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## EC247 Slaughtering Hogs and Cutting Pork on the Farm

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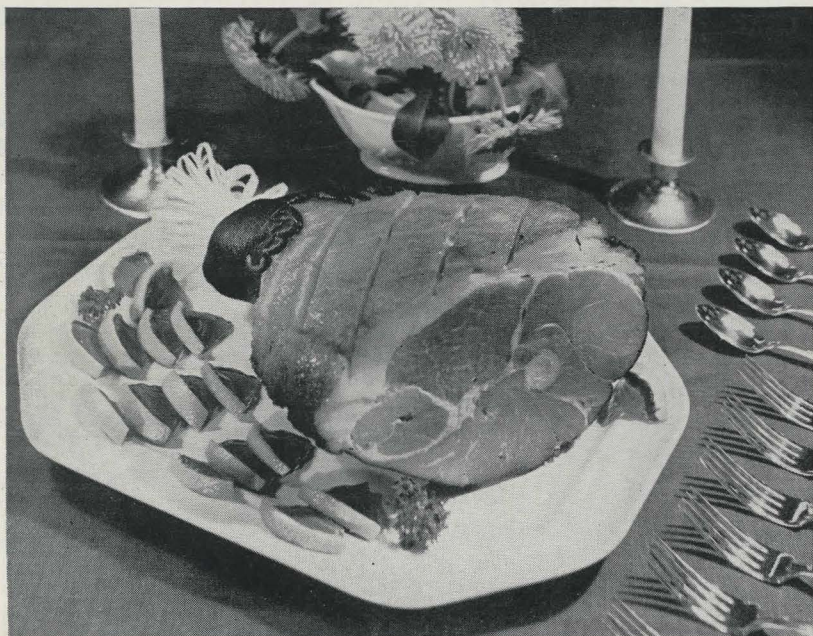
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# #59-2 Slaughtering Hogs and Cutting Pork on the Farm



EXTENSION SERVICE

UNIVERSITY OF NEBRASKA COLLEGE OF AGRICULTURE

AND U. S. DEPARTMENT OF AGRICULTURE

COOPERATING

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## Acknowledgments

This circular has been prepared for the use of farm families who slaughter and process their own pork. The methods suggested are followed in slaughtering and meat cutting demonstrations arranged by County Extension Agents, Home Demonstration Agents and livestock specialists of the Agricultural Extension Service. These recommendations are based upon the experiences of the writer in conducting many such demonstrations throughout Nebraska.

The writer acknowledges with thanks the helpful suggestions of Professor Charles H. Adams of the Animal Husbandry Department.

The illustrations used in this bulletin were made for the Morton Salt Company at the University of Nebraska and are used with their kind permission.

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# Slaughtering Hogs And Cutting Pork on the Farm

Meat is perishable. It may be broken down by bacteria molds and enzymes. Therefore meat must be handled cleanly. Slaughtering or cutting should not be done in muddy or dusty areas and the meat should not be handled with soiled hands or equipment. Unless refrigeration is available, do not slaughter except when temperatures get reasonably close to freezing at night. It is a good plan to slaughter in the afternoon so the carcass may chill overnight and be cut up the following day.

## Selecting the Animal

Only healthy animals should be slaughtered. Where there is a question regarding wholesomeness, secure the advice of a veterinarian.

Meat type hogs weighing 200-225 pounds are most acceptable for home slaughter. The cuts are lighter and leaner and better suited to the needs of the average family. Hogs of this weight are easier to handle, chill more quickly and the cuts may be cured more readily. Hogs should be kept off feed overnight before slaughter but should be given free access to water. Hogs handled in this manner are more easily dressed.

