The watchword in all packaging today is convenience for the housewife. Equally important is convenience for the retailer—this means savings, both to him and the consumer. The trend toward convenience packaging began during the 1930's when supermarkets first came on the scene. In the late 1930's, many supermarkets added meat departments, but they were very like a private butcher shop, and were often operated as an independent enterprise on the premises of the supermarket.

Convenience came to these supermarket butcher shops by way of preparing a number of retail cuts in advance for each day's sales. Sausage products were sliced in advance only for the weekend rush, since certain products deteriorated rapidly, once they were sliced.

The advent of the flexible vacuum package early in the 1950's made it possible to pre-slice sausage products and give them a shelf life of three weeks or better. With some of these sausage products, there was little difference in palatability as compared with freshly cut products, but other sausage items suffered some decline in flavor and/or texture.

But quality changes due to packaging are not unique to sausage products. Those of you who have gone to Europe know of the fine quality breadstuffs available there. Packaging of breadstuffs here has brought the centers and crusts into moisture equilibrium, resulting in a soft, and often tough-crusted product. But partially baked breadstuffs, at slight inconvenience to the housewife, turn into a respectable imitation of good breadstuffs with the help of the oven.

Frozen green vegetables, in general, have improved greatly upon the canned product, but in most cases, don't approach fresh vegetables in either texture or flavor. Sara Lee, perhaps, has come closest to the real thing in their preparation of frozen bakery items. They demonstrate a success story based on quality, even though their products are generally more expensive than those of their competitors.

Now, let us consider fresh meat. Pre-packaging, either at the packing house or local distribution center, is surely coming. Just the cost of space in the supermarket compared to space in industrial areas is enough reason for pre-packaging. Good butchers are hard to come by, too.

Even when pre-packaging of meats arrives, I believe that most supermarkets will still have a small department for fresh meats cut to order, similar in size and operation to their present delicatessen departments. Despite the wide acceptance of vacuum packaged sausage products, there are still enough people who prefer fresh sliced products to justify having them available in the supermarkets. By the same token, there will still be housewives who want their steaks cut to the thickness they want, and trimmed the way they want. So, retail meat cutting will never die—it will go the way that retail sausage slicing has gone—into a specialized and profitable small corner of the supermarket. The number of independent butcher shops might even grow, once pre-packaging of fresh meats takes over in the supermarkets; quite a few housewives have come to appreciate the personal service that is sometimes lacking in the supermarket, particularly in the larger cities in the East.

We have long known that retail cuts of fresh meat can be frozen without suffering in quality. The main problem has been moisture loss on the meat surface, commonly referred to as freezer burn. This tends to harden the surface and detract from palatability, especially if the meat has been stored for too long a time. I remember buying frozen steaks in Marshall Field's Food Department in Chicago way back in the early 1950's. They commanded a premium price and were certainly of excellent quality. Our friends up at Pfaelzer have built a very successful business on the mail order sale of frozen steaks and chops, and they are a favorite business gift item for very special people around Christmas time—expensive gifts. Their quality, too, is uniformly good, and they keep freezer burn to a minimum by tight wrapping and rapid turnover.

Fresh meat is particularly well adapted to freezing because of its muscle structure. With rapid freezing, there is very little tissue breakdown; when ultimately cooked, very few people who eat the meat can detect any change in texture. Some also claim to notice that freezing produces a tenderizing effect.

DuPont's BIVAC System for frozen retail meats grew out of a six-year development on our part, and has solved not only the freezer burn problem but eliminates frost inside the package. In addition, under proper lighting and in a frozen food display case with adequate temperature controls, a good color is retained for 30 days; life in the dark in the freezer is at least six months. Color retention, and freedom from frost in the package, which the housewife might think obscures fat and bone, should make this approach a preferred way for reducing meat cutting at the retail level. Another plus is having it done at the packing house or distribution center under more sanitary, government-inspected conditions. In addition, the housewife places her BIVAC meat directly into her freezer without re-wrapping. When she wants to use her meat, the package in her freezer is still frost-free—she can really see what she's going to cook! How many times has your wife taken an iceball from the bottom of her freezer and asked herself, "What is this?"
The BIVAC System's initial success has been mostly in the institutional field. The finished cuts arrive without weight loss, and in excellent condition, which probably accounts for their fast-growing acceptance. The first real break-through in the retail area for BIVAC frozen meat is occurring in the convenience stores. Many housewives are surprised with welcome guests late at night, or on a weekend, and want to honor their guests with fresh meat, rather than delicatessen fare. With normal meat outlets closed at these hours, the convenience store is the logical place for the housewife to turn to. Convenience stores, being mostly family operations, lack the experienced help or volume to handle fresh meats. All they need now is proper freezer facilities, and BIVAC packaging adds fresh meat to their sales.

