIONAL ASSOCIATION OF MILK, FOOD AND ENVIRONMENTAL SANITARIANS

In Cooperation With

THE CENTRAL ONTARIO MILK SANITARIANS ASSOCIATION

October 22-25, 1963

Royal York Hotel

Toronto, Canada

Registration

Tuesday, October 22 — 1:00 p.m. — 5:00 p.m. Convention Lobby
 Wednesday, October 23 — 8:00 a.m. — 6:00 p.m. Convention Lobby
 Women's Activities — \$5.00 Registration Fee
 Meeting Registration Fee \$5.00

IAMFES OFFICERS

President: R. A. BELKNAP, Barrington, Ill.
President-Elect: J. H. FRITZ, Washington, D. C.
First Vice President: DR. W. C. LAWTON, Minneapolis, Minnesota
Second Vice President: F. E. UETZ, New York, N. Y.
Secretary-Treasurer: K. K. JONES, Indianapolis, Ind.
Executive Secretary: H. L. THOMASSON, Shelbyville, Ind.

Visual Aids — DR. D. M. IRVINE, *Chairman*

Door Prizes — W. J. LAWRENCE, *Chairman*

Entertainment — Ladies Activities — MR. AND MRS. V. JENSEN, MRS. W. D. MCCORQUODALE, MRS. W. J. LAWRENCE

Banquet — GEORGE HAZELWOOD

Finances — J. C. PALMER, *Chairman*

DR. C. K. JOHNS, *Liaison Officer*

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R. A. BELKNAP	K. K. JONES
J. H. FRITZ	H. L. THOMASSON, <i>Ex-officio</i>

SUNDAY, OCTOBER 20, 1963

3:00 p.m.—Executive Board Meeting, Suite
 6:00 p.m.—Dinner
 8:00 p.m.—Executive Board Meeting, Suite

JOURNAL OF MILK AND FOOD TECHNOLOGY

Associate Editor: DR. J. C. OLSON, JR., St. Paul, Minnesota
Managing Editor: H. L. THOMASSON, Shelbyville, Indiana

MONDAY, OCTOBER 21, 1963

8:00 a.m.—Executive Board Meeting, Suite
 12:00 Noon—Lunch
 1:30 p.m.—Executive Board Meeting, Suite
 6:00 p.m.—Dinner
 8:00 p.m.—Executive Board Meeting, Suite

CENTRAL ONTARIO MILK SANITARIANS ASSOCIATION

President: W. D. MCCORQUODALE, Toronto
Vice President: DR. T. E. WATT, Oshawa
Secretary: F. W. HAMILTON, Guelph
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PROGRAM COMMITTEE, IAMFES

J. H. FRITZ, <i>Chairman</i>	F. E. UETZ
DR. W. C. LAWTON	K. K. JONES

SPECIAL MEETINGS

TUESDAY, OCTOBER 22, 1963

8:00 a.m.-12:00 Noon—Executive Board, Suite
 1. Report on Local Arrangements
 2. Report of Executive Secretary
 3. Report on Sanitarian's Joint Council
 12:00 Noon-1:00 p.m.—Lunch
 1:30 p.m.-5:00 p.m.—Executive Board, Suite
 1. Report of Journal Management Committee
 2. Report of Affiliate Council Chairman
 3. Regular Agenda

LOCAL ARRANGEMENTS COMMITTEES

Registration — F. W. HAMILTON, *Chairman*
Reception — D. J. WOOD, *Chairman*
Publicity and Attendance — E. C. PINDER, *Chairman*

1:30 p.m.-5:00 p.m.—Individual Committee Meetings (See Bulletin Board)

1:30 p.m.-3:00 p.m.—Affiliate Council Meeting — Algonquin Room

5:00 p.m.—Social Hour, Ballroom

6:00 p.m.—Dinner

7:30 p.m.—Executive Board, Suite
Committee Chairmen and Committee Members

7:30 p.m.—Panel: "CHANGES IN STANDARD METHODS"

J. C. McCAFFREY, *Director of Laboratories*, Illinois State Department of Health, Chicago, Illinois, *Chairman*.

GENERAL SESSIONS

WEDNESDAY, OCTOBER 23, 1963

MORNING SESSION

CONCERT HALL

C. E. WALTON, Junior Past-President, IAMFES
Presiding

8:00 a.m.—REGISTRATION

9:30 a.m.—INVOCATION

REV. W. A. YOUNG, Public Relations Dept., Ontario Agricultural College, Guelph, Ontario

9:35 a.m.—ADDRESS OF WELCOME

Alderman RICHARD R. HARKINS, Toronto, Ontario

9:50 a.m.—PRESIDENTIAL ADDRESS

R. A. BELKNAP, *President*, IAMFES, Chicago, Illinois

10:15 a.m.—KEYNOTE ADDRESS

"Sanitarians' Responsibility for Environmental Health," M. C. HOPE, Ass't. Chief for Program Planning, Division of Environmental Engineering and Food Protection, United States Public Health Service, Washington, D. C.

11:00 a.m.—"THE NEXT FIFTY YEARS WITH IAMFES"

DR. K. G. WECKEL, Professor, Department of Dairy and Food Industries, University of Wisconsin, Madison, Wisconsin

11:30 a.m.—CHARGE TO THE NOMINATING COMMITTEE

President BELKNAP

11:45 a.m.—Announcements

12:00 Noon—Luncheon Recess

WEDNESDAY, OCTOBER 23, 1963

AFTERNOON SESSION

CONCERT HALL

W. D. McCORQUODALE, *Presiding*

1:30 p.m.—Door Prize Drawing

1:45 p.m.—"PROGRAMMED LEARNING"

DR. R. W. DENT, Associate Professor of Psychology, Ontario Agricultural College, Guelph, Ontario

2:15 p.m.—Discussion

2:30 p.m.—"CHALLENGE OF PEOPLE"

H. M. EWELL, Pennsalt Chemicals Corporation, 12 Orlando Avenue, Arlington, Massachusetts

3:00 p.m.—Discussion

3:15 p.m.—Break

3:30 p.m.—"ENVIRONMENTAL HEALTH — TODAY AND TOMORROW"

DR. A. G. BAKER, Director, Lake County Health Department, Waukegan, Illinois

4:00 p.m.—Discussion

4:15 p.m.—"COMMUNICATIONS IN THE FOOD AND DAIRY FIELDS"

DR. D. L. GIBSON, *Head*, Department of Dairy Science, University of Saskatchewan, Saskatoon, Saskatchewan

4:45 p.m.—Discussion

5:00 p.m.—Adjournment

THURSDAY, OCTOBER 24, 1963

AFTERNOON SESSION

CONCERT HALL

DR. T. E. WATT, *Presiding*

1:45 p.m.—Door Prize Drawing

2:00 p.m.—"PREREQUISITES TO PROFESSIONALISM"

DR. S. H. HOPPER, Head, Department of Public Health, Indiana University Medical Center, Indianapolis, Indiana

