PRINCELY PACKETS OF GOLDEN HEALTH

(A History of Butter Packaging)

By

Milton E. Parker

The author is indebted to the Lynch
Corporation, Packaging Machinery Division,
For making it possible to prepare this copy
Of the original manuscript for your file.

“Butter and honey shall be eat
that he may know to refuse the evil
and choose the good”

Isaiah 7:15

APPRECIATION

The author is indebted to the CONTAINER
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Researches leading to the preparation of
This historical sketch of the Packaging of
Butter.

ACKNOWLEDGMENTS

In preparing any historical treatise, such as this brochure attempting to trace in the development of butter packaging, the author is immediately confronted with the problem of authentic records. The memory of men is a fragile thing, particularly if only one individual is available to give his recollection of events.

Unfortunately, no one appears to have been conscious of the "history being written" in the early days of the creamery industry of the United States, the result being that no standard reference is available to the student or researcher seeking material for the preparation of any reliable document. However, the author considers himself fortunate in the fact that he was able to find in Chicago a virtually complete file of the former CHICAGO DAIRY PRODUCE in whose pages is recorded a lot of history as pertains to the creamery industry. This file is the property of Mr. Carl. S. Paton to whom the author is indebted for use of the same. In Elgin, Illinois in the Gail Borden Memorial Library was found a fairly complete file of THE ELGIN DAIRY REPORT, which also proved a fruitful source of information. Then too, past files of THE NEW YORK PRODUCE & AMERICAN CREAMERY REVIEW made available to the author through the courtesy and cooperation of Messrs. Gordon and Stephen Urner was greatly appreciated.

Aside from these trade publications, another source of considerable aid was the Agricultural Library in the U.S. Department of Agriculture at Washington, D.C. However, the one individual who has accumulated a vast store of ancient references relative to the dairy industry is Mr. Charles S. Trimble of the Bureau of Dairy Industry, U.S. Department of Agriculture whose considerable aid is hereby gratefully acknowledged.

In tracing the origins of the first cartons used in the packaging of butter, the author is grateful for the patient and interested cooperation of Mr. John S. Parks, Mr. W. F. Jensen and Mr. T.A. Borman, formerly and respectively President, Vice President and General Territory Superintendent of the Continental Creamery of Topeka, Kansas. It was possible through their separate testimonies and communications to recall the incidents of their adoption of the Peters' package in 1901, which was corroborated not only through their separate advices, but also through the legal offices of National Biscuit Company in New York, as well as the columns of the CHICAGO DAIRY PRODUCE. The author feels a sense of personal pride in having had the privilege of collaborating with these gentlemen in bringing back for reader the incidental facts involved in their history-making events.

The author was also singularly fortunate in tracing the origin of the present day "cold waxed" paraffined butter carton, to have had the privilege of consulting personally Mr. John B. Newman, formerly of the Springbrook Creamery of Chicago and later dairy commissioner for the State of Illinois and Mr. W. S. Moore, formerly of the South Water Street firm of W.S. Moore and Company, Inc., packers of the famous "Delicia Pure Cream Butter." Both these gentlemen not only knew Mr. Emerich H. Vavra, the inventor of the "cold waxed" paraffined butter carton but were also familiar with his experimental developments – Mr. Newman having had the added experience of having collaborated with Mr. Vavra in the actual development work

which took place in the office and storeroom of the Springbrook Creamery Company at Chicago, Illinois. Incidentally, much of their testimony was corroborated by the records of the ELGIN DAIRY REPORT and the United States Patent Office at Washington, D.C. where a search revealed not only the case history of the Vavra patent application, but also the fact that no prior patents were granted other inventors of record. In the patent search, the author had the valued assistance of Mr. Max C. Louis of the firm of Cushman, Darby and Cushman of Washington, D.C.

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PRINCELY PACKETS OF GOLDEN HEALTH

Butter – the everlasting delight of the gourmand, the faithful ally of the culinary arts, the constant symbol of good living.

Butter as a food appears to be as old as history. We have record of its use as early as 2,000 years before Christ. The Bible is interspersed with references to butter, the product of milk from the cow. In Genesis, we read that when Abraham was on the plains of Mamre he entertained the three angels who appeared unto him as men as he sat in his tent, and he said to Sarah to take three measures of meal and knead it quickly and make cakes upon the hearth; and it is said that he went to the herd and fetched a calf, tender and good, and gave it to be dressed, and he took butter and milk and the calf which he had dressed and set it before them and they did eat.

Thus, it will be seen that there is divine authority for the statement that butter is a fit food for the angels. Not only has it been regarded from time immemorial as a food fit for the gods, but its use appears to have been divinely recommended and its users promised certain immunities against evil. The Congress of the United States must have sensed its majestic origin, for butter was the only food ever defined by an Act of Congress prior to the enactment of the Food, Drug and Cosmetic Act of 1938.

Butter has withstood the ravages of time, which fully justifies its sacred endorsement and history. Even in the economics of agriculture, there is no substitute for butter.[1] The butter industry has, in some respects, become like a reserve bank. In addition to its regular supply, the butter industry manufactures surplus milk into butter during lush periods and stores it for use during times of shortage. This gives farm security and financial stability to the dairy industry. Not only does butter safeguard the producer against fluctuations in milk supply, but returns to

[1] BUTTER, National Dairy Council 1943

him approximately 60 percent of the consumer dollar, a much greater proportion than any major farm product.

In the field of nutrition, butter has many qualities that explain its preeminence as a food fat. Along other points, its distinctive, appealing flavor contributes to the ease and completeness with which it is digested. Butter has a pleasing aroma with its equally pleasing flavor. Agreeable odors and flavors of foods stimulate natural digestive activity, according to W. B. Cannon of Harvard Medical School.[2] He as well as other eminent authorities emphasize the importance of good flavor at all times for normal digestion of foods.

Butter has long been recognized as a rich source of the fat-soluble vitamin A and its precursor, carotene, from which vitamin A originates. Butter also contains some vitamin D, which is significant inasmuch as this vitamin occurs in but few commonly used foods. Pasteurization and even commercial sterilization has no significant effect on the carotene and Vitamin A content of butterfat, nor has any evidence ever been assembled demonstrating any appreciable loss during churning or storage. More recent studies upon the nutritive values of common fats have pointed to the greater growth-promoting properties of butterfat, as it is included in the diets of progressively younger animals.[3] [4] [5]

Any modern treatise upon the subject of butter would not be complete without discussing it in terms of THE BOMB. Granting atomic fission its completely terrible, and we hope its fully magnanimous properties of atomic energy, which for its sheer power staggers the imagination, we must, nevertheless, recognize that when it comes to molecular energy, butter is still king. For,

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[2] J. Amer. Diet Assoc. 15, 333-334, 1939
[3] J. Dairy Sci. 23, 181, 1940
[4] J. Dairy Sci. 25, 117, 1942
[5] J. Dairy Sci. 26, 429, 1943

as Dr. George R. Harrison[6] has pointed out, one pound of butter contains the equivalent of 18,000 B.T.U.'s, while one pound of coal yields 16,000 B.T.U.'s, one pound of TNT lays claim to 2,400 B.T.U.'s, and one pound of uranium (the basic element of the Bomb) can muster only 2,300 B.T.U.'s.

ANCIENT PRACTICES

Naturally, it is presumed that in four thousand years there has been considerable improvement in the manufacture of butter although as T.C.H. Wegeforth and C. V. Knight[7] advised in 1900, we, of course, know little more of the method by which Sarah produced butter for the angels than we know of the means employed in the construction of the pyramids. The earliest details of method of manufacture are derived from the Arabs and Syrians, who appear to be as well satisfied with the original process of making butter as they are with other habits, since they have remained unchanged for centuries. The original practice of the Arabs and Syrians, so far as is known, was to use vessel made from goatskin for a churn. The animal was skinned, the skin sewed up tight, leaving an opening only at the left foreleg, where the cream was poured in. The "churn" was then suspended from the tent poles and swung until the "butter comes." This, incidentally, is the earliest known process of making butter. In Mexico a few years before the turn of the Twentieth Century, the natives were still placing cream in a bag, the whole taken behind the saddle of a spirited horse, and a tour of a few miles horseback undertaken by the rider. When the journey was at an end, the churning process was supposed to be finished.

Little is known of the part which butter played as an article of commerce in ancient times. Hayward[8] in his account of the early history of the uses of butter advises "in the first centuries butter was shipped from India to ports of the Red Sea. In the Twelfth Century Scandinavian

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[6] Address I.F.T. Convention, Boston, Mass. June 2, 1947
[7] Chicago Dairy Produce, VI, 69, 22-23, 1900
[8] U.S.D.A. Dept. Agr. B.A.I. Circular 56 (1904)

butter was an article of oversee commerce. The Germans sent ships to Bergen, in Norway, and exchanged their cargoes of wine for butter and dried fish. It is interesting to note that the Scandinavian king considered this practice injurious to his people, and in 1186 compelled the Germans to withdraw their trade. Toward the end of the Thirteenth Century, among the enumerated wares of commerce, imported from thirty-four countries into Belgium, Norway was the only one, which included butter. In the Fourteenth Century, butter formed an article of export from Sweden. It may be fairly inferred that butter making in north and middle Europe, if not indeed in all Europe, was introduced from Scandinavia.