A great advance in meat handling was made with the advent of the so-called "boxed beef." After breaking the sides into raw-ready primals and sub-primals, the cuts are put into an oxygen-barrier bag, and most of the air is removed from the bag prior to sealing it off. When the boxed beef is stored and shipped under proper refrigeration, a minimum of facing and trimming is required at the retail outlet. This saves considerably on the freight required for shipping sides of beef that include the portions that will eventually be trimmed away. Also, when the sides are broken at the packing house, their fresh trim has a higher dollar value to the packer than it might have to the retail outlet.

While I predict that the frozen route for retail meat cuts will eventually become the preferred way of marketing fresh meats, the boxed beef approach will be with us for a long time--perhaps forever, since some meat cutting will always be done locally. Because of the substantial economy in the boxed beef approach, I predict that significant improvements will come along in the next few years in this area, too.

With rapidly rising prices of all food products, particularly meat, the housewife is becoming more and more price-conscious. The past trend in the vacuum packaging of sliced sausage products has been to packages more attractive than the original pouch and automatic flexible packages, in which sliced sausage products were first introduced to the supermarket. The processed meat industry, as usual, followed the lead set by Oscar Meyer and the result has been, in my opinion, expensive over-packaging. I predict that, within the next five years, the bulk of sliced sausage products will be packaged in improved film packages, as opposed to the rigid and semi-rigid packages now in use. These improved film packages will provide for hanging on refrigerated racks, just the same as the expensive rigid packages are now displayed. I predict that this will result in savings in package costs of between 5 and 8 cents per pound for sliced sausage products.

The present types of frankfurter packages, however, are here to stay, at least insofar as their appearance is concerned. It will probably be another five years before a new, widely-accepted, frankfurter package appears. Even though it may be fabricated quite differently from the packages on the market today, it will look substantially the same--but probably closer in appearance to the current Oscar Meyer package than to the other types now in the marketplace. Once again, progress in this area seems to follow Oscar Meyer.
Dr. Walter Urbain, of Michigan State University, has conducted an extended program for the Atomic Energy Commission on irradiated refrigerated meats. His work has pretty well solved the problems of excessive weeping during storage, and virtual elimination of off-taste by irradiating the meat cuts in vacuum packages. Initially, Dr. Urbain performed the irradiation in Flex-Vac type pouches, which had to be removed at the retail level in order to restore the bloom of the meat. The meat then had to be repackaged in the store for display, in the conventional packages currently used. With the BIVAC package, however, the meat would be irradiated, shipped and sold in this original package. Its breathing characteristics are adequate to retain the original color of the meat, so that repackaging is unnecessary.

The radiation dosage used by Dr. Urbain is not for sterilization, but just to reduce the surface bacteria count to a low level. It is generally believed that the F.D.A. will eventually approve the sale of his irradiated meat. His packages have a refrigerated shelf-life of about 30 days. The one remaining problem is to develop an inexpensive non-returnable cartoning system which must protect the retail cuts from pressure from the cuts above them in the carton in order to avoid excessive juicing. Unfortunately, due to current economy moves, the A.E.C. has discontinued support of Dr. Urbain's program, so I predict that it will be five years before we see irradiated meat in the stores.

Poultry and whole hams will find greatly improved packaging within the next five years. A German firm has just come up with a flexible package for cooked hams, hoping to replace the pear-shaped cans. Another approach to flexible-packaged cooked hams is now under development in the United States, and should be in the marketplace in two or three years. New packaging for whole sausage sticks for delicatessen outlets is also in the works—all to increase shelf life and retain original quality.

Meat packaging and handling ten years from now will be very different from today, except with sliced sausage products, where changes will be minimal. Europe is where we were 25 years ago, and will catch up to us before the next 10 years are over. Let us hope that they will retain the plusses of a personal nature, such as their bakeries and old-fashioned butcher and delicatessen shops, and that we, too, will have more of them than we do now.

WAYNE BUSCH: Thank you, Mr. Young, for your very positive predictions and thought-provoking report. Our next speaker, Mrs. Eliene Taylor, is a Social Science Analyst with the USDA's Economical Research Service. She is currently responsible for developing research that will help consumers develop a better understanding of food marketing. Today Mrs. Taylor will discuss certain aspects of open code-dating on meat products. Mrs. Taylor.