2:30 p.m.—Discussion

2:45 p.m.—Break

3:00 p.m.—Business Session

3:10 p.m.—Door Prize Drawing

3:15 p.m.—ANNUAL BUSINESS MEETING

I. Report of Executive Secretary, H. L. THOMASSON, Shelbyville, Indiana

2. Report of Secretary-Treasurer, KARL K. JONES, Indianapolis, Indiana
3. Committee Reports
4. 3-A Symbol Council Report,
C. A. ABELE, *Chairman*, Evanston, Illinois
5. Report of Activities of Sanitarian's Joint Council
6. Report of Resolutions Committee
7. Old Business
8. New Business
9. Election of Officers
10. Announcements

6:30 p.m.—Social

7:00 p.m.—ANNUAL AWARDS BANQUET

Ballroom, Royal York Hotel, R. A. BELKNAP, *Presiding*

INVOCATION

TOAST TO THE QUEEN

TOAST TO THE PRESIDENT OF THE UNITED STATES

INTRODUCTION OF THE CANADA DAIRY PRINCESS

BANQUET SPEAKER

DR. CARL C. BYERS, General Motors Corporation. "The 'U' and 'I' in Communications"

PRESENTATION OF AWARDS

DR. J. J. SHEURING, Senior Past President, IAMFES, Chairman of Committee on Recognition and Awards, Athens, Georgia

1. Past President's Award
2. Citation Award
3. Sanitarian's Award*

INSTALLATION OF OFFICERS

*The Sanitarian's Award is sponsored jointly by the Diversey Corporation, Klenzade Products, Inc., Oakite Products, Inc., Olin Mathieson Chemical Corporation, and Pennsylvania Salt Company; and is administered by the International Association of Milk, Food and Environmental Sanitarians.

FRIDAY, OCTOBER 25, 1963

MORNING SESSION

ONTARIO ROOM

J. H. FRITZ, *Presiding*

8:30 a.m.—Door Prize Drawing

8:45 a.m.—"PATHOGENS IN FOOD"

DR. G. G. SLOCUM, *Chief*, Division of Microbiology, Food and Drug Administration, Washington, D. C.

9:15 a.m.—Discussion

9:30 a.m.—"PSYCHROPHILIC BACTERIA AND THE KEEPING QUALITIES OF PASTEURIZED MILK"

DR. PAUL ELLIKER, *Chairman*, Department of Microbiology, Oregon State University, Corvallis, Oregon

10:00 a.m.—Discussion

10:15 a.m.—Break

10:30 a.m.—"THE PUBLIC HEALTH SERVICE NATIONAL SURVEY OF SANITARIANS"

D. W. TAYLOR, *Chief*, Milk Sanitation Section, Milk and Food Branch, Public Health Service, Washington, D. C.

11:00 a.m.—Discussion

11:15 a.m.—Panel: *Thermal Processing of Dairy Products*

"INDUSTRY VIEWS OF NEW CONCEPTS IN THERMAL PROCESSING OF DAIRY PRODUCTS"

F. L. SANNA, *President*, Sanna Dairies, Inc., Madison, Wisconsin

11:40 a.m.—Discussion

11:50 a.m.—"PROBLEMS ASSOCIATED WITH EVALUATION OF THE EFFECTIVENESS OF NEW PROCESSES"

DR. R. B. READ, JR. *Assistant Chief*, Milk Sanitation Research, Robert Taft Engineering Center, Cincinnati, Ohio

12:15 p.m.—Discussion

12:25 p.m.—Announcements

12:30 p.m.—Adjournment

FRIDAY, OCTOBER 25, 1963

AFTERNOON SESSION

ONTARIO ROOM

R. A. BELKNAP, *Presiding*

1:30 p.m.—Executive Board Meeting

3:30 p.m.—Committee Meetings

EVENING SESSIONS**WEDNESDAY, OCTOBER 23, 1963**

7:00 p.m.-9:30 p.m.—EVENING DISCUSSION GROUP

The evening sessions are for the benefit of our members who have special questions or problems which they wish to discuss informally with others. Selected individuals have agreed to answer questions and otherwise assist in moderating the discussions. An ideal chance to ask the questions for which you have not been able to obtain answers!

MILK SANITATION**British Columbia Room**

D. W. TAYLOR, D. J. WOOD, DR. R. P. MARCH, DR. PAUL ELLIKER, DR. W. K. MOSLEY

FOOD SANITATION**Algonquin Room**

E. L. RUPPERT, DR. G. G. SLOCUM, HAROLD WAINNESS, FRED UETZ, EDWIN LUDEWIG

ENVIRONMENTAL SANITATION**Manitoba Room**

RICHARD BOND, WILLIAM HOLLAND, FRANKLIN FISKE, MORTON HILBERT

MILK SANITATION SESSIONS**THURSDAY, OCTOBER 24, 1963****MORNING SESSION****BALLROOM**J. C. PALMER, *Presiding*

8:30 a.m.—Door Prize Drawing

8:45 a.m.—“COOPERATIVE STUDIES ON MILK QUALITY TESTS”

DR. C. K. JOHNS, *Head*, Dairy Section, Food Research Institute, Canada Department of Agriculture, Ottawa, Ontario

9:15 a.m.—Discussion

9:30 a.m.—“DISINFECTION IN THE PREVENTION OF UDDER INFECTIONS”

F. H. S. NEWBOULD, *Professor*, Ontario Veterinary College, Guelph, Ontario

10:00 a.m.—Discussion

10:15 a.m.—Break

10:30 a.m.—“CURRENT STATUS OF NATIONAL MASTITIS CONTROL EFFORTS”

DR. R. W. METZGER, *Director of Quality Control*, Dairymen's League Cooperative

Association, 402 Park Street, Syracuse, New York

11:00 a.m.—Discussion

11:15 a.m.—“WHAT DO I EXPECT FROM MY DAIRY FIELDMAN?”

JOHN DEAN, *Dean Milk Company*, Chicago, Illinois

11:45 a.m.—Discussion

12:00 Noon—“SANITATION IN PLANTS FABRICATING PLASTIC, PAPER, PAPERBOARD OR MOLDED PULP FOR SINGLE SERVICE MILK AND MILK PRODUCT CONTAINERS”

HAROLD WAINNESS, *Wainness and Associates*, Chicago, Illinois

12:30 p.m.—Luncheon Recess

FOOD SANITATION SESSIONS**THURSDAY, OCTOBER 24, 1963****MORNING SESSION****ALBERTA ROOM**DR. D. M. IRVINE, *Presiding*

8:30 a.m.—Door Prize Drawing

8:45 a.m.—(Topic to be announced)

9:15 a.m.—Discussion

9:30 a.m.—“ONE APPROACH TO EFFECTIVE FOOD SERVICE SANITATION”

SAMUEL OSTROVE, *President*, Chock-Full-O'Nuts, 425 Lexington Avenue, New York 17, New York

10:00 a.m.—Discussion

10:15 a.m.—Break

10:30 a.m.—“INFANT-FORMULA PLANT SANITATION”

HAROLD WAINNESS, *Wainness and Associates*, Chicago, Illinois

11:00 a.m.—Discussion

11:15 a.m.—“EVALUATION OF FOOD PROTECTION PROGRAMS”

E. L. RUPPERT, *Chief*, Milk and Food Branch, Public Health Service, Washington, D. C.

11:45 a.m.—Discussion

12:00 Noon—“MICROBIOLOGICAL SIGNIFICANCE OF FOOD PACKAGING MATERIALS”