"John Houghton, an Englishman, writing on dairying in 1695, speaks of the Irish as rotting their butter by burying it in bogs. His report was confirmed by the discovery, in 1817 and later, of butter thus buried, and packed in firkins (small, wooden vessel or cask) usually holding 112 English hundredweight. This burying of butter in the peat bogs of Ireland may have been for the purpose of storing against a time of need, to hid it from invaders, or to ripen it for the purpose of developing flavor in a manner similar to cheese ripening." Arup[9] has reported upon one deposit of butter buried in peat bogs found wrapped in a skin in County Leitrim, and another packed in a tub with perforated wooden handles in County Tyrone, Ireland. According to Hunziker,[10] it is believed possible that the practice of burying butter in Ireland ceased about the end of the Eighteenth Century and that many of the specimens which have been found are of far greater antiquity (Eleventh to Fourteenth Century). The large number of specimens found, some of which weighed over 100 pounds, suggests that the burying of butter must have been a widespread practice in Ireland. Similar deposits of buried butter were also discovered in Finland.

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[9] Analyst, LVII, 674, (1932)

[10] The Butter Industry, O. F. Hunziker, 3rd addition (1940)

Various other methods of packaging butter have been found mentioned in a variety of sources. A news item in the December 4, 1907 issue of the New York Produce Review and American Creamery tells of a traveler in Central Africa in 1872 being offered butter wrapped in leaves and then covered with a layer of cow dung which upon drying kept air from the butter. Repeated references are found in the literature of instances where pats of butter are cited as being "wrapped in cool cabbage leaves or freshly cut grass" – a practice, which appeared to be rather common in various parts of Europe. As a matter of fact, it was a common practice in the earlier days of the South Water Street market in Chicago, for farmers to refrigerate their shipments of butter transported in open wagons by covering the same with grass freshly cut while still wet with dew.

THE EMERGENCE OF DAIRY BUTTER

History records that a primary object of keeping cows was to supply the needs of the family for milk and butter. Butter was produced almost universally in olden times because it was more essential in the diet of most people although it was several centuries before the consumption of fresh butter became established custom. The art of making butter, therefore, originated in the home.

It was an age-old custom during former centuries for householders in villages and small towns to keep a family cow. As communities expanded and frontiers were pushed back with the growth of nations, many families were gradually forced to procure their supplies of milk and butter from farmers located in their vicinity. Then, as populations became more congested, and as cities sprang up, butter making on farms became more and more important. As the demand increased, small shipments of butter from the dairies established on farms began to flow into towns and villages by horse and wagon, some families thus being directly supplied. As our larger

cities developed, important tracing areas also developed resulting eventually in the establishment of Boards of Trade and later in Mercantile Exchanges s in New York and Chicago, for example.

The farm production of butter began to assume definite shape at least as early as 1791 as Willard[11] stated in 1871 that "Orange County located 50 miles north of New York City had for 80 years devoted its chief attention to butter making and the production of fresh milk for the New York City Market." "Dairy butter," as this product made on the farm was called, made up for sale was oftentimes collected as "pats" "balls" "rolls" and even "prints."

This was particularly true in the Philadelphia market which long enjoyed high reputation for fine dairy butter. It was not uncommon for such "Philadelphia butter" to sell at a dollar per pound and even higher where the prevailing market prices were around 20 cents per pound or less.

Hazard[12] defined this fine Philadelphia butter as follows:

> "Our idea is that butter – such butter as would give a man an appetite to look at, to smell of and taste of – is as far removed from an oily, fatty, or tallowy substance as possible… a firm, fine-grained article, of rich golden color, sweet, nutty aromatic smell and unctuous taste, put up in pound or half-pound lumps, whether square or round, and which, when opened out from its moist, then white linen wrapper, invites both the senses of smell and taste."

Hazard also outlined the most effective methods of marketing butter, which even today makes for interesting and pertinent reading. Therefore, we again quote:

> "Marketing butter by many is thought to be the easiest part of the whole process, or the least important, judging by the manner in which it is done. But marketing it in the proper manner, or to make it the quickest selling, is half the battle. It should be put into the most inviting form to gain the best price. If the maker is near a market, and is about to retail it or sell it to those who are to retail it, it should be put into half-pound or pound lumps, and printed or

[11] American Butter Factories and Butter Manufacture, X. A. Willard, Madison, Wisconsin 1871.
[12] Butter and Butter making with the best methods for producing and marketing it – Willie P. Hazard, Philadelphia (Porter and Coates) 1877

stamped with some emblematic device, such as a sheaf of wheat, a cow, a beehive, or the maker's initials. After the final working, the scales are placed handy, and with the clapper a lump is cut off, placed upon the scales, and either added to or taken from, always being sure to give rather over than under a pound. It is then taken from the scale by one clapper (roughly a spoon) in the right hand, and with the other clapper in the left, it is worked over into a ball by a few expert touches; and while held on the left-hand clapper, the right-hand one having been exchanged for the stamp-mould is dipped in cold water to prevent its sticking to the lump, and then pressed firmly upon it, then withdrawn, leaving a beautiful raised impression of the stamp upon it, and adding to its attractions.

The fashion is now becoming prevalent of making the lumps square, which is more convenient for use and for packing in the market tray. It is also more convenient for the butter-maker, as it is done by a machine which squares and prints it at one operation, and also marks it, so that the consumer cuts it in four parts of about the right size for table, each piece being nicely stamped.

"When it is all stamped, it is set aside in a cold place to thoroughly harden; in a tray in the spring-house water is best. When about to market it, each pound or roll is wrapped in a linen cloth taken out of ice water or cold spring water, and laid upon the shelf of the tray or tub. Some market men have a square box with a sliding lid and several shelves. On these shelves the pounds of butter are placed, the lid is cropped down in its grooves, as the box stands upright on one end, with a handle to carry it by the other. This is very nice for winter use when the butter will keep hard until sold; but for summer use there is provided a large tub made of cedar, with an inner tin vessel, with a well in each end for broken ice, and shelves on each side of them, one above the other, on which the butter is placed, and is removed as it is sold. The shelves are made of thin wood, and rest upon tin projections on the sides about three inches apart. The wooden tub is cooled in ice – or spring water while the tin vessel is being filled with the ice and butter. The tin is then set into the wooden vessel, the lid closed, and the whole enveloped in a padded carpet covering made to fit, and again enclosed in an oil cloth covering. It is thus effectually shielded from hot air and dust, and is opened out to the customer firm, cool and golden, and brings readily its seventy-five cents to one dollar and twenty-five cents per pound, thus well paying for the extra care. Many put up their butter in rolls of five or ten or more pounds, and sell it so, sometimes wrapped in muslin, sometimes not; but either way it never looks so nice and attractive as the nicely-stamped pound lumps, and of course does not bring so good a price."

> "In general terms, it may safely be said that the less possibility there is of interfering with the condition of the butter from the time it leaves the dairy till it reaches the larder, the better for both producer and consumer. To alter the condition of butter by redressing or repacking is commercially culpable, whilst the introduction of any other substance, however innocuous, is fraudulent adulteration. To prevent both effectively is to pack the butter at the dairy in the several quantities to suit the requirements of larger or smaller households or dealers. These packages ought only to be opened for examination as to quality; the butter would be in such a way be fully protected from the injury, and as it left the dairy so it reaches the larder."

From the foregoing descriptions of Philadelphia dairy butter, it is quite apparent that the art involved became highly developed. It explains why Philadelphia is properly called "the home of print butter" as in that market it was so thoroughly exploited. As a matter of fact, Willard [11] mentioned that the linen wrappers or napkins used in the Philadelphia market for covering the print butter were often washed, ironed and returned by customers to the dealers in their market stalls. In other areas, the rolls, pats, or prints produced on dairy farms for sale were wrapped in freshly laundered pieces of cloth rags of either white or colored and printed fabrics which lead to the adoption of that rather descriptive term – "shirt-tail wrappers." Cheesecloth was early adopted as an economical wrapper in the place of the linen wrappers or napkins used in Philadelphia and later replaced with a "butter" or "dairy cloth" made expressly for the purpose of wrapping rolls, pats and prints. In the 1880's and 1890's, paraffin paper later replaced by vegetable parchment were used as wrappers in place of the various cloth fabrics. It might be mentioned in passing, however, that Hazard [12] was not unaware of the possibilities of paper as a wrapper, for in his text can be found a statement relative to keeping butter fresh, which reads as follows:

> "…it is then wrapped in clean white paper which has been coated on both sides with a preparation of white of egg and fifteen grains

> of salt to each egg, the paper then dried, and heated before the fire, or with a hot iron just before it is applied to the rolls of butter."

Concerning the molding and packing of butter in California in 1870, Willard [11] states "butter is sent to market in barrels, half-barrels and in two-pound rolls placed in packages." The rolls were made three inches in diameter and nearly seven inches long. A mold used for the purpose of forming these rolls had two iron handles crossing each other on a pivot and used similarly to a pair of nippers. By applying pressure on the two handles, butter was compressed in the mold into a solid roll. The roll was smoothed by rolling with a wooden paddle following which each roll of butter was wrapped in cloth. Fine cambric cloth cut in strips long enough to surround the roll and wide enough to leave about one-half inch of cloth at each end served as the wrapper. The wrapped rolls were then set on end in an oblong box of either cedar or redwood and securely held in place with the cover fastened down. Such rolls were supplied the San Francisco market.