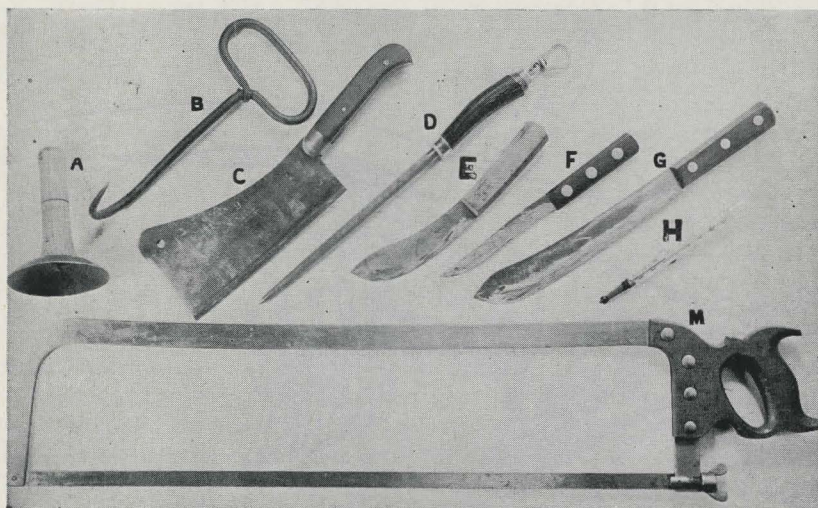


Fig. 1. Good tools make the job easier. A—candlestick or bell scraper, B—hook, C—cleaver, D—steel, E—skinning knife, F—boning knife, G—steak knife, H—dairy thermometer, M—saw.



### Little Equipment Needed

The equipment needed is relatively simple. It should be assembled and checked to see that it is ready for use (Fig. 1).

Several well-sharpened knives are most important. A whet stone and a steel to sharpen and smooth the cutting edges of the knives are desirable. A meat saw is useful although a wood saw may be used. A cleaver or a hand ax or hatchet is needed if chops are to be cut. The use of these instruments should be reduced to the minimum for bone splinters are very annoying.

If the hogs are to be scalded, a large kettle or several wash boilers for heating water are necessary. If live steam is available, the water may be heated by running a steam hose into a barrel or tank of water. To scald small hogs a barrel is adequate. Set the barrel on a slant at one end of a bench, the lower edge of the barrel being set into the ground and the barrel supported with sacks of sand or dirt (See Fig. 4). A third of a barrel of water is enough to scald a single small pig. A stock tank is excellent where a number of hogs are to be scalded. Where a hoist is to be used for scalding, the barrel may be set upright under a scaffold or a tree limb.

A dairy thermometer will take the guess work out of scalding. Candlestick or bell hog scrapers are good for removing the bristles, although a corn knife will do the job. Some means of hanging the hog should be provided. A timber about seven feet from the ground is adequate although a substantial tree limb may serve to good ad-

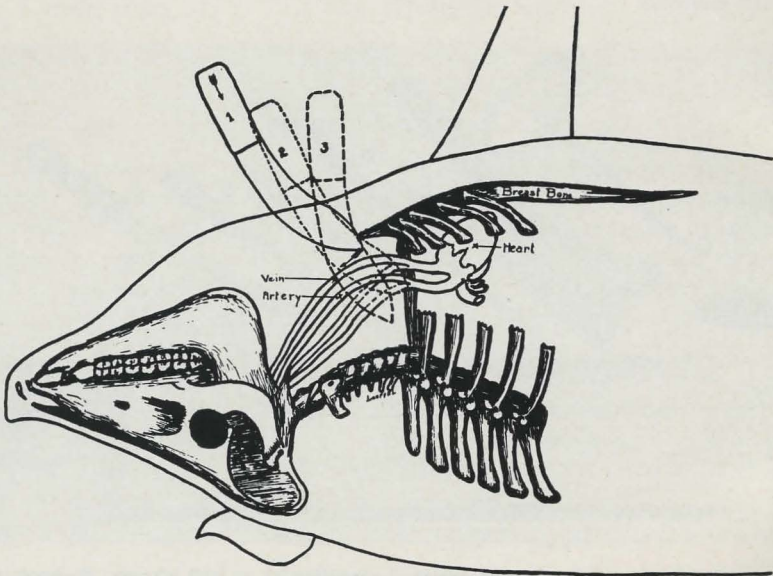


Fig. 2. The back of the knife crowds the underside of the breastbone. A downward cut splits the forking veins and arteries.



Fig. 3. With the pig squarely on his back, the incision is made just in front of the breastbone.

vantage. A chain hoist or wire stretcher will save much back work. A short cultivator singletree makes a very satisfactory gambrel.

### Slaughtering

Usually the pig is turned squarely on his back, the holder stands immediately back of the shoulders supporting the pig with the calves of his legs. The fore legs are grasped by the holder and forced backward. The sticker bears down on the hog's chin with his left hand. He makes a short incision in front of the breastbone squarely in the center. The back of the knife is permitted to slide under the breastbone, after which a cut downward is made (See Figs. 2 and 3). This severs the forking veins and arteries which lie immediately beneath the breastbone. After sticking, the pig should be turned so the head is down hill so that the blood drains out more rapidly. If desired, the pig may be suspended by a chain looped around one hind leg. Blood clots should be removed with cold water before scalding.