DR. R. D. O'NEILL, *Director*, Syracuse University Research Corp., Syracuse, New York

12:30 p.m.—Luncheon Recess

ENVIRONMENTAL SANITATION SESSIONS

THURSDAY, OCTOBER 24, 1963

MORNING SESSION

LIBRARY

DR. J. J. SHEURING, *Presiding*

- 8:30 a.m.—Door Prize Drawing
- 8:45 a.m.—Symposium—*Institutional Sanitation*
“HOSPITAL SANITATION”
R. G. BOND, *Professor*, School of Public Health, University of Minnesota, Minneapolis, Minnesota
- 9:15 a.m.—Discussion
- 9:30 a.m.—“NURSING HOMES”
F. H. FISKE, *Director*, Environmental Health Administration, Allegheny County Health Department, Pittsburgh, Pennsylvania
- 10:00 a.m.—Discussion
- 10:15 a.m.—Break
- 10:30 a.m.—“ACCIDENT PREVENTION IN ENVIRONMENTAL HEALTH”
W. J. HOLLAND, *Environmental Consultant*, Division of Accident Prevention, Public Health Service, Washington, D. C.
- 11:00 a.m.—Discussion
- 11:15 a.m.—“DISPOSABLE REFUSE CONTAINERS”
A. B. ROEBUCK, *Marketing Research Engineer*, National Paper Company, New York, New York
- 11:45 a.m.—Discussion
- 12:00 Noon—“EVALUATING THE EFFECTIVENESS OF ENVIRONMENTAL SANITATION PROGRAMS”
M. S. HILBERT, *Associate Professor*, Public Health Engineering, School of Public Health, The University of Michigan, Ann Arbor, Michigan
- 12:30 p.m.—Luncheon Recess

COMMITTEES

1. Committee on Communicable Diseases Affecting Man — DR. STANLEY HENDRICKS, *Chairman*, Des Moines, Iowa
2. Committee on Education and Professional Development — DR. SUMNER MORRISON, *Chairman*, Fort Collins, Colorado
3. Committee on Ordinances and Regulations Pertaining to Milk and Dairy Products—DONALD H. RACE, *Chairman*, Syracuse, New York
4. Committee on Membership — HAROLD WAINESS, *Chairman*, Chicago, Illinois
5. Committee on Sanitary Procedures
D. B. WHITEHEAD, *Chairman*, Jackson, Mississippi
6. Committee on Dairy Farm Methods
A. K. SAUNDERS, *Chairman*, Mundelein, Illinois
7. Committee on Food Equipment — K. K. JONES, *Chairman*, Indianapolis, Indiana
8. Committee on Frozen Food Sanitation
F. E. FISHER, *Chairman*, Indianapolis, Indiana
9. Committee on Baking Industry Equipment Standards — V. T. FOLEY, *Chairman*, Kansas City, Missouri
10. Committee on Applied Laboratory Methods
DR. J. J. JEZESKI, *Chairman*, St. Paul, Minnesota
11. Committee on Environmental Health Programs
H. B. ROBINSON, *Chairman*, Washington, D. C.
12. Committee on Journal Management
H. S. ADAMS, *Chairman*, Indianapolis, Indiana
13. Committee on Recognition and Awards
DR. J. J. SHEURING, *Chairman*, Athens, Georgia

News and Events

Coulter Wins Presidency, Other Officers Are Named

Dairy scientists from throughout America, having concluded the 58th Annual Meeting of the American Dairy Science Association at Purdue University, are looking to 1964 when they will meet at the University of Arizona in Tuscon.

Some 2000 scientists and industry representatives spent three days at Purdue listening to research reports, choosing officers for the coming year and recognizing educators, scientists and industry leaders.

Dr. Samuel Todd Coulter, head of the department of dairy industries, University of Minnesota, was installed as 1963-64 *president* of ADSA. Other newly elected officers included: Dr. G. H. Wise, North Carolina State University, *vice-president*; Dr. Ralph E. Erb, Purdue University and Dr. Stuart Patton, Pennsylvania State University, *directors*.

Eight men representing education, science and industry from six states, the District of Columbia and Canada were honored at the Annual Meeting. Recipients of the awards were: Professor Arthur J. Morris, University of Utah, *Milk Industry Foundation Teaching Award* to the outstanding university teacher in dairy manufacturing; Mr. Crawford W. Nibler, University of Nebraska, *DeLaval Extension Dairyman Award* to the outstanding Cooperative Extension Service Dairyman; Dr. William Jack Miller, associate professor of dairying, University of Georgia, *American Feed Manufacturers Association Award* for outstanding research in dairy cattle nutrition; Dr. M. J. Pallansch, U. S. Department of Agriculture, dairy products laboratory, *Borden Award* for outstanding research in dairy manufacturing; Dr. John O. Almquist, Pennsylvania State University, *Borden Award* for outstanding research in dairy production; Dr. Douglas B. Emmons, Food Research Institute, Canada Department of Agriculture, *Pfizer, Paul-Lewis Award* for outstanding research in the manufacture of cheese; Mr. Henry F. Judkin, secretary-treasurer,

ADSA, *American Dairy Science Association Award* to an outstanding individual not associated with a college or university who has made a notable contribution to the industry; Dr. Walter Van Price, University of Wisconsin, *American Dairy Science Association Award of Honor* for distinguished contributions to the ADSA.

Two graduate students received ADSA awards for graduate student scientific papers. Receiving \$100 each were M. E. Stiles, University of Illinois, for his paper on dairy manufacturing and Robert Fowler, Ohio State University, for his paper on dairy production.



The new slate of ADSA officers elected at the 58th Annual Meeting are, left to right: Dr. S. T. Coulter, president; Dr. G. H. Wise, vice-president; Drs. R. E. Erb and Stuart Patton, directors.

The University of Georgia won the affiliate chapter award for outstanding activities of a collegiate dairy club.

Dr. Don Paarlberg, Purdue University agricultural economist, told the opening session of the ADSA that the dairy industry should concern itself with the

(Continued on Page 239)



Pictured here are dairy manufacturing researchers and teachers who received awards at the ADSA Annual Meeting held June 16-19 at Purdue University. Left to right are: A. J. Morris, Utah State University; M. J. Pallansch, U. S. Department of Agriculture; D. E. Emmons, Canada Department of Agriculture; and M. V. Price, University of Wisconsin. (See story for details.)

REPORT OF FOOD INDUSTRY COMMITTEE

Connecticut Association Active In Bakery Program

The Food Industry Committee of the Connecticut Association of Dairy and Food Sanitarians has held two meetings during the year for which the below report is submitted (1962). The committee's activities were centered on the subcommittee on Bakery Sanitation under the chairmanship of Kenneth W. Crane.

The subcommittee developed a "Baker's Dozen" sanitation poster which is being displayed in all Connecticut bakeshops of the Connecticut Bakers Association membership, and has received country-wide recognition from bakery and regulatory groups. It is also being adopted by several midwestern state bakery associations.

What was termed by the Connecticut Association as a "very successful" meeting on Bakery Sanitation was held May, 1962 in Wallingford. This meeting was attended by bakeshop operators, members of the association, and several representatives from industry. It is the feeling of the committee that these activities have done much toward achieving the goal for "Good Sanitation in Connecticut Bakeshops."

