The Dairy.

Excessive Butter Yields.

BY L. B. ARNOLD.

The strain after extraordinary butter yields is a little unhappy. It is exhausting to the vital force of the animals, and, like extraordinary yields in quantity, the product is vitiated in different ways. When the secretion of fat is unduly stimulated, the excited condition of the milk glands causes them to take into their products what, under a less excited state, they would leave out. Milk fats in a normal condition are made up, to a large extent, of oils and soft fats, giving to the butter a soft texture, low melting point and high flavor, the oils which contain the flavor being then in the largest proportion. As the milk glands become abnormally excited, they take in more of the harder fats—stearine and margarine, which are the chief components of tallow—and, as they do so, the butter grows stiffer, its melting point is raised and the flavor diminishes. By the time the mammary glands of a cow of ordinary size are stimulated to an activity that enables them to take in the material for making from five hundred to eight hundred pounds of butter in a year, they will have exhausted the resources of fat in her blood to an extent that includes so much of the hard fats which are accustomed to be deposited about the kidneys and in other parts of the body in the form of tallow, that her butter approximates, if it does not actually become, a naturally formed oleomargarine. I partook of some butter in Pennsylvania, a few years ago, the product of a Jersey cow giving some 16 pounds of butter a week, that had so much of the tallow element that it stood up as firmly as a cake of tallow when the mercury ranged among the nineties for three successive days, kept all the time in rooms above ground. There was no need of putting it in a cellar or refrigerator. Though it kept so nicely and was very high colored, it would hardly range above oleomargarine in flavor; yet the owner of the cow considered it fancy, but he was alone in his judgment.

Larger yields have turned out better butter, but extraordinary productions have so often approximated its characteristics as to be suggestive. Professor Henry E. Alvord, manager of the Hougton Farm, described to me the peculiarities of the butter of a Jersey prodigy in production, which were strikingly similar to the Pennsylvania sample. While the owner of the cow considered it splendid, the Professor, who is one of the best of experts, regarded it as unfit for the table. A tendency in other large yields toward the same peculiarities has attracted the attention of others, as the contributions to agricultural journals every now and then indicate. It is not a strange inference to make that excessive production should tend to lower the quality of butter, when the origin of its flavor is remembered. Butter has two sources of flavor. One comes from the volatile animal fats which originate in the body of the cow—butterine and its associates; and the other, and principal one, comes from the flavoring oils in the food, and, of course, cannot exceed the amount in the food consumed. If the amount which can be utilized is diluted by being diffused through five times as much butter in one case as in another, it must be apparent that the flavor of the larger quantity will be the lower. There is something a little peculiar about diluting flavoring oils with other fats. If a little tallow and essential oil are well rubbed together, the taste and smell of a limited quantity of oil may disappear by penetrating and hiding itself in the substance of the tallow. Possibly something of this may take place when the flavoring in the food of a cow is diluted by taking an unusual per cent. of tallow into the milk fats. However this may be, the dilution by an increase of fat secreted actually occurs. When a cow is fed a given measure of turnips daily, the intensity of the turnip flavor varies with the amount of milk and fat produced, becoming more intense as the milk diminishes, and less intense when it increases. But all the flavoring in the food does not go into the milk. A part of it is used up in supporting the warmth of the body, and a part of it mingles with the fat and flesh of the animal, so that only a part of it goes into the milk. Some animals use up more of it than others. It often happens that when a number of cows are fed the same quantity of turnips daily, and give about the same quantity of milk, the intensity of the turnip flavor will be greater in the milk of some cows than in that of others, because some of them use more of it than others before it gets into the milk. The Jerseys and the Channel Island cows generally are remarkable for the little use they make of the flavoring in their food for their bodily support. Nearly all of it is left to be mingled with their milk, and hence one of the causes for the phenomenal flavor of their butter; and yet it appears possible to push the secretion of insipid fats to such an extent as to dilute and hide this accustomed high flavor till it disappears or falls below the common level of the butter of inferior breeds, making too much of a good thing.

Co-operative Butter-Making.

BY JOHN GOULD.

Three years ago, it would have been regarded here in Ohio as *prima facie* evidence of lunacy for a man to have expressed the belief that co-operative creameries, or cream-gathered butter factories, would, or could have, any place in Ohio; but to-day scores of them are located all over the State, scores more are in contemplation, or actually building; and in the densest parts of the dairy district of the "Western Reserve," some of the largest creameries in the State are located, and one near me is making 700 lbs. of butter per day from exclusively gathered cream, and the opinion is now expressed that "they have come to stay," and the evidence to warrant such an assertion is best quoted that some of our largest and most successful cheese manufacturers are themselves going into the business.