Mr. L. S. Hardin of Kentucky in addressing the Vermont Dairymen's Association during their eighth annual meeting of January 17-19, 1877 had the following comments to offer concerning the packing of butter:

> "If the butter is to be packed into tubs, do not put in small pieces at a time and pound it in, but rig up a lever and put in enough to half fill the tub at a time, and press it firmly down. This will retain the grain of the butter. If you learn to be a first class butter maker there is no reason why you should not also learn to market it to the best advantage. To do this, put the butter up in pound prints. Do not use a mould – it gives the butter a dull look. Press it into the form of a brick with a stout paddle, and press cross lines on one side with the edge of the paddle. Each pound should be wrapped in a piece of white cloth. These cloths should be taken off by the merchant and sent back in the butter box. A very nice cloth for this use where it is not to be returned, is a cheap check muslin. The butter shows through it very prettily. Print butter should be shipped in a neat clean package, nicely painted on the outside. The box must hold ice and present a handsome appearance when the lid is off. If you

> can induce the merchant to put the butter in an upright refrigerator with a glass door, so the customer can see the handsome prints of butter with ice above it, he will buy some even if he does not need it. We cannot take too much pain to please the customer. It should be borne in mind that no merchant could keep his customers for any article he offers for sale unless he is prepared to offer the article in uniform quantity and quality. In order to get up a trade in butter he must have a regular supply of so many pounds a week the year round (a little more when buckwheat cakes are ripe), and it must be the same in quality all the time; whether the thermometer is sky-larking among the hundreds, or kicking the bottom out of the bulk at 30° below zero. The butter must also present the same uniform color winter and summer, and should be put up in the same shaped packages with a uniform figure on each pound. It is thus and thus only that you can build up a reputation that will always bring money to your pocket and furnish you with a 'good will' that no calamity can take from you."

Incidentally, it should be recalled that in 1894 the "World's Largest Creamery" was located at St. Albens, Vermont which was reputed to have made 25,000 pounds of butter daily.

THE PRACTICES OF THE FARM WIFE

In those earlier days, butter making was largely the province of the farm wife. She first skimmed the cream from the surface milk allowed to "set" in shallow bowls or pails. The cream was then usually churned in the old familiar wooden cooper-made dash churn invariably referred to as an instrument of torture by those who, as boys, had to operate them. Other forms of churns were introduced from time to time, such as rocker churns, swing churns, circular churns with revolving paddles and square box churns swung by diagonal corners – none of them, however, becoming sufficiently popular to displace the dash churn until the barrel churn was later developed for factory use.

These farm wives of earlier days often used their butter as barter at the general stores in small country towns or trading centers in exchange for merchandise needed at home. The more enterprising storekeepers would encourage those ladies whose products they recognized as being

of superior quality, to use different types, and incidentally ever-increasing sizes, of containers as packages for their product. Wooden pails holding five or ten pounds were used as well as earthenware crocks. Bradley butter boxes of circular construction with wooden slip covers and made of spruce or maple-veneer in various sizes such as one-half, one, two, three, four, five and ten pound sizes were popular in New England and New York State in the 1880's. Also, tapered spruce tubs of five, ten, twenty, and thirty pound sizes were used to some extent on farms and were popular as their sizes permitted them to be nested one within the other, which made for convenience and economy in their shipment to general stores. Wooden containers thus came into general use, as other materials were not generally available such as paperboard, for example. Woodworking was extensive in those earlier days and as a matter of fact, the first utensils used on farms making butter were mostly made of wood.

While some store proprietors encouraged farm wives to pack their product in tubs, Bradley boxes and the like, most of the farm butter brought into the general store was in the form of "pats" or "rolls." As a matter of fact, butter "rolls" became known as cash-weight rolls. As more and more farm butter was produced, local markets could not consume it all locally and therefore it was shipped to ladlers and renovating plants located in central points. The best butter was sorted out and reworked, packed and sent to the market under various trade names. The poorer grades were sent to renovating plants where the butter was melted, and the butterfat was mixed with skim milk and reworked. The renovating plant was placed under Federal supervision and required a special license. Adulteration of butter became a menace and to further confuse the public, colored oleomargarine was offered for sale as butter. The latter practice became so widespread that President Cleveland in an address to Congress called attention to the situation and asked for legislation to prevent such despicable trade abuses.

THE DEVELOPMENT OF BULK PACKAGES

As the traffic in butter increased, larger containers came into more general use and became popular as they permitted shipment of their contained butter to more distant markets. Dairies became neighborhood affairs where one farmer did the churning for a few of his more immediate neighbors. In the last half of the Nineteenth Century, small shipments developed into traffic whereby the bulk of the stock to reach New York City, for example, came by river boats – the product of Orange, Delaware, Greene, Cortland, Chenango and Chattaraugus Counties, New York and later from more northerly sections, as well as Vermont. Many of the dairies in these areas developed a craftsmanship and quality of product that had an appreciable trace acceptance even in the early 1900's. In fact, Orange County was famed as a butter producing area just as the adjacent Herkimer County became renowned for its cheese.

Many of these dairies made a good deal of butter during the summer and early Fall, packing the summer product (or "June" butter as it was commonly called) in casks or "firkins" holding an English hundredweight of 112 pounds. The butter made in the Fall was packed in oak tubs, half the size of the "firkins," holding 56 pounds, and were called "fresh ends." The butter in these containers was held in cool cellars on the farms until ready for market and the quotations carried the terms "Entire dairies, firkins and tubs."[13]

The firkin was favored for the foreign trade although it also had considerable domestic acceptance. It was made very tight, well coopered, and usually of white oak. Butter packed in such containers was kept for months in perfect order.[14]

Some grocers for the home retail trade liked it. In packing these firkins, it was common practice to bore a small hole in the head, just before shipping, and pour in as much clear, well

[13] The Producers Price Current, Vol. 77, No. 88, 25-27, Feb. 9, 1934
[14] The Dairyman's Manual, Henry Stewart (Orange Judd Co. N.Y.) 1888

skimmed brine as was required to fill any vacancies between the butter and the package, thus displacing the air, and closing the hole with a well fitting peg cut off flush with the surface. The oak half-firkin tubs were also popular in Eastern markets in the early Nineteenth Century later replaced by the large blue pails holding about 60 pounds used for shipping fresh creamery butter particularly in New York State and Pennsylvania. They were in use for a number of years but were abandoned because of a strong feeling that developed against returnable packages.

The firkin owed its popularity as a bulk butter container because it permitted the storage of butter without quality impairment and without refrigeration. It kept butter in good condition in the springhouse on the farm, in a commission-house cellar in New York or Chicago or in the hold of a ship rounding Cape Horn enroute to the Orient. To give the reader the benefit of its utility as well as an appreciation of some of the problems confronting the makers of dairy butter in the Nineteenth Century, we are quoting below from a letter[15] addressed to the Editor of the Chicago Dairy Produce in 1899 concerning the experiences of one D. Hall in the days of dairy butter:

> "Having been born in New York in the year 1844 upon a farm on the Chenango River and in the county of the same name, I have seen the growth of the dairy business of that state. My first experience was with sheep and cows, as most farmers kept both. We used the old-fashioned 10-quart pan, straining the milk in these and letting it set in a milk room to rise, using a tin skimmer when the cream was ready to skim. We kept our cream from two to three days, stirring it as often as we came into the room and also when we put in fresh cream. We used a dash churn for a number of years, and then purchased a crank churn with a dash inside, which turned and thereby agitated the cream. We always stopped churning as soon as the butter had gathered enough to draw off the buttermilk. The butter was washed in the churn, and then removed to a large wooden bowl in which it was mixed with the salt, but not worked too much to injure the grain. The butter was set away in the cellar until the next day, when we re-worked it in the same bowl, using a ladle (there were no workers in those days) until we

[15] Chicago Dairy Produce, VI, 33, 26, Sept. 23, 1899

had it the desired shade, which every dairyman knows but can hardly describe.

The butter was now packed into 100-pound firkins and it usually took two or three churnings to fill each. Then a cloth wet with brine made of saltpeter was placed over the top and the space filled with wet salt.

(Now, boys, don't kick because we used an 'embalming fluid' over our butter, as I think if some of us would use the same plan nowadays there would be less butter with strong tops.) These firkins were kept in the cellar from about the 20th of May until late in the Fall, or until it got cold enough so buyers could ship to New York City, as this was our only market. And how do you think we shipped? Why, by the 'raging canal' – the old Chenango canal to Utica, then the Erie canal to Albany, then down the Hudson River to New York City. No railroads in those days."