Among additional subcommittees named for 1962 was the Food Equipment Committee. Leslie Sherman of the Connecticut Department of Health served

as Chairman.

A resolution submitted by the committee reads, in part, as follows:

"Whereas, it is generally recognized that standards for sanitary design of equipment used in the food service industry are highly desirable from the standpoint of the manufacturers and users of such equipment and for the protection of the health of the public served by the industry, and . . .

Be it resolved, that the Connecticut Association of Dairy and Food Sanitarians be in record of favoring the greatest possible use of these standards and that all possible publicity be given to these standards for the benefit of those in the food industry when purchasing equipment."

The Education and Training Subcommittee of the Food Industry Committee has gone on record as wholeheartedly endorsing the "Food Handling and Distribution Program" being offered at the University of Connecticut in the form of a two-year program designed to train students for employment in wholesale and retail food stores, food grading and processing stations in food establishments. It is hoped that the Association membership will endeavor to bring this program to the attention of people in food industry so that applicants may be interested in enrolling in the University program. Additional information about this program may be obtained from Philip Stiles, chairman, Food Handling and Distribution Committee, Department of Poultry Science, University of Connecticut.

Kentucky Adds Randolph To Staff

Dr. Henry E. Randolph has joined the staff of the Department of Dairy Science, University of Kentucky. He has been appointed as Assistant Professor of Dairy Science and Extension Technologist in Dairy Manufacturing.

A native of Sparta, Tennessee, Dr. Randolph was raised on a dairy farm and spent several years following high school managing a dairy herd. He has also been employed as a part-time milk route hauler.

After graduating from Tennessee Tech in 1957 with a degree in dairy technology, Dr. Randolph moved to Ohio State, Columbus, Ohio, where he received both his M.S. and Ph.D. degrees. For the past several years, he has been an instructor and research associate at Ohio State. His areas of work involve product analysis and cultured products with a special interest is in the field of bacteriology.

Dr. Randolph will be working with the Kentucky market milk and ice cream plants. By consultation, meetings, and product analysis, he will help these firms with their quality problems. This is the same type of work and the position formerly held by Dr.

W. S. LaGrange.

Married and the father of two children, Dr. Randolph is a member of American Dairy Science Association and Gamma Sigma Delta.

PHS Booklets Explain Service Activities

Two new U. S. Public Health Service leaflets of interest to milk sanitation authorities in states and cities, "Safe Milk Through Industry, States, U. S. Public Health Service Cooperative Effort" and "Utilization of the Milk Ordinance and Code Recommended by the U. S. Public Health Service" were issued the first week of June.

The first explains the operation of the Cooperative State-Public Health Service Program for the Certification of Interstate Milk Shippers pointing out the program's advantages to milk "exporting" and "importing" states and cities and the achievements of the program over the past ten years. The second leaflet points out that the PHS Recommended Milk Ordinance and Code is currently the basis of the milk sanitation laws or regulations of 37 states, and lists the voluntary city and county adoptions.

Program Completed For Annual Meeting

The official program for the 50th Annual Meeting of the International Association of Milk, Food and Environmental Sanitarians is printed in this issue as released by Mr. John H. Fritz, President-Elect and Chairman of the Program Committee.

The agenda for this year's Annual Meeting shows an increased emphasis on the general sessions with all members meeting jointly. However, as was done last year, sessions are scheduled for milk, food and environmental sanitation so the members may have the opportunity to hear speakers present papers of a specialized nature.

The general theme of this year's program is "communications" which will be dealt with mainly in the general sessions. Dr. Carl C. Byers, General Motors Corporation, will present the Annual Banquet address. The title of his address, tentatively, is "The 'U' and 'I' in Communications." Dr. Byers has served as an outstanding school administrator in Ohio during the past twenty-five years and has gained nationwide acclaim for his forward-looking ideas in school administration.

While selling education, Dr. Byers has gained a national reputation on the American platform as an educator-counselor and as a humorist-philosopher. His homespun philosophy reflects his belief that there can be no straight thinking without the mental and physical panacea of a grin or hearty laugh. His outlook on life is spontaneously stimulating and very refreshing; he is very seriously a fun-maker who sprinkles his subjects with humor for happy useful living—teaching, in his own words, "education, better human relations, practical Christianity, and good sane Americanism."

Keynoting the meeting this year will be Malcolm C. Hope presenting "Sanitarians' Responsibility for Environmental Health." The Assistant Chief for Program Planning in the Environmental Engineering Division of the Public Health Service, a new-comer to the speaker's list, will present a review of the facets of man's environment with which the sanitarian should be concerned.

Communications will be touched upon in various other areas during the program by industry representatives, professors and public health practitioners.

With the advance planning done by both the Program Committee of the Association and by the host affiliate, the Central Ontario Milk Sanitarians Association, this 50th Annual Meeting has great promise. An innovation in this year's agenda is the

planning of a very interesting and fruitful program for the ladies. Those of the Local Arrangements Committee of the Ontario Affiliate who are responsible for this program have done a wonderful job and the ladies entertainment will certainly prove worthy of the additional five dollar registration fee.

The program will be published in loose-leaf form in the next issue of the Journal. Be sure to begin making arrangements soon to attend the 50th Annual Meeting.

Penn State University Offers Household Insect Control Course

Whether you have bats in your attic or ants in your cellar, there are ways to get rid of them.

Ordinarily all bats of a colony leave the roost within 15 minutes time as dusk comes. Control consists of closing all openings so they can't re-enter. But this may be easier said than done says Walter L. Haldeman of The Pennsylvania State University. Bats can squeeze through surprisingly small openings. It may be necessary to repair the attic leaving only one or two openings. Let the bats regain their usual routine, then close the last openings some evening when all have left.

Ants are tireless scavengers. In homes they eat sweets and greases, but they're undesirable guests. Since the queen ant and developing brood never leave the nest, it's obvious that killing the relatively few worker ants seen in the house won't destroy the colony. It's necessary to use poisons that can be carried into the nest. Chlordane is the best. Spread the chlordane dust or apply spray wherever ants are seen.

Sanitation and good housekeeping aid in controlling household insects, but once in awhile even the best housekeepers are dismayed to find silverfish have damaged books in their libraries. Household lindane spray is the insecticide to use for those pesky creatures.

To learn more about ridding homes of insects and other small animals, study Penn State's correspondence course *Household Insects And Their Control*. Write to Household Pests, Box 5000, University Park, Pennsylvania. Include \$1.00 with your name and address and the entire course will be sent to you by return mail.

Dairy Fieldman, Oregon Officer, Robert Effenberger, Passes Away

Oregon Sanitarians were saddened by the loss of one of their officers, Robert Effenberger, who died April 21, of leukemia at a Portland hospital.

Mr. Effenberger had resided in Tillamook County all of his 45 years. He had spent some time in the oil distributing business, had operated a dairy farm, and since 1952 had been employed as a fieldman for the Tillamook County Creamery Association. He was especially interested in procurement of milk for fluid consumption and helped many producers qualify for this market.