### Scalding

Hogs may be scalded at temperatures as low as 140°F. On the farm somewhat higher temperatures are needed, especially on a cold day or where a metal barrel is used. Where temperatures can be closely controlled, 146°F is usually very good. However, under field conditions, it may be necessary to begin scalding at temperatures as high as 150 or 155°F. Too high a temperature may "set" the hair while too low a temperature will not let the bristles "slip." Where a barrel is used for scalding, it is preferable to scald the head end first while the hind legs are still dry and furnish a good hand hold. The hog is plunged



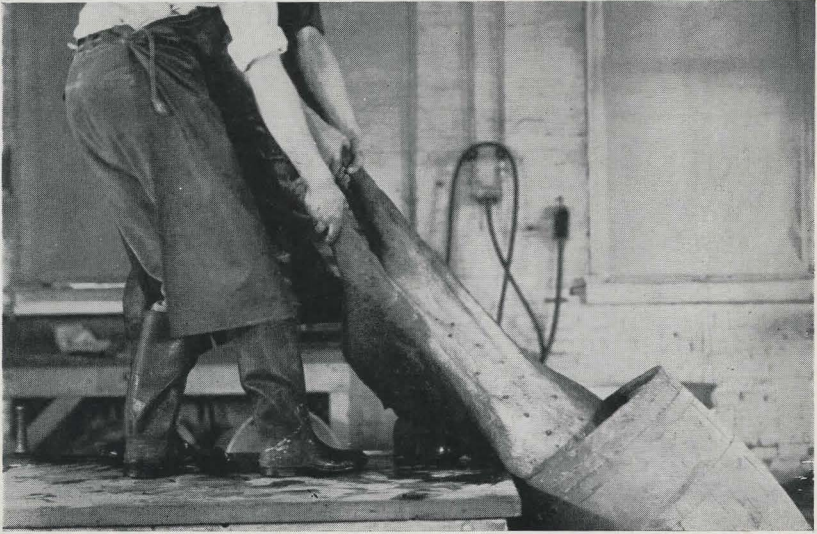


Fig. 4. The head end of the pig is scalded first while the hind legs are dry.

up and down in the barrel, turning it from side to side and permitting it to "air" from time to time. When the bristles on the front end "slip" easily, the hog is reversed and a bale hook placed in the lower jaw. With the addition of a little hot water, two hogs generally can be scalded with one batch of water, although there must be enough help to scrape and scald at the same time.

The addition of a little soap, lye, or wood ashes to the water facilitates scalding. Only enough should be added to soften or "break" the water. Too much will turn the skin brown. Hogs scald best in

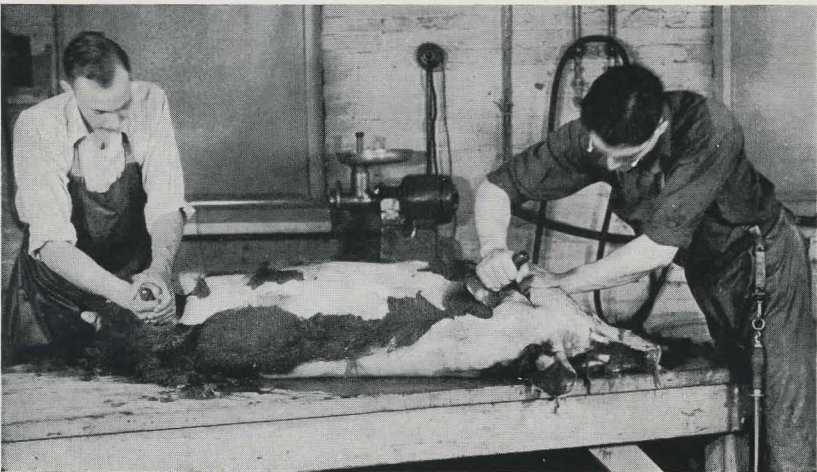


Fig. 5. Bell scrapers are convenient for scraping.





Fig. 6. The gambreling incision is made squarely in the center of the back leg beginning between the dewclaws.

cold weather. Scalding is usually difficult in the early fall and after the last frost. Mangy pigs are difficult to scald.

Immediately after scalding begin scraping (Fig. 5). Scrape with the grain of the hair. Since the head and the legs cool rapidly, do these parts first. A dash of hot water from time to time facilitates the scraping process. After the hog has been "roughed out" he may be wet down and the scraper placed against the skin in a flat position and moved in a rotary manner. The suction created removes most of the dirt from the skin. A pail of water and a scrub brush will clean the rest after which the hog is shaved with a sharp knife. The gambrels are cut on the hind legs by splitting upwards from the dew-claws. This will expose the tendons, which can be fastened in the hooks of the singletree for hanging (Fig. 6). The carcass should be hung up and washed with warm and then cold water.