CANNED BUTTER

Popular as the firkin was as a bulk butter container, its contents oftentimes became tainted with woody flavors. Strange as it may seem, fine butter was a delicacy consistently sought by the commissaries of mining and lumber camps. The hearty workers apparently demanded copious amounts of fine butter for flavoring their flapjacks. When gold was discovered in the Yukon, the affluent miners were willing to pay any price in order to satisfy their taste for fine butter. Perishable foods were unknown delicacies in the Arctic Zone. Butter, of course, was one of these perishables. Suppliers in the United States working on the problem found that butter sealed in cans from which the air had been exhausted was still creamy and fresh months later. Thus, the discovery of gold in Alaska gave impetus to the canning of butter in tin containers – a practice that was later followed in supplying export demand and for expeditions to remote and unknown regions.[16] [17] The U.S. Navy became interested in this method of packing butter and in 1912 considerable effort was made to secure a grade of canned sweet butter that

[16] Private communications, B.R. Clark, July 16, 1947.
[17] Chicago Produce, II, 16 6, Sept. 2, 1895.

could be carried for a long time in almost any climate. It took a couple of years of hard work to get the butter up to the required standard, but in 1914 substantial orders for millions of pounds of such butter were placed by the U.S. Navy, which orders were filled satisfactorily but only with the cooperation of a hundred or more plants in Iowa, Minnesota and Wisconsin. Chief Rawl of the Dairy Division of the Department of Agriculture became so interested in the development that he suggested that this sweet cream butter be put on the commercial market – which was finally done. Thus, today the sweet cream butter sold in many markets throughout the United States that has enjoyed an ever-increasing market had its origin in the "strike" of gold in the Yukon in 1861.

THE ADVENT OF CREAMERY BUTTER

With the Nation growing and ever expanding the frontiers, the demand for fresh butter increased. The start of the factory system of making butter is not too well established. However, the experience related by one D. Hall in a letter[18] to the Editor of Chicago Dairy Produce in 1899 is illustrative of how the trend to creamery operations developed:

> "In about the years 1859 and 1860 the farmers began looking for some way to widen out in the dairy business, as our neighbors in the adjoining county were building cheese factories and reaping the benefit of a foreign market for their output. But the war breaking out in 1861 gave a backseat to the prospect in our locality…
>
> In 1865 the first cheese factory in our town was erected… After running for about three summers it was decided not a paying institution, and the building was sold, and the machinery also to a new man… By now the farmers began to see that in localities where there were factories they were doing better. This started them to locating factories from six to 10 miles apart over the country when milk could be obtained.
>
> In 1969 and 1970 dairymen began to combine butter making and cheese factories. We built a pool about 20 feet square, placing a

[18] Chicago Dairy Produce, VI, 49, 26, Nov. 18, 1899.

> partition each way through the middle, so each end could be drained and cleaned without disturbing the others. Of course all factories must have running water. It was thought that unless a good spring could be had there was no use of a factory.
>
> We took milk both morning and night. The night's milk was strained in the long, shotgun cans and placed in the pool. In the morning these were removed and the cream taken off with the funnel skimmer. The milk was turned into vats, while the morning's milk was weighed and strained in with it. This gave us what we claimed was a slight skimmed cheese… The cream was churned in the old-fashioned dash churn and (now we have our first worker) which was the old lever worker, which all creamery men are familiar with… This working was partly done, the butter set aside for three to six hours, then reworked and packed in firkins… and placed in a cellar. Instead of putting the cloth and salt on top, we bored a hole in the top head of the firkin and filled the space with strong brine made from salt and salt-Peter, going over the whole lot once a week, so as to keep the firkins full of brine.
>
> Perhaps some of you readers will ask how did we ship… at this time? I will say that in 1867 we got, by furnishing heavy bonds, a railroad through our valley and from then on it seemed that all roads wished to come our way."

The early creameries in this country followed what was termed "the whole milk system." This term refers to the practice whereby farmers delivered their whole milk supplies to the factory or creamery daily or at frequent intervals. In the very early creameries, the whole milk would be collected in so-called Cooley cans which when sufficiently full of whole milk were placed in pools of spring water to cool and "set" (or cream). The cream was then skimmed off with hand dippers and when a sufficient quantity was thus collected, the cream was churned. Later, centrifugal separators were used for removing the cream from the whole milk following the introduction of the DeLaval Cream Separator from Sweden into this country in 1879.

The whole milk system of creamery operation was satisfactory as long as the milk was brought from territories fairly contiguous to the creamery. However, as more farmers took up dairying, enterprising manufacturers developed and offered small hand separators for use on the

farms. With either hand or other power, these machines separated the cream, which was cooled and ready for its transport to the creamery. This left the skim milk with the farmer, which was valuable as, feed for calves and hogs. The introduction of the hand separator revolutionized the creamery business. Big plants were established over a wide territory and frequently cream was shipped hundreds of miles to the factory and was made possible by the growth and expansion of the railroads. This system of creamery operation became known as “the gathered cream system” chiefly because of the long hauls or as “centralized creamery system” as the big factories could be located in strategic railroad or trade centers. Incidentally, the centralized system became common practice in the Middle West where the greatest expansion in the creamery business took place.

The question as to when and where the first creamery was started has never been satisfactorily resolved. Records indicate that a factory was established by Alanson Slaughter at Walkill, New York in 1861, another at Middletown, New York in 1863 with others in New York State the following year. Factories wee also started in Illinois in 1867. All of these plants, however, made both butter and cheese.

The Elgin Butter Company was established in Elgin, Illinois in 1871 following the visitation of Dr. Joseph Tefft and others to Orange County, New York to learn the essentials of butter making as practiced in that celebrated district which then had its high reputation for the best quality dairy butter. This creamery was engaged in the manufacture of butter only and got its start by utilizing the surplus milk from the condensed milk factory of Gail Borden located in that city. In 1872, John Stewart erected a creamery in Manchester, Iowa and later “wrote history” by winning the Grand Sweepstakes at the Philadelphia Centennial Exposition in 1876 thus advising the world that good quality creamery butter could be made west of the Allegheny

Mountains – in fact, even west of the Mississippi River. Elgin, Illinois later became the Butter Capitol of the World because of its renown for fine creamery butter whereas Iowa and later Wisconsin and Minnesota also came in for their just share of recognition as quality butter producing states. From Illinois and Iowa, the creamery operations spread rapidly throughout the western United States, across the prairie states and out to the Pacific Coast, California later sending some of her product to eastern markets when prices were attractive.

The factory system of butter making made rapid strides and received tremendous impetus through the introduction of the centrifugal cream separator and the invention of simple method by which the exact butter fat content of milk and cream could be determined by the creamery operator. Before the days of this Babcock test, milk was purchased in bulk regardless of its fat value. With its discovery in 1890 and its subsequently rapid adoption by the dairy industry, a factor of control was introduced which in its absence would have doubtlessly retarded progress in dairy operations.

THE BUTTER TUB COMES INTO ITS OWN

Along with the changes in butter making wrought by the advent of creameries, there developed also a change in the type of bulk package. The firkin began to lose ground and early in 1863 white ash 60-pound tubs were introduced in the west. They found such favorable acceptance that it was not long before they came into quite general use. In the east, the spruce tub was favored probably due to the fact that Vermont and northern New York State butter was packed in 20, 40 and 60-pound sizes made of that wood.

The tub came into general favor as both dairymen and creamery men became shippers, their product finding its way to markets such as New York, Philadelphia, Boston, and Chicago where it was sold through commission houses and brokers. There were some variations in the

size and style of such packages which becomes understandable when it is recognized that the dairymen had to take into consideration the fact that his butter must go forward every week and accordingly he was governed in the size of the package by the amount he would have to ship. In the Chicago market, the 40 or 50 pound ash tub was preferred by this type of shipper whereas the creamery men, whose chief business was to manufacture butter in large quantities, adopted as their favorite package the 60-pound, 5-hoop, hand-made, clear ash tub, well put together, without glue or nails.

For years, there was a controversy between the east and the west as to the relative merits of ash versus spruce tubs. As the years passed, suitable white ash became increasingly scarce, and some of the tub manufacturers turned to the Sitka spruce and Douglas fir forests of the Northern Pacific Coast. These woods were relatively free from flavor and made attractive containers. The early made tubs contained five wooden hoops, but in 1917 the use of three galvanized steel hoops for the tubs and a galvanized beaded steel rim for the tub covers was introduced, and they replaced the five wooden hoops.

The original size of the tubs was 56 pounds - - the “half firkin” container for the “fresh ends” as formerly quoted on the New York market. For economical and progressive reasons, savings in cost of manufacture and handling, the size gradually crept up in capacity from 56 pounds to 57, 58, 59, 60, 61, 62, 63, 64 and 65 pounds. Pioneers in the manufacture of butter tubs were the Creamery Package Manufacturing Company originally founded in 1882 and the Elgin Butter Tub Company founded in 1886 located at Rock Falls and Elgin, Illinois respectively. The use of the tin fasteners replacing the earlier ten penny nails for holding the cover to the tub apparently was developed in Elgin by the Elgin Butter Company as a means of utilizing the waste tin of the Illinois Condensed Milk Company who manufactured all their own

cans and cases for shipping their product.[19] Incidentally, a Mr. C. W. Gould has been cited as starting a cheese factory in Elgin about 1860 (the Illinois Condensed Milk Company factory having been erected in 1865) and later engaged in butter making using as tubs for shipping his product, containers made of flour barrel staves cut in half.[20]

Australian square boxes, containing 56 pounds were introduced when creamery men began to consider the prospects of foreign markets but they never became popular in the east although they were used to some extent in the Central and Western sections of the country.[21] Boxes of other shapes and sizes come into moderate use, especially where butter was to be cut and otherwise molded for prints.