Bob was widely known in his community, and was active in civic affairs. He was president of the high school P.T.A. at the time of his death. A consistent booster of the Oregon Association of Milk Sanitarians, he had just been re-elected Secretary-Treasurer before becoming ill. He was also an active supporter of the International and took a sincere interest in its affairs.

He leaves his wife Margaret and two children, Judith and Gary.

Ex - Cell - O Cited By UNICEF

A certificate of appreciation "for active participation in the fight against hunger, disease, and ignorance among children in the developing areas of the world" was presented at New York recently by Mrs. Guido Pantaleoni, president of the U. S. Committee for the United Nations Children's Fund, to Mr. George D. Scott, vice-president, Ex-Cello-O Corporation, Detroit, Michigan.

Sandra Lee Tibeau, 1963 American Dairy Princess, accompanied Mr. Scott at the presentation ceremony.

This fall, the corporation's Pure-Pak Division will produce special half-pint milk cartons to be used as collection containers for the nationwide "Trick or Treat for UNICEF" program. The cartons will be donated by local dairies to UNICEF groups in over 13,000 communities.

In presenting the award, Mrs. Pantaleoni pointed out that the dairy industry has been deeply involved in UNICEF's life-saving work since its inception. Today, 114 nutrition programs in 70 countries add milk and dairy products to supply basic nutrition to undernourished children and mothers. So far, UNICEF has helped to equip more than 160 dairies

USDA ADOPTS STANDARDS FOR ALL FOOD CONTAINERS

The U. S. Department of Agriculture announced July 8 tentative standards for condition of food containers which will become effective August 8.

USDA's Agricultural Marketing Service said the new standards would be used to evaluate the external condition of filled food containers delivered under AMS contracts for use in school lunch programs, for distribution to needy persons, or for surplus removal. The standards also will be available for voluntary use by other applicants for AMS inspection and grading services.

AMS pointed out that the condition of containers is an important factor in its purchases since foods often must be stored for periods of several months before they are used. AMS has purchased large quantities of foods this fiscal year for distribution to schools to help them meet requirements of the National School Lunch Program. Some 15 million children regularly take part in this program.

The tentative standards cover all types of containers—from metal cans and glass jars to fiber boxes and plastic bags. The standards define the various defects of containers and rate them as "minor," "major," or "critical." For instance, a small dent in a metal can which doesn't affect its usability is a minor defect; a tear in a fiber carton which materially does affect its usability is a major defect; and a leak in a can or jar is a critical defect. The standards also establish acceptable quality levels and sampling plans which will be used in applying the standards.

Proposed standards were published in the Federal Register on March 2, 1963. Based on comments and suggestions received, the standards have been revised in certain respects and are being re-issued in tentative form to give interested parties ample time to study them, and to offer further comments.

Comments may be sent to the Deputy Administrator, Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C.

and milk-drying plants, and has distributed milk through over 19,000 maternal and health centers, she added.

Mr. Scott expressed gratification at the boost his company's contribution of "Trick or Treat" cartons will mean for the world's greatest effort by children to help children—a program from which over two million dollars was raised by American boys and girls last year on Halloween.

WFC Views Of Development Based On Idea Of World - Wide Participation

Participants in the World Food Congress, which closed June 18, adopted a declaration which said, in part, that the participants urge "that the task of elimination of hunger from the face of the earth should be conceived in the framework of a world-wide development dedicated to the fullest and most effective use of all human and natural resources, to ensure a faster rate of economic and social growth, and "That to this effect, speedy and decisive action be taken:

1. by all governments of the developing countries
a. for a planned and integrated use of resources which at present are largely under-utilized;

b. for the adaption of their institutions to the requirements of economic and social progress, and, more specifically, to secure the most effective administrative machinery, to give incentives to increased production through ensuring just and stable prices, and to reform, where required, unjust and obsolete structures and systems of land tenure and land use so that the land might become, for the man who works it, the basis of his economic betterment, the foundation of his increasing welfare, and the guarantee of his freedom and dignity;

2. for the maximum utilization of the stock of scientific and technical knowledge and the promotion of both short- and long-term adaptive research suited to the conditions and requirements of the developing countries;

3. for the massive and purposive education of the rural populations, so that they will be capable of applying modern techniques and systems, and for universal education to expand the opportunities for all."

The delegates also urged "that to assist national efforts, and allow speedier implementation of development programs within a world-wide framework, international cooperation be strengthened, in particular so that . . .

"1. present adverse and disturbing tendencies in the trade of the developing countries be reversed and that for that purpose adequate and comprehensive commodity agreements be devised, development plans be coordinated and other appropriate measures taken, and

"2. the volume and effectiveness of financial, material, and technical assistance be increased, and

"3. that there be a more equitable and rational sharing of world abundance, including an expanded and improved utilization of food surpluses for the purpose of economic and social development."

The World Food Congress, called by the Food

and Agriculture Organization of the United Nations, was not a formal meeting of government delegates and does not bind governments to action. The hope is that the meeting of peoples from over 100 countries has provided new stimulation to move ahead in FAO's Freedom from Hunger campaign.

In their final declaration, the Congress participants also stated "that the persistence of hunger and malnutrition is unacceptable morally and socially, is incompatible with the dignity of human beings and the equality of opportunity to which they are entitled, and is a threat to social and international peace;

"That the elimination of hunger is a primary task of all men and women, who must recognize their duties as well as their rights as members of the human race, and must fight to achieve freedom from hunger in every corner of the earth; this obligation being also inherent in the pledge of the nations under the U. N. charter to take joint and separate action, to achieve higher standards of living, full employment, and conditions of economic and social progress and developments as indispensable elements of peace. . . ."

'Reprinted from "For Your Information," June 26, 1963.

ASDA MEETING . . .

(Continued from Page 235)

"Common Market of the United States rather than the Common Market of Europe."

The European Common Market, said the one-time economic advisor to President Eisenhower, would have a "zero effect" on American dairymen since the industry "has practically sealed itself off from commercial trade with the rest of the world."

"We cannot hope to develop a substantial commercial export outlet for dairy products in Europe or anywhere else, Common Market or no Common Market," he advised, "so long as our prices are substantially above the world levels."

Paarlberg urged re-examination of these aspects of the dairy industry: "Commitments to dairy breed which produce high-fat Pricing systems based almost exclusively on butter-fat need Standardization of milk at levels of fat content higher than desired by consumers.

"The Common Market which is of concern to dairy people is not the Common Market of Europe, but the Common Market of the United States," he added.

"My plea is that this major market be kept common and kept open, and that the preference of the common man, who lives in this Common Market, be acknowledged in research, in education and in public programs. . . ."

NAMA Convention To Focus On Problems Of Operation

Discussions and presentations about the most pressing business problems and opportunities facing all vending operators will be highlighted at this year's Convention of the National Automatic Merchandising Association (NAMA).

Just announced, the convention program reflects a "brand-new approach" which promises delegates the "most" in profitable take-home ideas, according to Program Chairman Fred W. Sarkis, Quick Cafeteria Services, Division of Automatic Retailers of America, Rochester, New York.

Scheduled for September 7-10 in Chicago's McCormick Place and the Conrad Hilton Hotel, the 1963 NAMA Show will feature also the world's largest exhibit of automatic vending machines and vending products.

