

Dairy.

Prize Essay on Butter Packages.

The following Essay, by Benjamin Urner, won the \$50 prize awarded by the International Dairy Fair Association of the American Institute, N. Y. City, for the best Essay on "The best and most desirable Butter Package for home distribution and export to foreign countries:"—

The subject here presented by the International Dairy Fair Association is one of great importance to the butter interest of the country. A correct solution of the question, "What is the best butter package for home distribution and export to foreign countries," and the general adoption by our butter producers of the packages decided to be the best, will confer benefits upon both the producer and consumer of butter, and greatly facilitate trade.

There is as good reason why there should be a standard package for butter, as a standard package for flour, pork, beef or lard. A lot of 10,000 barrels of flour made up of lots from 100 different store houses, will be practically uniform in style, appearance and weight. The same should be true of butter. If a merchant received an order for 10,000 packages of a certain quality of butter, he ought to be able to collect it and have the size, style and weight of the packages perfectly uniform; but as the case is now, he would probably be obliged to put into his collection at least three styles of package, each of which would include several sizes, making a lot of a mongrel appearance, however careful his selection might be. Any person familiar with our larger markets cannot fail to have noticed how much easier it is to sell a lot of butter running uniform in the size and handsome in the style of the package, than one irregular in these respects. It is no exaggeration to say that, the quality of butter being the same, there will be often a difference of a cent a pound in favor of the regular lot.

And if the weight of all packages were alike, the seller would realize a farther advantage. There is a real economy of labor involved in buying, selling and handling the goods, which affects the price. It may not be practicable to make packages of uniform size, which will run exactly uniform in weight; but this will be a matter of comparatively small importance, provided we can construct them of uniform capacity, so that they may hold an equal weight of butter. We care little about the weight of a flour barrel, yet all standard flour barrels will honestly hold 196 pounds of flour. And with a little care on the part of dairymen, packages of standard capacity can be made to hold equal weights of butter.

Before attempting to consider what is the best butter package for the home and export trades, it will be well to ascertain whether there are any essential differences between the requirements of the two classes of trade which will necessitate two different styles of package, or whether these requirements are essentially the same, and can be provided for in a single style. As our country is so great in the extent of its butter-producing area, and much greater still in its consuming area, and as the chief customers for our exported butter are, in Europe, not much more distant from some of our producing sections than many parts of our own country, without more trying climatic conditions, it would seem that the package suited to the general trade at home would be equally well suited to the general trade abroad. And, in fact, experience teaches us that this is true. The systems of transportation are the same, the methods of store-keeping and retailing goods are much the same, and the taste of the public probably not materially different on either side of the Atlantic. Custom has, doubtless, in certain neighborhoods, created a prejudice in favor of certain styles of package, which may require time to remove, but this it will be impossible to specially provide for. In general, the producer does not know whether his butter will be consumed in Canadian cities or in London, Liverpool, Glasgow, Dublin, Hamburg, Bremen, Amsterdam, Berlin, or other markets. How, then, can he safely adopt a peculiarity of package which might be appropriate to one of these markets but to none of the others? He cannot, but must take the alternative of using that package which experience demonstrates is best adapted to getting his butter to either market most economically, in the best order, under all the vicissitudes it may have to encounter.

We must except from our consideration packages especially designed to meet the conditions requisite in shipments to markets in tropical climates. It would be impossible to describe a general style of package which would suit the trade of Europe and America, and at the same time meet the wants of such special markets, having special conditions.

We must make exception also of packages used by such producers as make a specialty of catering to some local market, and who adopt a style to meet the taste of fastidious customers, at the same time having an eye to individuality of style, which may be an advertisement of their special product. No general style and make of package can meet the requirements of such cases, for a general style is just what is not wanted. The butter of such producers finds special channels, and does not enter the general trade to any appreciable extent.

We shall proceed, then, to try to find one style of package which will meet the requirements of the general trade of Europe and America. And we must begin by considering some of the properties of butter itself, in order that the package, in its form and the materials of which it is made, may be well adapted to its use. The properties of butter which it is necessary for our purpose to consider are three. First, the evanescent character of its flavor. All butter will deteriorate upon exposure to the atmosphere; consequently it is desirable that the package containing it should be so constructed as to expose as small a portion of its contents to the air as possible, at any time in its course from the producer to the consumer, consistently with its necessary exhibition for sale. This property affects the form of the package. Second, its quality of acquiring the flavor of substances in contact with it must have an important bearing upon the package designed to preserve it with as little damage as possible. It affects the material of which the package is to be made. Third, the changes in its consistency and texture caused by changes of temperature. This also affects the material of which the package is to be made in relation to it as a non-conductor of heat, and the tightness of the package as well, for sometimes the butter may become oily in its texture, and tend to leak through the joints of the package, injuring its appearance and causing loss of weight.

There are other important considerations, also, which must be given their due weight. One of these is cost; this, of course, must be as small as possible, and the package still meet the other requirements. Another is weight, which affects the cost of freight and handling. Another is strength. Another is appearance; a package should produce a pleasing impression upon the purchaser at first view. Another is the facility of opening and exhibiting its contents, and of closing it again without blemish. Another, the ease with which the butter may be "stripped"—that is, turned out upon a scale for testing tares, or upon the counter of the retailer, and replaced in the package.