The most common and constant complaints against butter packed in tubs, boxes and pails prior to 1890 pertained to woody flavor, mold contamination and difficulty in stripping tubs. The common method employed in efforts to control these defects was to soak the tubs, boxes or pails in salt water the night before they were used. The following morning they were rinsed out with scalding water and then with clear cold water, after which the butter was packed at once. Every effort was made in packing to eliminate air holes and when the tub or pail was full, it was placed in a cool place so that the tops might be chilled. When taken out, a little brine was poured over the top surface of the butter in each tub and a white "dairy" or "butter cloth" put on, the cloth having been cut the size of the top. The cloth was then smoothed on top of the butter and salt sprinkled on and rubbed around and around until a thin even paste covered the cloth. When butter was so covered, it would generally reach the market with a smooth and bright surface, as the cloth would strip clean.

PAPER AND PARAFFIN PUT IN AN APPEARANCE

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[19] Private Testimony – John B. Newman, August 19, 1947.
[20] Hoards Dairyman, August 1, 1904.
[21] Chicago Produce 111, 31, 1, Sept. 19, 1896.

The next step appears to have been the use of paper liners – Paraffin paper having first been recommended and used for such purposes. One of its staunchest advocates was quoted as follows:[22]

> "I have experimented with paraffin paper and know what I am talking about. Last year I stored 6,000 tubs. Every tub was lined with paraffin paper. When I took the butter out last winter there was not the slightest taste of wood to the butter. The flavor was as good on the edges as it was in the center of the package, and the paper gave us no trouble adhering to the butter. Further than this, the paraffin paper I used did not color the butter or make it dark in the least."

The reference to the paraffin paper not discoloring or darkening the butter may seen rather strange to the reader but in the 1880's and 1890's, paraffin was not as highly refined and free of odor and color as our modern product.

In 1889, W. F. Brunner interested Mr. Sol Wheat Hoyt in the possibilities of vegetable parchment as a liner for butter tubs. Sample liners were sent to the Fairmont Creamery Company for investigation and were found satisfactory according to Mr. E. F. Howe.[23] Incidentally, Mr. Howe had begun to use vegetable parchment sheets for wrapping pound prints of butter in 1888. Apparently, his experiments with vegetable parchment marked the beginning of the almost indispensable use that vegetable parchment now enjoys as a wrapper for butter and other fatty foods due, of course, to its grease-proof character, insolubility, high wet strength, as well as its odorless and, in fact, tasteless properties. Parchment because of its peculiar and distinctive characteristics, contribute as important prerequisite to our modern butter packaging methods.

Following this beginning, parchment paper had gradual but steady acceptance. Paraffin and paraffin paper had its advocates and had the paraffin available at that time been free of "kerosene" odor and pure white in color, as is the case with our modern product, it is conceivable

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[22] Chicago Produce I, 4, 7, June 30, 1894.
[23] Private communications, W.F. Brunner, Jan. 22, 1924 E.F. Howe, Jan. 31, 1924.

that parchment paper as a liner for butter tubs might not have enjoyed the ready acceptance that it did win. Such a situation is apparent when one reads the following excerpt from a leading trade journal[24] of the day in 1894:

PREPARING TUBS

> "Hoard's Dairyman has the following regarding the preparation of tubs for packaging butter:
>
> > 'Some soak he tubs in clear water, some in brine, some use the parchment paper and some 'paint' in the inside of tubs with melted (and hot) paraffin. Soaking the tub prevents the absorption of moisture (and the salt with it) from the adjacent butter, besides tending to destroy the aroma of the wood. Salt added to the water intensifies these effects. The use of parchment in addition to the soaking is making 'assurance double sure' and is practiced by many of the best private dairymen. Coating the inside of the tub (top, sides and bottom) with a thin layer of hot paraffin obviates the necessity of soaking and use of paper. The tub must be dry and the paraffin is easily applied with a brush.'
>
> CHICAGO PRODUCE would ado that our best judges claim paraffin paper lining, if the paper be first class, is the best protection against loss in weight and deterioration of quality on account of woody taste from package. Paraffin paper is desirable particularly for goods for storage."

Nevertheless, the fact remains that vegetable parchment did fill a need as a butter tub liner and as a wrapper for print butter. It would strip from butter very well indeed as the butter would not stick to the parchment paper! Paraffin, if properly refined, was inert as far as affecting the color and odor of butter was concerned but more important still, it provided a barrier against both moisture and odor and taste as well as which obviously offered protection against loss in weight and deterioration of quality on account of any taste or odors that the package itself might impart.

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[24] Chicago Produce I, 5, 3, July 7, 1894.

Therefore, we find that in 1896 the Chicago Butter and Egg Board, by unanimous vote, put itself on record as being in favor of paper lining for tubs in which butter was packed.[25] It advanced the following reasons for its action, namely (1) it protects the butter from the wood and also prevents it from getting stale on its sides, (2) it makes the tubs strip easier eliminating the loss from butter sticking to the sides or bottoms of the tubs, (3) it holds the moisture in the butter giving it a cleaner and brighter appearance, and (4) it results in the butter having better keeping quality in storage.

By 1897, the use of parchment butter paper had become widely accepted and one manufacturer had received the highest award for his product at the World's Columbian Exposition so that they were able to advocate and advertise[26] their product for (1) wrapping print and roll butter, (2) carrying trade marks or names by printing the individual wrapping sheets, (3) tub linings, (4) parchment circles for tub bottoms and tops, (5) box linings for both bulk and print butter.

Vegetable parchment, like two other technical necessities in the successful individual packaging of butter, was discovered by accident. In 1853 an Englishman, W. E. Gaine, reputedly was preparing a sheet of cotton rag paper made by hand for use in demonstrating a lecture. While he was examining the sheet, it accidentally fell into a receptacle containing sulphuric acid. On recovering the sheet, much to his surprise, he found that the handmade cotton rag paper had taken on an entirely new form. Instead of being a porous, absorbent and opaque sheet of paper, that which he held in his hand was translucent. By further experimentation he found that no amount of soaking in water, or even boiling, had any apparent effect on the product of this accident.

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[25] Chicago Produce, 111, 53, 1, December 5, 1896.
[26] Chicago Produce, 111, 101, 17, May 22, 1897.

At first Gaine's Paper, as it was called, was treated as a scientific curiosity, and its extraordinary properties were described before the Royal Society of London in 1857. Several years elapsed, however, before vegetable parchment was produced on a commercial scale by hand in a factory established in 1861 in London by Warren de Larus. From these beginnings, the manufacture of vegetable parchment spread throughout Europe and was first made in America in 1885 at Passaic, New Jersey and 12 years later was being accepted as an indispensable butter tub lining and print butter wrapping material!

"OUT OF THE CRACKER BARREL AND BUTTER TUB"

In 1896, when vegetable parchment paper was really beginning to win acceptance in the butter industry, the National Biscuit Company decided to market a fine, flaky and tasteful soda cracker, which required protection from breakage, moisture and rancidity of the oils contained, by packaging it in a folding carton.[27] The new soda cracker was marketed under the name, "Uneeda." The Uneeda biscuit was significant in that the National Biscuit Company packaged the new cracker in a shell-type folding carton of chipboard with an inner wrap of waxed paper (called the "Inner Seal") and covering the carton with a printed, decorated over-wrap on he outside. The carton itself is now commonly referred to as the "Peters' package" in deference to the name of its inventor – Frank M. Peters – who was granted U.S. Patent 621,974 in 1889 in connection with the same.

The Uneeda Biscuit "Inner-Seal" package was advertised in newspapers and on billboards throughout the country. It was possible the first time that a food product of that character had been identified with the manufacturer through a program of national advertising. The National Biscuit Company's development and sales promotion of its Uneeda Biscuit

[27] Paperboard and paperboard containers – A History; H. J. Bettendorf (Board Products Publishing Co., Chicago – 1946.

package did not go unnoticed in the butter industry as we find, for example, that D. W. Willson, Editor of the Elgin Dairy Report had the following to say in 1902:[28]

> "The handling of goods in bulk that can be put in packages has become almost obsolete. The most notable example of the success of package goods is shown in the biscuit trade. Before the consolidation of the various companies there was scarcely any amount of goods put in packages, but with the consolidation came new ideas and the result has been that practically nine-tenths of all of the crackers sold in the country are sold in packages or cartons. A very great convenience to both the retail dealer and the consumer. So with butter the retailer pays for 50, 60 or 100 pounds of butter in prints and sells it without any loss, and sells the packages in he same shape in which he received them. The butter is much more tidily kept, both at the store and in the home. The result is an increased demand for the product and an increased demand for this method. The creamery man who adopts this method of packaging his butter will find it very greatly to his advantage."
>
> One of the special advantages of packing butter in this form is the fact that the creamery man can use a copyrighted label or trace mark and thereby hold his trade and create a demand for the quality of goods he is making, if he is making such as to warrant consumers in calling for his brand. In addition to the convenience and desirability of this method it will induce a higher grade of goods. The creamery man who puts out his butter in this form naturally will desire to have a repetition of the orders from his dealer, and naturally of course will endeavor to make such goods as will induce the dealer to continue his trade. The dealer of course depends upon the consumer and desires to have goods that will meet the wants of his customer, and the better the goods the larger the trade. These are two of the reasons why package butter is becoming so common and why it will grow in favor."