Expected to be a top program attraction is the presentation "*Two Steps Beyond*," by E. B. Weiss, nationally renowned marketing and retailing expert, author, columnist, advertising executive and business forecaster. He will focus attention on vending industry opportunities that lie several years beyond present vending methods, Sarkis reported.

Weiss is vice-president and director of special merchandising services for Doyle, Dane & Bernbach, Inc., one of America's leading advertising agencies. His talk is scheduled for Monday, September 9.

Sarkis pointed out that all of the NAMA business sessions this year will feature expert speakers such as Weiss, and only a few of them have yet to be confirmed.

Other aspects of the "brand-new approach" to the convention program is the planned heavy use of the latest audio-visual techniques; a new emphasis on audience participation, and the elimination of the customary "back-to-back" or concurrent evening workshops. Evening sessions will be limited to one each on Sunday, September 8, and Monday the ninth.

All of the program sessions will be at the Conrad Hilton Hotel with the exception of the NAMA Annual Meeting which opens the convention at McCormick Place, Saturday morning, September 7. This is the only business meeting on Saturday. "*How to Make the Best Cup of Coffee*" features, on Sunday evening, four coffee-brewing and vending experts who will discuss how operators can make more profit from coffee vending through "quality control." Sarkis reported major aspects to be covered are "*The Role of the Routeman*," "*Water Conditioning*," "*Sanitation*" and "*Product Quality*."

Four consecutive business sessions are planned for Monday morning, September 9, and an identical procedure will be followed on Tuesday with more refreshing and "brand-new" ideas.

"*What Makes Herman Hustle?*" will be presented by Richard S. Lopata, a sociologist who for 18 years specialized in building manpower development programs for industry. He will discuss how operators can motivate their employees to do their "very best" work. In addition, he will analyze an employee motivation-cost reduction program that has worked for one vending company. Lopata is with A. T. Kearney & Company, a national management consulting firm headquartered in Chicago.

NAMA's Annual Banquet is slated for the Grand Ballroom of the Conrad Hilton at 7:30 Tuesday evening. The special Ladies' Program this year features a hospitality center at McCormick Place, musical entertainment, a chartered cruise on Lake Michigan, sight-seeing trips, luncheons, and a hat-making demonstration.

FIVE DAIRYMEN VISIT RUSSIAN PLANTS AS PART OF DSI EXCHANGE PROGRAM

Five men prominent in the U. S. dairy industry spent three weeks in the USSR as a part of a two-way exchange arranged by Dairy Society International at the request of the U. S. State Department. A briefing was held July 8 in Washington and their departure by jet for Moscow was July 10.

Members of the team included: Tom O. Gaskins, president, Crest Foods, Inc., Ashton, Illinois; Andrew Jackson, a dairy farmer and president of American Dairy Association of Michigan; Dr. Robert P. Joslin, research director, Fairmont Foods Company, Omaha, Nebraska; George D. Scott, vice-president, Ex-Cell-O Corporation, Detroit, Michigan, and Harvey E. Thew, general manager, Madison Milk Producers Cooperative Dairy, Madison, Wisconsin.

The schedule, arranged by the Soviet government, included visits to dairy installations in and near the cities of Moscow, Leningrad, Smolensk, Kharkov, Minsk, Krasnodor and Tbilisi.

The first half of the exchange was completed on June 15 when the USSR team, largely dairy engineers, concluded their three-week tour of United States dairy processing entities and returned to Moscow. The itinerary for the visiting team was arranged by DSI with members of the Society's Board of Directors and other prominent dairy industry men responsible for the team's visits in Illinois, Wisconsin, Indiana, Tennessee and New York.

PHS MILK AND FOOD CHIEF SPEAKS TO IMS CONFERENCE

Edwin L. Ruppert, chief of the PHS Milk and Food Branch addressed some 300 representatives of regulatory agencies, the dairy industry and educational institutions from 40 states at the Ninth National Conference on Interstate Milk Shipment held April 15-18 in Memphis, Tennessee. The Tenth Conference will be held in Louisville, Kentucky, May 9-13, 1965.

Surgeon General Luther L. Terry of the U. S. Public Health Service, as keynote speaker, reaffirmed the keen interest and support of the Service in the milk shipper certification program and indicated that the program is of great public health significance to the American people.

Developments of the 1963 Conference included: endorsement of a plan to include in the IMS listing, identification code numbers for States and for plants to appear on consumer milk cartons; endorsement of an intensive educational campaign to control mastitis; establishment of a committee to study ways and means for making the Conference more useful to states and communities, and agreement that there was a need for increased surveillance by the PHS to assure the maintenance of published ratings and for requesting PHS to make a check-rating of each listed shipper at least once every two years.

The Conference also re-elected Park E. Livingston, vice-president, Dean Milk Company, as its chairman, and J. C. McCaffrey of the Illinois State Health Department, as secretary-treasurer. Elected to the Exe-



E. L. Ruppert

cutive Board were Samuel Noles of the Florida State Health Department; Dr. Howard Johnson of the Pennsylvania State Department of Agriculture; Donald Race of the New York Dairyman's League, and H. W. Anderson of the Atlanta Department of Health.

What Is A Farmer?

A farmer is a paradox—he is an overall executive with his home; his office; a scientist using fertilizer attachments; a purchasing agent in an old hat; a personnel director with grease under his fingernails; a dietitian with a passion for alfalfa, aminos, and antibiotics; a production expert with a surplus; and a manager battling a price-cost squeeze.

He manages more capital than most of the businessmen in town.

He likes sunshine, good food, State Fairs, dinner at noon, auctions, his neighbors, his shirt collar unbuttoned and, above all, a good soaking rain in August.

He is not much for droughts, ditches, throughways, experts, weeds, the eight-hour day, grasshoppers or helping with the housework.

Farmers are found in the fields—plowing up, seeding down, rotating from, planting to, fertilizing with, spraying for, and harvesting. Wives help them, little boys follow them, the Agriculture Department con-

fuses them, city relatives visit them, salesmen detain them and wait for them, weather can delay them, but it takes Heaven to stop them.

A farmer is both Faith and Fatalist—he must have faith to continually meet the challenges of his capacities amid an ever-present possibility that an Act of God (a late spring, an early frost, tornado, flood, drought) can bring his business to a standstill. You can reduce his acreage but you can't restrain his ambition.

Might as well put up with him—he is your friend, your competitor, your customer, your source of food, fiber, and self-reliant young citizens to help replenish your cities. He is your countryman—a denim-dressed, business-wise, fast-growing statesman of stature. And when he comes in at noon, having spent the energy of his hopes and dreams, he can be recharged anew with the magic words: "The market's up."—used by Station KMA, Shenandoah, Iowa.

¹Reprinted from *Dairymens League News*.

Publication On Basic Data Sponsored By Chem Industry

Recognizing the widening gap between scientific information and public understanding, the chemical industry has published a booklet to acquaint the public with basic data on agricultural chemicals now being used to fight against hunger and disease.

Entitled "*Agricultural Chemicals—What They Are/How They Are Used*," the 64-page booklet emphasizes the problems which arise through unwise use of these chemicals and the contributions and machinery established by the industry and government to insure their safe and effective application. The booklet was published in cooperation with a panel of recognized scientific authorities which reviewed the material and assisted greatly in its publication.