Some prefer to skin hogs, eliminating the need for scalding equipment. Skinning is a tedious job for a beginner. Skinned hogs are not as attractive as scalded ones. They become soiled more readily and it is questionable whether skinned cuts keep as well.

### Dressing

A common method of removing the head is to cut around the neck in front of the shoulders and twist the head until it becomes unjointed. A preferred method is to unjoint the first joint (puzzle bone) (See Fig. 7). A cut is then made around the jawbone, cutting nearly to the eyes and then down to the chin. This leaves the jowls on the carcass to chill.

To prepare the head, remove the tongue. Trim out the eyeballs

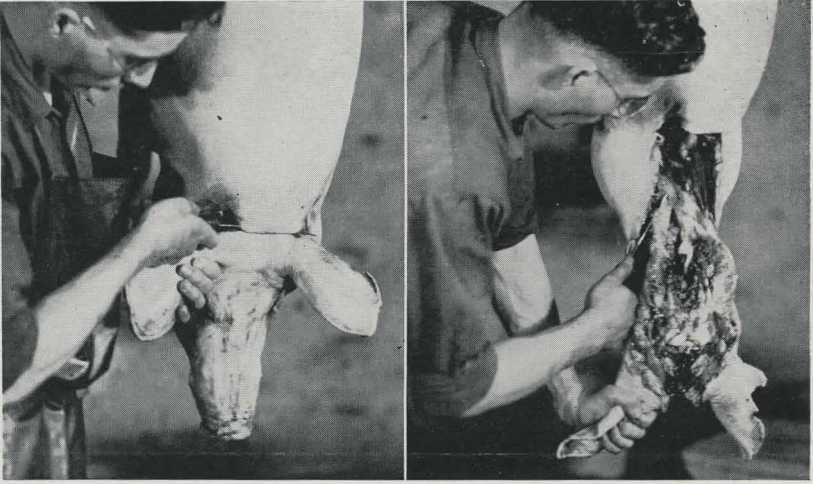


Fig. 7. The head is unjointed at the first joint back of the ears, then rolled out leaving the jowls on the carcass.

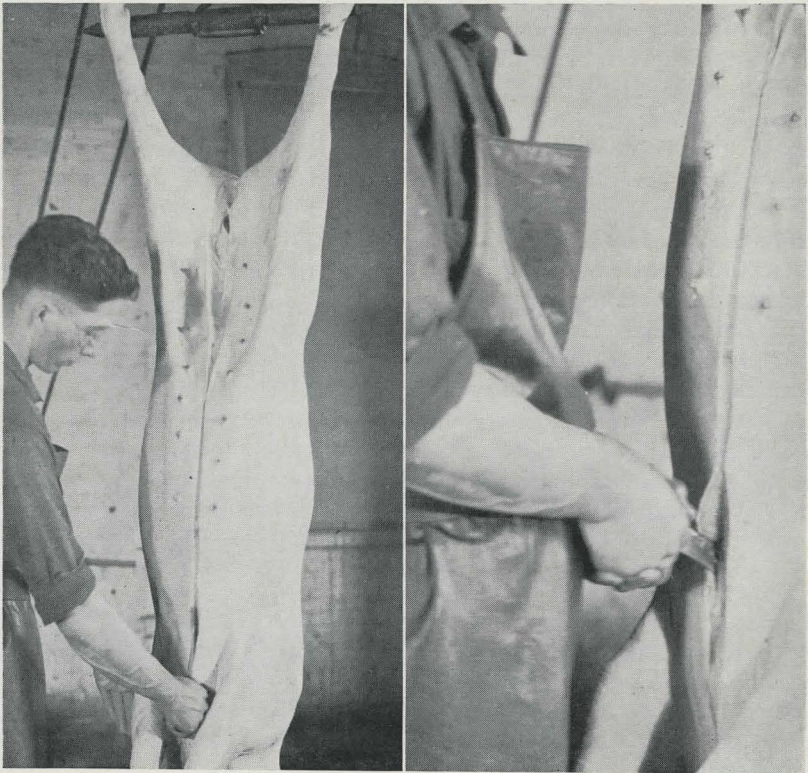


Fig. 8. The belly wall is scored down the center.

Fig. 9. The knife is inserted in the sticking cut, cutting edge up. Using it as a pry, the breastbone is split.



with a narrow bladed knife. Split the ears and remove the cores. Peel the lower lip from the jawbone and insert knife on each side of the jawbone. If properly loosened, the jawbone may be pulled down, unjointed and discarded. The snout may be loosened and pounded back with the back of the cleaver. Set the head on its base, make a saw cut to remove the nasal sinuses and teeth. Split the skull and remove the brains. After washing and shaving, the head may be boned out for sausage and lard or may be cooked for head cheese and liver sausage.