These pertinent and prophetic comments of Editor Willson were at that very time being confirmed in practice as the individual packaging of butter was under development in two separate and distinctly different trade applications. Mr. John S. Parks, President of the Continental Creamery Company of Topeka, Kansas was not only alert to the sales possibilities of the Peters' package (that was putting "Uneeda Biscuits" on the pantry shelves of America) as a

[28] Elgin Dairy Report XI, 43, March 24, 1902.

proper vehicle for the distribution of his company's butter but he was doing something about it! In order that the reader might get the story first-hand we are quoting below Mr. Parks' narration of his experiences in this matter:

> "The Continental Creamery Company was the first of centralized organizations for the manufacturing and selling of milk products. It was organized in January 1900. I became its president in January 1901. It soon became apparent that if the company was to be successful in marketing its products, especially butter, it had to be done in an individualized manner. Butter was being sold to jobbers and wholesalers in thirty and sixty pound tubs. It was being retailed in chip trays or paper containers, all of which were messy, unsightly and dirty.
>
> I felt butter should go to the consumer in a more dainty and cleaner manner. I experimented with the pound print wrapped in parchment. It was a step forward but lacked a lot of meeting my idea. The National Biscuit Company about that time solved its selling problem by putting on the market crackers in individual pound packages. This particular package was the brainchild of Frank M. Peters… who was… endowed with unusual mechanical ability. Realizing the admirable quality of Peters' "Inner-Seal" Package for butter, I started negotiations with him for its use. He had given exclusive rights for its use to the National Biscuit Company so appeals from other concerns did not interest him. Frequent trips were made to Mr. Peters' office in an effort to break down the exclusive right which National Biscuit Company held for its use, but got nowhere with Mr. Peters nor his company. My principal argument was that crackers and butter should be marketed in similar containers and that the "Inner-Seal" package was the only one that could be used for such a purpose. One day while in his office I asked Mr. Peters if he would go with me to Mr. Green's office to get that gentleman's final slant on the idea. Mr. Peters agreed to go. Mr. Green was quite friendly but obdurate. He finally turned to me and said he would consent to Mr. Peters giving me a license to use the package provided I would name the product "U-need-a-Butter." I told him I could not agree to it… Finally Mr. Green consented that Mr. Peters might license me to use the package for butter only. I was given the privilege of permitting its use by the Continental Creamery Company, and then to the Beatrice Creamery when the two companies consolidated their interests in 1906.

> Following the battle acquiring the right to use the package came the problem of naming the product that was to go into it. The name "Meadow Gold" came to me one night as I was on my way to Philadelphia to consult an advertising agency. I wanted to individualize the product and its contents. It all came about as I have outlined."

The general reaction of retail dealers and consumers to the "Inner-Seal" package of Meadow Gold butter confirmed the opinions of Editor Willson for according to the advices[29] of W. F. Jensen, Vice President and General Manager of the Continental Creamery Company at the time of its introduction to the market, the response was practically instantaneous. The first carload of 20,000 packages of one-pound cartons of Meadow Gold butter in the Peters' package was shipped to the Allegheny market in Pittsburgh, Pennsylvania in May 1903 and was disposed of in five days according to Mr. Parks' recollection. Substantial sales developed in various sections of the country such as the South West, the South, New England and Central West as the package had general acceptance being looked upon as a great improvement wherever it was offered. One of the first rail shipments found its way into Mexico and Central America where a demand developed lasting for many years. Mr. Jensen goes on to advise that within a year's time of its introduction, the Continental Creamery was selling better than 80 percent of the 12,000,000 pounds annual production of its butter in the "Inner-Seal" carton in the form of one-pound prints. Later on, in 1906, the consolidation with the Beatrice Creamery Company resulted in boosting the annual production to 30,000,000 pounds. As a matter of fact, it has been suggested[30] that the two main reasons inducing George E. Haskell to seek the consolidation of the Continental Creamery Company with the Beatrice Creamery Company were its "Inner-Seal" butter carton and its Meadow Gold trade name – certainly, excellent reasons as time later proved to confirm the vision of that greatly loved and highly effective business leader.

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[29] Private communication, W. F. Jensen, Aug. 27, 1947.
[30] Private communication, T. A. Borman, Aug. 16, 1947.

Incidentally, the "Inner-Seal" package of Meadow Gold butter included the "block" or print butter of one-pound size wrapped in parchment and again in wax-paper (the "Inner-Seal") – all packed in the chip-board carton with its over-wrap of printed, decorated trade name and legend with end seals. This type of package prevailed until 1912 – the only change made during such interim was the introduction of four – one-quarter pound prints wrapped in parchment and packed in this carton in place of the solid one-pound print in accordance with later trade demands.

While John S. Parks was busy arranging to adopt the "Inner-Seal" packages for the sales promotion and distribution of his company's butter, The Springbrook Creamer Company with the collaboration of W. S. Moore of Chicago[31] were seeking ways and means to improve the method of distributing prints. Just before the advent of the 20th century, one-pound prints of fine creamery butter were being packed for the U.S. Navy in square tins (having a center friction top). The prints were wrapped in cheese-cloth and put into these square tin cans within which wooden slats had to be placed to keep the prints away from the sides and bottom as the can was filled with brine before sealing – the brine acting as a preservative, of course. It is quite apparent that such a method of packing was time-consuming and costly although such packaged butter was reported to have kept well as records were constantly received of shipments scoring 93 points even after six months storage without refrigeration.

In their search for better methods of packaging butter, John B. Newman of The Springbrook Creamery Company and "Billy" Moore learned of an Emerich H. Vavra who "had some ideas about a butter carton."

[31] Private testimony, W. S. Moore, August 7, 1947.

The outcome of this information was that Mr. Vavra went to work on his idea in the Springbrook Creamery Company at Chicago where Mr. John B. Newman intimately observed his experiments. We quote below Mr. Newman's narrative of Vavra's early experiments.

> "In our earlier experiments, we used chipboard scored and patterned on flat sheets. These sheets were then immersed in a bath of hot melted paraffin contained in one wash-tub, which sheets were then individually removed by an improvised string conveyor and passed through an ordinary clothes-wringer into a second wash-tub that was empty at the start of our experiments. The paraffin sheets after their pressing through the clothes-wringer gave us trouble by sticking together. In an effort to prevent this, cold water was put in the second washtub. This prevented the paraffin sheets sticking together but as the water was warmed up in this tub by the heat from the paraffin sheets, they became "tacky." In order to prevent this, we added cracked ice to the water in the second tub with the result that the "tackiness" not only was corrected, but we were highly gratified in observing that the ice water gave a high gloss to the paraffin coating on the scored, patterned sheets.
>
> While we were quite elated over this discovery, we found that cartons cut out of the paraffin sheets were not satisfactory as the brine from the butter was "wicked" into the shipboard through the cut edges that were unprotected with a film of wax as was true of the rest of the carton cut out from the paraffin sheet. This resulted in scoring and cutting the carton forms out of the chipboard sheet before profaning in order to solve this "wicking" problem as the "wicking" would make the carton soft and lacking in stiffness which otherwise would protect the butter print from losing its normal printed shape.
>
> Chipboard was not fully satisfactory as the carton lacked stiffness or sufficient structural strength in spite of that added by the paraffining and ice water setting practice. In consulting with Elmer Mack of Neenah Menasha it was decided to try tag manila, which proved highly successful.
>
> Another problem, which had to be solved, was the off-odor contributed to the treated carton by the 'kerosene' odor, which was due to the improperly refined paraffin wax we used in those earlier experiments. However, the oil companies finally were able to develop a bland paraffin which then became known as 'dairy wax'

> – a name that is till used today to describe the paraffin used for coating butter cartons."

S. R. Norris and E. H. Vavra applied for their patent on this "Method of Applying Paraffin or The Like to Paper or Other Fabrics" on March 7, 1900 and were granted U.S. Patent No. 677,320 on June 25, 1901. There were at least 17 official actions in connection with the granting of this patent as it was contested by the U.S. Patent Office but finally approved in a 2 to 1 decision on March 16, 1901 following a formal appeal. From the Patent Office record of the case, it appears that Vavra was "supplying paraffin coated paper carton blanks to the trade" from the time of his patent application and furthermore that for at least 18 months prior to August 20, 1900 was "identified with the butter trade" and "acquainted with the appliances employed by butter makers and shippers and especially the packages used" which served to convince him that "the trade has long recognized a need for an impermeable butter package or carton possessing a smooth surface both on the interior and exterior thereof and a high polish giving to the same an attractive appearance and in which the butter might be exposed for sale on the grocers' shelf and which might be used by a discriminating housekeeper to contain the butter until all of the butter is used; such package being especially desirable for individual packages designed to contain small quantities of butter; that he has not in his experience, up to the time the method set forth in the aforementioned application was devised by himself and the co-inventor, seen or heard of a coated material suitable for butter and like packages possessing characteristics above named, nor has he heard of such material through others engaged in the butter trade, though many inquiries with respect thereto have been made." A patent search for at least a period of ten years prior to 1900 served to confirm Mr. Vavra's sworn statement. In passing it is interesting to note that the Vavra carton is the forerunner of our present day paraffined butter carton although from 1900 to 1912, it did not apparently enjoy any extensive use.