The publication points out that in many ways man is the victim of his own success since many of the developments which brought him better health and extended life have also created problems in his environment.

"An effective management of our environment by chemical and other means is of ever-growing importance," the industry booklet states. "Because of the increasing need for these chemicals to help man banish hunger and disease from the earth, there is placed on all man a compounded responsibility to make reasonably certain that these elements are used in the best interest of the public welfare and safety.

"Government, industry, and science already have assumed heavy and shared responsibility for the national welfare. The urgent need now, and in the future is for the individual to assume his responsibility. The obligation requires that individuals have adequate understanding of the scientific methods and of the tools and techniques of modern technology and their effect and importance in their lives."

The booklet is divided into seven sections, beginning with an explanation of the term "balance of nature."

As the industry says, since the dawn of time, there has been a constant struggle of one species against another for domination of the earth. Only since man has learned through his own development to create tools to control the thousands of species which would destroy him, has there ever been a domination of one species over all others.

The booklet emphasizes that two of the primary tools of man in maintaining his position of domination are science technology and that, through the use of these tools, he eventually will be able to feed, clothe and house the millions who will come after him to populate this earth.

In order to combat the some 600 thousand species of insects, man has developed insecticides, fungicides, herbicides, rodenticides and nematocides. The 64-page booklet tells how these chemicals work in combating the many pests which live off man's food supply and points out, for example, that a gallon of some weed killer will destroy more weeds in one application than can seven men working with seven hoes for seven years.

The publication also cites the life-saving value of chemical control of many of the pests which even now in developing areas bring death and disease to millions.

Recognizing that there is a constant need for proper use of agricultural chemicals, the industry cites instances where chemical control has been of benefit rather than harm to wildlife. In terms of safety and effectiveness, the publication points to the basic federal laws which require that all pesticides shipped in interstate commerce be registered and that in so registering, the manufacturer must provide proof that the chemical will safely and effectively accomplish the purpose for which it is manufactured when used in accordance with the instructions developed for its use.

In addition, legislation now in force requires tolerances for pesticide residues in or on raw agricultural products and makes it illegal to sell food products with residues in excess of these tolerances.

There is also discussion in the booklet of 32 basic questions concerning use of agricultural chemicals in the United States.

SYMPOSIUM TO BE HELD IN SWEDEN

A symposium arranged by the Food Microbiology and Hygiene Section of the International Association of Microbiological Societies (IAMS) in collaboration with the Swedish Institute for Food Preservation Research (SIK) and supported by the Swedish government and private contributors, will be held June 2 through 5, 1964, in Goteborg, Sweden.

This Fourth International Symposium on Food Microbiology, will be concerned with the "Action, Use and Natural Occurrence of Microbial Inhibitors in Foods."

Participation will be limited to those able and willing to contribute original papers to the proceedings of the symposium, which will be published as a separate volume.

Anyone wishing to obtain additional information should contact Dr. N. Molin, Swedish Institute for Food Preservation Research (SIK), Goteborg 16, Sweden, before September 1, 1963.

ISM Announces Speakers And Agenda For Cleveland Meeting In October

The Institute of Sanitation Management announced confirmation of additional speakers and subjects for its forthcoming Annual Conference in Cleveland, Ohio, October 14-16. These are in addition to previous program announcements on the three-day, 16-session conference.

One of the principal speakers announced was Mr. James Bailey, Hygiene Officer of British Overseas Airways Corporation, London, who will speak on "Some Sanitation Problems of an International Airline and Their Solution."

The following speakers are scheduled for the Industrial Division program to be held October 15:

F. C. Clayton, chief plant engineer, General Dynamics, Fort Worth, Texas, "Housekeeping Problems at General Dynamics;" Fred J. Bush, Polariod Corporation, Cambridge, Massachusetts, "The Importance of Budgeting Sanitation Labor Costs;" Harry Hamilton, advanced manufacturing engineer, General Electric Corporation, St. Petersburg, Florida, "The Importance of Design and Cleaning of White Rooms."

RESEARCH PROJECTS GET PHS SUPPORT

The U. S. Public Health Service announced late in May that PHS is supporting 68 research projects in this country and abroad in the area of public health aspects of radiation. The total amount of money invested in the projects is \$1,545,000 for the current fiscal year.

Under the program, the release issued by the Service says, "basic studies on the effects of radiation on the critical body organs and systems, pathways within the body preferred by specific radioactive substances, and an understanding of the ability of various chemicals either to intensify or reduce the effects of radiation are encouraged by the Division of Radiological Health. Studies on the diagnostic and treatment aspects of radiation are conducted or supported at the Public Health Service's National Institute of Health, particularly by the National Cancer Institute, where basic research on the effects of radiation on cells and tissues also is done.

"... Field studies of the movement of radioactive contaminants in plants, animals, and the human food chain are of special interest, as are purely physical studies designed to assess accurately or reduce the population dosages.

"Also of importance are studies which focus scientific attention on the total relationship between the health hazards created by radiation from all sources and the benefits man derives from many radiation usages."

'Reprinted from *For Your Information*, May 22, 1963.

CRACKER BARREL SESSION

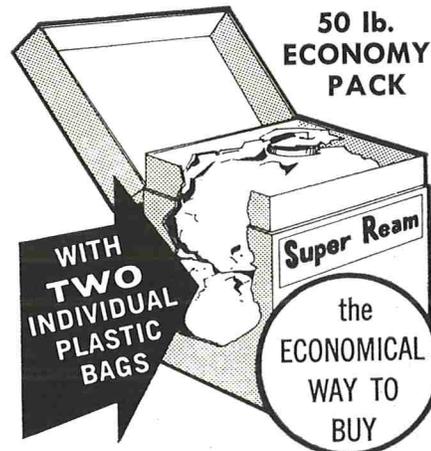
The agenda has also been announced for several of the evening "Cracker Barrel" sessions on October 14. The topics to be discussed include those pertaining to Buildings, Food Processing, Industrial, Hospitals and Department Stores.

For those who may have tuned in late, the ISM "Cracker Barrel" session are informal "shirtsleeve" meetings with no formal speaker, designed to allow the maximum of general discussion among those in the same field of activity. They are planned to give each registrant the opportunity to express his ideas or ask questions in an informal gathering.

SANITATION SHOW

ISM headquarters also announced that several additional firms had contracted for booth space in the Sanitation Maintenance Show that accompanies the conference. Those recently added to the list include: Clarke Floor Machine Company, Muskegon, Michigan; South Eastern Cordage Company, Cleveland, Ohio; Franklin Research Company, Philadelphia, Pennsylvania; Lincoln-American Cleaning Equipment Company, Cleveland, Ohio and Turco Products, Wilmington, California.

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COMING EVENTS

August 5-9: Gordon Research Conferences, Food and Nutrition, New London, New Hampshire; Inorganic Chemistry, New Hampton, New Hampshire.

August 9-15: Sixth International Congress on Nutrition. International Union of Nutritional Sciences and Scottish Group of Nutrition Society of Great Britain and Ireland. Edinburgh, Scotland.