If Canada is not already asking herself the question, she will soon, and a presentation of a few of the reasons why this system is so popular where it has been introduced may not be out of place, and its consideration in so widely a read journal as the ADVOCATE may call attention to this matter, and explain in a brief way why 2,000 of these creameries in the States are revolutionizing the art of butter-making.

In the start we state it as actually proven, that a uniformly high grade of butter can not be made in the thousand and one farm houses, taken as we find them. The few may; but the many do or will not, and thus we find the greater mass of the dairy butter actually competing with oleomargarine, and much of this actually gets left in the market struggle; while it has been found, and the high prices eight months in the year attest, that strictly first-class butter and oleo' never come in competition. It will take too long to educate the home butter-makers up to a high standard, and the step can better be taken by co-operation and the whole matter accomplished at once, and its advantages secured in a day. The idea of over production is absurd, as the quantity is not actually increased, but the quality, and it is the superior quality of an article that increases its consumption and enhances its value.

The question may be asked, "Why the butter of a creamery is so uniformly better than the home made?" And the answer to this covers the entire ground of the argument. We are not now speaking particularly of the combined butter and cheese factory system, but of a class of dairying that is not now reached by the other, who, per force, are required to make their butter at home. The butter and cheese factory has its "mission," and it is the wants of the consumer that must determine to what extent exclusive butter-making shall be carried.

By the co-operative system there is an uniformity of product secured at the start, for by this system certain conditions have to be complied with. A regularity of feeding and milking is first enjoined, and then the milk of the fifty or one hundred dairies is all set alike in one style of cream-raising cans, and to get best results, there must be a systematic application of temperature to get the largest amount of cream. This implies either ice or an abundance of cold water to force up the cream. So that four things, looking at uniformity, are secured at the start, which is very unlikely to be the case at a like number of farm houses. Were the milk to be sent to a milk factory, then quantity of milk is the farmer's object alone, no matter how obtained; but when cream is the object, and each dairy's performance is its own credit, and quantity of cream, instead of milk, is the test, the farmer becomes then interested; and as care and proper feeding is the only thing that will produce cream in abundance, and the greater the abundance of cream in the milk the more valuable it is for a fine butter product, the system carries its own lesson with it, and the shortest road to large results is by uniformity, strict compliance with the rules, and the production of the best cream possible. By this plan, a dairy will produce from one-third to a half more butter in a year than where the butter is made at home by the past conservative plan of care, feeding and manufacture, and when one realizes the creamery butter by its uniformity, and finding competition only with other butter of like class, the doubled price, added to the increased quantity, make a most favorable showing for the new system. Now this cream gathered every day, taken to a central station, thoroughly mixed and aired, or ripened to a one certain stage of mild acidity, not *soured*, churned in large quantities at a time, brine washed, worked and packed at a certain time, salted to the demands of the market to which it is to be consigned, packed, and put in cold storage, or sent immediately to market in refrigerator cars—must possess a higher value than the butter made at the 100 farm houses, with their 100 different ways and methods. The creamery butter has reached the market fresh—one grade, quality, texture and aroma; and the other may show extremely high grades, and others so inferior that to strike an average is to bring the price very low for the whole. Last winter, when the butter of a cream-gathered factory near me found quick sale at 43 cents, tons of dairy butter could be bought at 20 to 22 cents. The cost to make the low priced butter was actually more; for the labor of making the one was simply to strain the milk into the cans, the cream gatherer doing the skimming, and paying cash for the cream; while the other, selling for half the price, had cost all the labor that home butter-making implies, and was sold for store pay. The inch of cream, without labor, that could have been sold for 35 cents, after being converted into home-made butter, sold for 22 cents.

"Why not buy a private creamery of the cabinet pattern, and make this butter at home?" asks one. Alas! there are no Mother Shiptons in the dairy world to answer. If they all would, a most remarkable advance would soon be made in farm made butter; but, even should they, would the benefit be as great and as substantial progress made as by the co-operative plan that makes the one grade, and relieves the home of a large amount of drudgery at the best?

By this plan the dairies, large and small, by mountain and plain, in fertile valleys and on rugged hills, are made practically one, by massing the cream, and when the butter is made it is put into the market in "blocks" so large that it is quite an "object" for the great dealers to handle it; and knowing exactly what he has, the future amounts, and like matters, he sells his butter advantageously; and this in time becomes a substantial credit to the original producer.

There is yet another presentation of the subject, and that is the beneficial results conferred upon the home. The good wife, released from the half day's work of skimming milk, washing pans, churning and working over butter, now only has the care of the cans at most, and the time thus gained can be utilized in those little beautifications of person and home, which give cheerfulness and comfort to domestic life. Time for reading, amusement and kindred matters is thus gained, and that without neglect or curtailment of the income—which by the new plan is rather increased than diminished; and if this gained time is rightly employed, the farmer's home may be justly an abode of happiness, contentment and love unbounded.