In the April 21, 1902 issue of the Elgin Dairy Report we find the advertisement of E. H. Vavra, manufacturer of "the new Paraffined Paper Package that will keep your butter fresh longer than any other package and keep it free from any kind of odor." Instead of the Vavra carton finding the favor with the butter industry that it enjoys today, we find that cartons of strawboard and even paper stock made up of old newspapers having their surface fibers saturated with silicate of soda with an adherent coating of paraffin came into general use. Considerable trouble was encountered with the ink from the newspaper print in such stock which tainted the butter packaged in such cartons.[32] [33] These so-called "silicated" cartons were apparently made of the water- and grease-proofed material described in the Howe patent, namely U.S. Patent 524,024 granted August 7, 1894.

In any event, irrespective of their separate and several merits, the Peters' carton served the very useful and progressive dual purpose of lifting the biscuit-baking and butter making industries "out of the cracker-barrel and butter tub days" although the transition in the case of crackers was much more rapid than that in the case of butter. The Vavra and Howe cartons, of course, merely underscored the trend established by the Peters' package.

PREPARING FOR THE CARTON PACKAGING OF BUTTER

It goes without saying that the invention of the Peters' package as well as those of the Howe silicated carton and the Vavra high gloss paraffined carton opened up new opportunities for the merchandising of butter. The individual packaging of crackers got under way rapidly because of the consolidations that Editor Willson referred to. In addition, a development of considerable importance was the building in 1900 by the E. G. Staude Manufacturing Company of a shell carton machine. (U.S. Patent 730,410, June 9, 1903) for the Heywood Manufacturing

[32] Private communication, D.K. Howe, August 25, 1947.
[33] Private communication, H.R. Bodtke, August 26, 1947.

Company, Minneapolis, Minnesota, which machine was to make two-pound folding cartons for Quaker Oats. According to Bettendorf (27) this machine took printed board from a roll and cut and creased the cartons at the rate of ninety per minute. Staude later built and patented similar and improved machines for Cream of Wheat Company, Minneapolis, Minnesota; Ralston Purina Company, St. Louis, Missouri; Shredded Wheat Company, Niagara Falls, New York; the Larkin Company, Buffalo, New York; Fels and Company, Philadelphia, Pennsylvania; Postum Cereal Company, Battle Creek, Michigan; and the W. K. Kellogg Toasted Com Flake Company, Battle Creek Michigan. By 1909 the machine had been improved so that it would cut and crease "wet" printed stock from a web, strip the waste, and deliver two hundred box blanks per minute. It is this type of machine that is used for very long runs of cartons, printed or unprinted and glued or of the unglued over-wrapped type.

The butter industry was not prepared to undertake the mass production of cartooned butter at the start of the 20th Century as the means for so doing were not available either in its own production facilities nor in the supply of the paraffined cartons themselves. Automatic molding, wrapping and packing of butter prints was unknown although the industry was on the threshold of a tremendous expansion not only in production but in the development of its art. Such mechanical aids as the combined churn and worker (and incidentally 40 years later the "roll-less churn") mechanical refrigeration for processing and storage, pasteurizing equipment for batch and continuous operations, cream ripening and holding vats, neutralizing practice to enhance keeping quality and reduce churning losses of fat, and transportation and marketing were all waiting for their advent. Then too, in the production of cartons themselves, their fabrication from virgin pulp and their volume manufacture as well as multi-color printing and modern attention-compelling patterns were all developments still to be envisioned and created.

In order to convey some appreciation of the momentum that the creamery system did generate following the turn of the 20th Century, we have only to point out that in 1908 more patents were issued for butter churns than for any other device.

As a matter of fact, the Continental Creamery Company and later the Beatrice Creamery Company were able to take advantage of the potential markets for their Meadow Gold Butter in the Peters' "Inner-Seal" package as well as they did only with the most strenuous efforts.

According to "Tom" Borman (30) at that time general superintendent of the Topeka, Kansas plant of the Continental Creamery, "some of the prints were made manually with punch blocks after the butter had been permitted to chill and "firm up." Oftentimes the butter was cut from the tubs using a former machine designed to cut one-pound prints from tubbed or boxed butter. The scraps were then collected and prints made up with punch block. Continental Creamery first used the 'Inner-Seal' carton with a manual operation later using a cumbersome machine designed by Mr. Peters, which performed the entire operation mechanically and thus increased the production enormously. This machine which had been designed and constructed rather hastily required almost constant attention and supervision by a trained mechanic."

Nevertheless, the success of Continental and Beatrice in discovering and establishing a market for cartooned butter, served to interest other factors in the industry to serve the apparent demand. Early in the 1900's, the Blue Valley Creamery Company of Chicago, Illinois spent considerable money in inaugurating the production and distribution of pound prints packed in cartons in the markets they were serving of which the City of Chicago was a considerable one. Fairmont Creamery Company of Omaha, Nebraska was not slow in realizing the marketing appeal of carton butter and early in the 1900's they also prepared to meet the mounting demand, as did other creamery organizations.

BUTTER PRINTING MACHINES

One of the early butter printers was the "self-gauging I X L Butter Printer" described in the Creamery Package Manufacturing Co. Catalogue of 1888. A. H. Reid of Philadelphia, the inventor of the Lafayette Printer, placed his machine on the market about 1893 and like the I X L Butter Printer it molded a single print at one time, both being operated manually by a lever. Later several block printers were designed. Soon the demand for machines permitting the more rapid printing of butter resulted in the first of the larger machines of which the "lusted" was typical, permitting the printing of soft butter from the churn. Apparently, the first hard butter cutter was the Friday which was patented in 1906 followed by the Gehl, he Challenge and others. All of these cutters were operated upon the principle of forcing butter previously packed in boxes and hardened by chilling, through wires properly spaced to permit the forming of one-pound prints. In June, 1904, Mr. R. F. Stewart of Pocantico Hills, New York, a butter dealer having unusual inventive ability offered a butter cutting and printing machine which became known as the American Butter Cutter manufactured and sold by the American Butter Cutting Machine Company. This machine was better adapted for handling hard butter on an appreciable scale and became popular with most of the larger creameries and butter packers. There were, of course, many other printers and cutters such as the Elgin Butter Cutter, the Wizard Butter Printer, and the Low Butter Cutter. Later, the Simpson and Miller Cutters became popular and were used extensively in the industry.

Most of these early machines were progressive developments in an evolution from the manual molding of soft butter as delivered from the churn (truly "butter printers") up to cutters that formed prints or blocks from hardened butter. None of these machines performed a wrapping or cartooning operation. These operations had to be performed by hand and the major

contribution of the cutters was to speed production of the forming operations. One of the first butter-molding machines was the Doering butter printer which was first offered for sale in April, 1919 and covered by U.S. Patent 1,384,245 – July 12, 1921. This machine forces butter through a molding header with considerable pressure thus producing compact prints free from any air holes. While this machine broke down the original structure of the butter to the extent that the formed butter tended to be softer, it was possible to form prints of satisfactory firmness by proper working and chilling of the butter prior to molding. The outstanding advantage of this type of butter molder was its mechanical and continuous operation as well as a reasonable uniformity of print weights – all of which made for economy of time and labor. Later, the MORPAC, Benhil and Kustner machines combined molding and wrapping operations and are today used extensively throughout the butter industry.

Apparently, Frank Beam developed the first cartooning machine for butter in 1919[34]. In 1920, he interested Mr. J. J. Urschel, President of the Woodville Lime Products Company of Toledo, Ohio in financing his project. They found that a wrapping machine was required along with the cartooning machine. A company was then organized known as the Automat Molding and Folding Company and in 1922 a machine was developed and demonstrated at the National Dairy Show in St. Louis, Missouri. This machine consisted of a molder, wrapping and cartooning machine. Later a circular molder was developed and such a machine was installed at the Ohio Dairy Company of Toledo, Ohio. However, all of these units required further development.

In 1922, it was determined that the trade demanded quarter-pound prints. Accordingly, two of these machines were designed and built – one being shipped to the Beatrice Creamery Company and the other to the Blue Valley Creamery Company, both in Chicago. These machines were for wrapping and cartooning individual quarter-pound packages of butter – the

[34] Private communication, M.V. Girkins, September 5, 1947.

prints being formed either with a Doering machine or a Miller cutter. It was not discovered until a little later that the trade demanded four quarters in a one-pound carton, rather than in individually cartooned quarters.