August 14-16: Association of American Feed Control Officials, Hotel Utah, Salt Lake City, Utah.

August 26-28: Symposium on Environmental Measurements, U. S. Public Health Service, Cincinnati, Ohio. Write: R. A. Taft Engineering Center, Columbia Parkway, Cincinnati, Ohio.

September 3-5: National Association of Dairy Equipment Manufacturers, (Members only), O'Hare Inn, Chicago, Illinois. Write: John Marshall, 1012 14th Street, Washington, D. C.

September 9-10: Wisconsin Association of Milk and Food Sanitarians, Annual Meeting, Dell View Hotel, Lake Delton, Wisconsin. Write: L. Wayne Brown, 421 Chemistry Bldg., University of Wisconsin, Madison, Wisconsin.

September 25-26: American Medical Association, 23rd National Congress on Occupational Health, Jack Tar Hotel, San Francisco, California. Write: Executive Officer, AMA.

September 30-October 2: New York State Association of Milk Sanitarians and Cornell University Department of Dairy and Food Science, Annual Conference, Hotel Syracuse, Syracuse, New York. Write: R. P. March, 118 Stocking Hall, Cornell University, Ithaca, New York.

October 22-25: International Association of Milk, Food and Environmental Sanitarians, Inc., 50th Annual Meeting, Royal York Hotel, Toronto, Ontario, Canada. Write: H. L. Thomasson, Box 437, Shelbyville, Indiana.

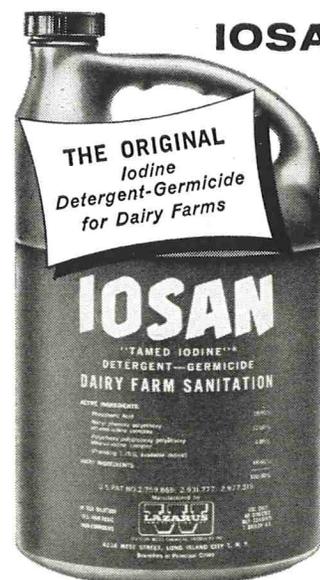
Powdered Product Being Developed

Cornell University dairy scientists, in cooperation with others in the dairy business, are developing a powdered product that will turn into whole fluid milk when blended with water in a special machine. They believe it will help feed the undernourished people of developing countries.

This milestone in the milk business, expected to be achieved in the near future, is an outgrowth of the recent disclosure that whole milk can be reconstituted from nonfat dry milk and butter.

The reconstituting machine, developed at the suggestion of Percy W. Drake of Saratoga Springs, N. Y., and researched at Cornell, has been demonstrated before the Senate and House Agricultural Committees in Washington, D. C., and this week was shown to state officials in Albany. At the present time, skim-milk powder, butter and water can be combined in the machine to produce a product which tastes as good as whole milk, explains Professor R. F. Holland, head, dairy and food science department, New York State College of Agriculture, Cornell.

"You can't believe it until you taste it," says Holland, who reports that the blended product has nearly all the characteristics of normal cow's milk.



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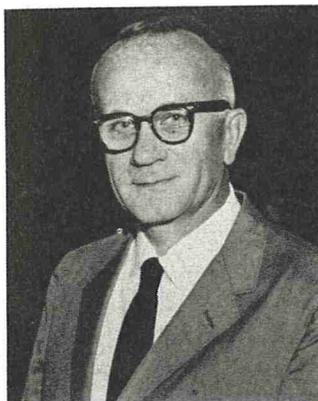
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DR. MILTON FOTER NAMED TO SUBCOMMITTEE LIAISON POST



Dr. Milton J. Foter, assistant chief, Milk and Food Research at the U. S. Public Health Service's Robert A. Taft Engineering Center, Cincinnati, has been appointed PHS Liaison Officer to Senator Ribicoff's Subcommittee on Inter-Agency Coordination in Environmental Hazards.

Health, Education and Welfare Secretary Arthur Celebrezze designated Dr. Foter to assist Senator Ribicoff's staff by preparing PHS material and data on activities related to chemical hazards in the environment. The Subcommittee will be concerned with environmental hazards associated with the use of pesticides, chemicals used to control weeds, insects, undesirable fish and other organisms. The hearings will include information accumulated by Dr. Foter from various PHS institutes, organizations, field stations and laboratories.

Before going to the Center in 1951, Dr. Foter was Chief of the Bacteriology Department of the Wm.

FOOD FAIR SCHEDULED AT COLOGNE

Final plans are being made for a two-pronged exhibit at the International Food Fair in Cologne, Germany, to be held in September.

John M. Treble of Detroit is in charge of a soft-service ice cream demonstration, and Victor Najda of New York will handle the instant nonfat dry milk demonstration.

Participation at Cologne is in cooperation with the U. S. Foreign Agricultural Service, and will mark DSI's 36th such demonstration. FAS will be represented by William L. Scholz, a partner with DSI technicians at many of these fairs.

S. Merrill Company, Cincinnati. Prior to that, he was for two years chief of the bacteriology department and Chief Sanitarian for Pet Milk's Research Laboratory. From 1935 to 1942, he held an assistant professorship in the bacteriology department at the University of Connecticut. During his period of graduate study, he served as an instructor in bacteriology at Cornell University.

Dr. Foter holds degrees from Cornell University and is a member of Sigma Xi, National and American Society of American Bacteriologists, and Ohio State Laboratory Advisory Committee on Civil Defense. The new liaison officer has authored more than 50 scientific papers.

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Pool Owner's Guide Offered By Pennsalt

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These and many other questions asked by the typical owner of a home pool are now answered in a new booklet entitled "*Owner's Guide to Home Pool Care*," published by Pennsalt Chemical Corporation.

"The booklet was designed to cover just about every phase of pool operation in easy-to-understand, non-technical language," reports C. E. Brooker, Pennsalt's B-K/PENNSWIM Department Manager. "We're sure that most pool owners, and even prospective pool owners, will find that this beautifully illustrated booklet will serve as a handy reference to keep for years to come."

Also featured in this 26-page booklet is the PENNSWIM Method of pool sanitation . . . a new development that eliminates the need for daily chlorination of water. This method, which resulted from testing conducted by Pennsalt, involves a simplified pre-treatment of water before application of granular or tableted hypochlorite (chlorine). In many cases, this pretreatment extends chlorine effectiveness up to seven days at a time.

The "*Owner's Guide*" is now available from all dealers handling PENNSWIM swimming pool products.

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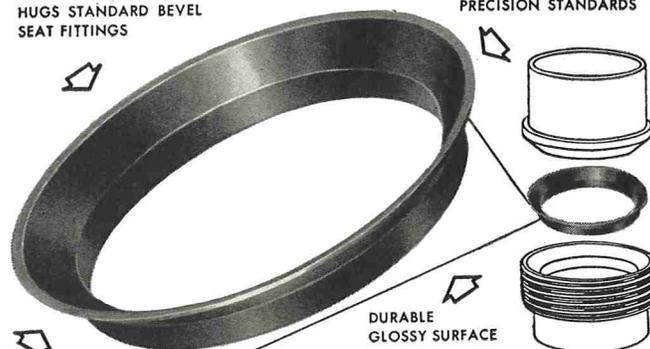
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