We will discuss considerations of form in describing, in detail, different styles of package. Here we will try to ascertain what is the best available material for our purpose. Stoneware is almost perfection, so far as preventing loss by soakage, preservation of butter, and contamination from any injurious flavor in the package itself, and in being a poor conductor of heat, are concerned. But its weight, cost and liability to breakage make it entirely unfit for our use. Sheet tin, or tinned iron, has some of the good qualities of stoneware, in its preventing loss by soakage, but in the packages where it is used it is found that the brine of the butter will, in places, reach the iron beneath the tin, and develop rust, to the injury of the butter. This material is also liable to injury by denting, but the chief objection to it is its being a good conductor of heat, and offering very little protection to the butter in hot weather. This objection is insuperable. Wood of some kinds will be found to best meet our requirements in the most essential particulars, with fewer disadvantages than any other material. It is cheap, it is easily worked; it is a good non-conductor of heat; it can be made into a tight package; its absorptive properties can be corrected by filling its pores with brine before the butter is packed. Its principal disadvantage is that it has some flavor which it imparts to the butter. In this respect some kinds are far more objectionable than others. There are varieties which are almost free from this objection, but they are too scarce and expensive for general use. There are other kinds which are so objectionable that they must be discarded; among these are all soft woods; all kinds of oak,

excepting white oak; all kinds of ash, excepting white ash. Red oak, in addition to imparting flavor, stains the butter. Black ash is very porous, and has a decidedly unpleasant flavor. In fact, practice has eliminated all kinds of wood, excepting white oak and white ash. Elm is sometimes used for covers, without exciting serious objection. Hoops, not being in contact with the butter, may be of any suitable material of sufficient strength. White oak is a more porous wood than white ash; it is of a redder color, and shows grease stains more plainly. The two woods are about equal in weight; in the dry state oak is a little the heavier; in the thoroughly seasoned state, a little the lighter. Neither will impart much flavor if thoroughly soaked in brine before the butter is put in contact with it, until considerable time has elapsed after packing. The flavor of white oak detected in butter is clean; that of white ash slightly less pleasant, but there is not quite so much of it. There was formerly a prejudice in some sections in favor of the former over the latter, but probably this prejudice attached to the package from the general character of the butter then contained in it. Of late years the use of white ash by many makers of the finest grades of butter has overcome this prejudice, and it may be said to no longer exist.

Let us now mention the several packages in common use, and ascertain which, if either of them, best meets the conditions heretofore described. We will dismiss, in a word, packages whose unfitness for our purpose we have already proved, and those whose unfitness are apparent at a glance, such as the old-fashioned stone cask, the refrigerating and other packages for prints, the so-called return pail, and all tin packages, and consider such only as we think will have some advocates as the most suitable. We mention, then, the firkin, the so-called Jamestown tub or pail, the half-firkin tub, and the so-called Welsh tub.

The firkin has been long in use in this country, but is known in Europe only as an American package. It is little known there by the name "firkin." It is a package which has met with much favor in several branches of trade in this country. In many of the counties of New York State it is extensively used for packing early-made butter to be carried over the summer, and as when this butter is marketed it has lost its freshest flavor by keeping, the package has become associated with butter somewhat old in flavor. It has been unusual, excepting at times in the spring and summer, to find strictly fresh butter in firkins. Were the chief use of the package the preservation of butter for as long a time as possible, it would be hard to find one which met the requirement better than this. But as the tendency of the production is more in the direction of supplying the markets with fresh butter the year round, this quality has not the same force it once had. The firkin is a "small cask" or keg, generally made; staves and head of white oak; hoops of hickory, with the bark on; weight, twenty pounds, more or less; and capacity, about 100 pounds net weight of butter. It is about twenty-three inches high; diameter of head and bottom, inside hoops, thirteen and a-half inches; of bilge, sixteen and a-half inches; thickness of staves, head and bottom, about half an inch. The hoops are in four tiers. This package meets well some of the conditions we are seeking. Its material is first rate; it is very tight, and it exposes less of its contents to the air than any other package. Its cost (about ninety cents) and its weight are relatively about the same as the half-firkin tub. When nicely made, as it often is, it is handsome. But notwithstanding these good features, it has some positive disadvantages. It is rather too large to be carried, and is often rolled, which is very objectionable when the butter is soft. It is liable to be turned on the wrong end, and, as there is generally a space left between the butter and the head, this will at times permit some shifting of its contents. The size of the package prevents it from being taken entire by many families and small retailers. But these objections are trifling as compared with the serious one that the package is the most difficult of all to "strip" and turn out its contents entire, either for the purpose of testing the tare, trying the butter, or display upon the counter. The upper tiers of hoops must be started to remove the head, and the staves must be spread apart to such an extent that the brine or pickle escapes, soiling the package; and unless the operation is carefully done the butter is liable to be more or less broken. The labor involved in removing the firkin from and replacing it over the butter and making all tight