FOOTNOTE

> In connection with the wrapping and cartooning of quarter-pound prints it might be interesting to bring to the attention of the reader that it probably was not until 1907 that any substantial development in the exploitation of the "quarter-pound sticks" of butter got underway. While butter has previously been offered in quarter-pound portions as "pats" or imprinted "balls," the quarter-pound print, as we know it today probably started in answer to request from a New Orleans customer. As Mr. Herbert J. Bird, formerly of Swift & Company advises, the quarter-pound print got started as follows:
>
> > "It was not until 1906 that Swift & Company commenced to manufacture butter in their first Creamery located in Hutchinson, Kansas. The Swift distributing plant in New Orleans was serviced from the Hutchinson plant and a large volume of business was developed.
> >
> > Early in 1907 a letter was received from the manager of the New Orleans unit stating that the Chef of the Checker and Chess Club would like to be supplied with butter in ¼ pound prints which would enable him to slice off for table use without waste or delay.
> >
> > No one connected with the Hutchinson plant has ever heard of packing butter in quarters; pounds were the smallest unit packaged.
> >
> > Never the less with a pail of warm water and a good clean knife the regular pound print was laid on a parchment covered table and quickly cut into four equal portions, wrapped separately and then placed in a regular Brookfield butter carton.

The sample shipped to New Orleans was satisfactory in every way and the regular order for the Checker and Chess Club was filled by hand cutting and wrapping for many months.

Later in the year the Sales Manager at New Orleans wrote asking if we could supply quarters in cartons on a volume basis. He went on to say that he believed if butter were available to the grocery trade in quarters that quite a large segment of consumers would buy a stick at 10¢ when their economic condition would not permit the purchase of a full pound.

Our butter at that time was cut out of Friday Boxes and by experimentation we soon found we could cut quarters in volume.

The net result was that we began shipping quarters in cartons in ever increasing quantities throughout the south, not only from Hutchinson but other cutting plants as well and in a few short years butter in quarter cartons was made available throughout the entire selling territory. The idea was not patented and the introduction of quarter-cartons to the distributive trade was quickly followed by other manufacturers.

While it has been established that prior to 1907 butter had been packed in ¼# prints it was specially prepared for dining cars and hotel trade in a limited way and packed parchment wrapped 12# to a box.

I believe Swift & Company were the first to pack quarters individually wrapped and cartooned for the vast distributive trade throughout the United States.

The original economic reason for the introduction of quarter cartons has long since been lost sight of because the housewife today finds this a most acceptable form of purchasing butter – time saving in putting on the table and economical too."

END OF FOOTNOTE

In 1924, three fully developed models of the Automat Wrapping and Cartoning machines were first exhibited at the Dairy Exposition in Milwaukee, Wisconsin. From that time until 1932, the Automat was the most popular automatic wrapping and cartooning machine in the butter industry although other makes were available but for one reason or another did not enjoy as wide acceptance. In 1932, the Morris Packaging Equipment Company of Toledo, Ohio offered a so-called Junior Butter Wrapping Machine, which won almost immediate favor as it constituted a considerable improvement over the Automat machines and was greatly simplified thereby, providing for better continuous operation. The Morris Company developed bigger machines and in 1940, shipped to the Knudsen Creamery Company in Los Angeles, California its first combined print forming, wrapping and cartooning machine. These machines, like their predecessor the MORPAC Junior, were enthusiastically received and today are very popular in the butter industry.

Other automatic machines for forming and wrapping prints are the Benhil, of German manufacture and the Kustner made in Switzerland. Both of these machines have enjoyed wide acceptance in the butter industry but like the packaging machinery manufactured by the F. B. Reddington Company are generally more popular in the packaging of margarine.

It is interesting to note in connection with the development of the automatic machinery for the molding, wrapping and cartooning of print butter that it was not until approximately 1912 to 1917 that noticeable expansion in the production facilities of the Vavra butter package – the present-day paraffined butter carton – took place. Doubtlessly, this was due to two factors, namely (1) the butter industry was preparing itself to meet the growing demand for individual portions of butter packed in cartons, and (2) technological improvements in the production of folding cartons were being made. It may be significant that it was only in 1917 that the

production of creamery butter first began to exceed the annual make of farm butter according to official government reports. It is probably also significant that in the 20's extensive consolidations in the dairy industry began to get under way as did also the establishment of field-man services by some of the chain store companies predicted on the principle of giving expert assistance to creameries in solving their production and quality problems. The Beatrice Creamery Company, being the first company to carry full-page advertisements of butter in the Saturday Evening Post, inaugurated the national advertising of cartooned butter in late 1912. The Great Atlantic & Pacific Tea Company and the American Stores were also promoting the local sale in thousands of communities of their Silverbrook and Louella brands packed in paraffined cartons, as did other chain organizations. These factors and others served to create consumer interest in cartooned butter aided and abetted by a growing public interest in a high standard of living as well as a higher standard of sanitation.

It should be mentioned in passing that the packing of butter in cartons by automatic machinery developed plenty of "bugs" that had to be eliminated through re-design, as well as by various technological means in the production of cartons and parchment wrappers to make them applicable to such mechanical wrapping and cartooning operations. The Paterson Parchment Company learned, for example, that in using paraffin to coat their paper on one side only it provided not only a barrier that reduced moisture losses but also greatly facilitated wrapping machine operations! There are many, many other detailed innovations that were introduced in the fabrication of butter cartons themselves that contributed appreciably to their production and utility. Just to mention one detail – The Container Corporation of America discovered that by providing scores in the tuck of the carton it made for easier, quicker closing by hand or machine

as well as adding an increment of rigidity contributing to preserving the original shape of the packaged butter print!

THE TWENTIETH CENTURY PACKAGES FOR BUTTER

While we have traced in the foregoing paragraphs, the developments leading up to a practically universal acceptance of the Vavra package – the present-day paraffined butter carton – it must also be recognized that paperboard has not only been replacing the wood and wood veneer used in the "old-time" packages such as Bradley boxes, pails and wooden shells or chip trays but also the wood used in making butter tubs. Fiber and corrugated boxes are today rapidly replacing wooden tubs so tersely stated in the following comments from a former butter tub manufacturer whose firm was a pioneer in that industry:

> "We discontinued the manufacture of butter tubs several years ago as did all the large butter tub manufacturers. The spruce material used for butter tubs was allocated by the government to other purposes such as for the manufacture of airplanes, etc. for the Army, therefore we had no further source of supply of butter tub material and the butter tub became a war casualty.
>
> *Regardless of this, the butter tub was fast being replaced by paper cartons and paper shipping containers and the use of butter tubs was greatly curtailed*." (Italics – our own).

Inasmuch as the Peters' and the Vavra packages were definitely developed and introduced in the butter industry after the turn of the 20th Century, they can properly be considered among the 20th Century packages for butter. In fact, all individual packaging of foods started with the Uneeda Biscuit, ushering in, as it did, a new era in packaging even though it was started in 1896. By 1941, nearly 35% of the creamery butter being produced in the United States was packed in one-pound paraffined cartons. The percentages have increased since then so that in 1946 approximately 42% of the creamery butter produced in the United States was so packaged:

With the advances that have been made not only in the quality of creamery butter but also in the quality of the wrapping papers and paperboard containers used for packaging butter, no one can effectively dispute the following eight advantages for packaging butter in paraffined cartons as advanced by the Paraffined Carton Research Council:

1. Preserves quality and flavor
2. Keeps out undesirable odors
3. Protects perishable body and texture
4. Gives better sanitary protection and prevents crushing
5. Reduces moisture loss
6. Convenience in handling
7. Guards against rancidity
8. Provides brand identification and assurance of quality

With the continuing technological advances being made both in the manufacture and packaging of butter as well as other foods, we can only look into the future with confidence and optimism. Nevertheless, with all the advances, which have been made, the fact remains that the retail store has become the battleground of a most bitter and continuing competition. And to the printed design on the package there falls the major responsibility for attracting the eye – and incidentally, the attention of the customer.

Modern tools and devices perhaps can be profitably considered by those responsible for selecting and establishing the particular designs to be adopted in identifying their own brand name and identity. There has been an ingenious machine developed which tests relative readability and visibility of old and new packages that is a valuable aid in singling out legibility defects in the copy as well as its clarity and contrast effects. There is also an optical testing device for comparing competitive packages or cartons with momentary and variable illumination to weigh their relative recognition value. Then too, Kodachrome transparencies permitting the study of cartons individually or in combinations will invariably or in combinations will invariably bring out good and bad display designing. In fact, in the modern competition all

possible elements of chance must be reduced to a minimum. Consequently, it is important to take full advantage of all modern aids and technical "know-how" in package design.[35]

It is axiomatic, of course, that it is not good salesmanship to "show a thousand-dollar horse in a hundred-dollar barn." Obviously, it would be unwise as well as uneconomic to "dress up" butter in an expensive package that will add materially to the sales price of butter in a high-priced market. Nevertheless, fine butter does desire a dignified package in keeping with its high level of food value. It must be accorded its full recognition in order to meet the challenges in modern competitive merchandising.

In short, modern butter cartons truly are –

PRINCELY PACKETS OF GOLDEN HEALTH!!!

"she brought forth butter in a lordly dish"

Judges 5:25

[35] Modern Packaging 8, 95-100, (1946).