Score the pig down the midline from between the hams up to the chin (Fig. 8). Insert the knife in the sticking cut with the cutting edge up (See Fig. 9). If the knife handle is grasped firmly in both hands, the breastbone may be split by prying upward. The breastbone gets thinner toward the upper end so caution must be exercised to prevent the knife slipping through and perforating the stomach and intestines.



Fig. 10. The clenched fist crowds the intestines away from the cutting edge in ripping the belly wall.

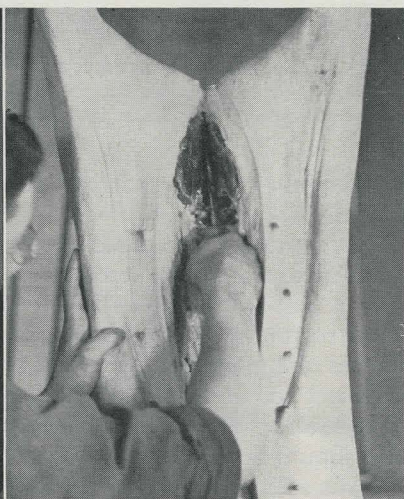


Fig. 11. The hams are split to the pelvic or aitchbone.

With a barrow, the pizzle and sheath are dissected free, but left attached at the base. A short incision is made in the belly wall just below the aitchbone. Grasp the knife in the right hand as near the blade as possible (Fig. 10). Place the fist inside the body cavity with the blade out. Bearing down on the knife will cut through the belly wall. The knuckles crowd the intestines safely away from the cutting edge of the knife.

The hams are divided in the center seam to the pelvic or aitchbone (Fig. 11). If the division has been made accurately in the center, the



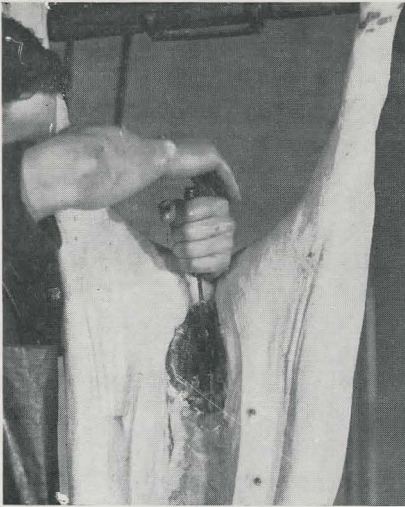


Fig. 12. If the hog is too mature, the aitchbone may be split in the center seam by tapping the knife handle.

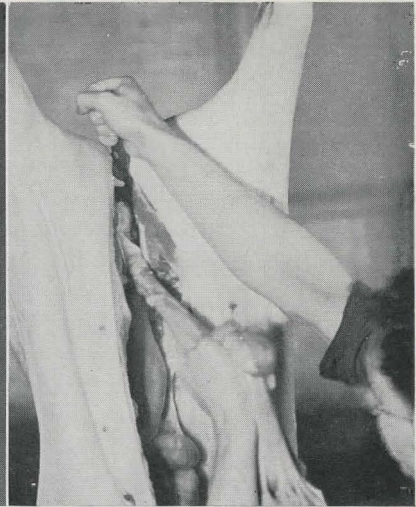


Fig. 13. With tension kept on the pizzle or the uterus, the rectum is cut free.

aitchbone may be split with a knife (See Fig. 12). Otherwise a saw may be used.

The rectum is stretched forward by pulling on the pizzle in the case of a barrow or the uterus and ovaries in the case of a gilt (Fig. 13). Force a narrow-bladed knife around the rectum, cutting it free. Tie off the rectum to prevent soiling the carcass. As the viscera are drawn forward and downward, cut the attachments. Special care should be taken not to cut the small intestine which crosses the large intestine at the level of the kidneys. The kidneys and the leaf fat which covers them should be left in the carcass.

Take a firm hold of the viscera with the left hand and support the intestines with the left forearm. The liver will be found on the right side attached by a blood vessel near the top. Cutting this vessel will free the liver. The stomach is on the left side. The hand may be run behind the stomach to loosen it. Pulling downward on the viscera (Fig. 14) will expose the gullet which passes through the red muscular part of the diaphragm. The beginner should cut through the gullet and place the viscera on a clean table. An experienced operator may remove the viscera from both the chest and body cavities at the same time.

The diaphragm is a sheet of white tissue which separates the body from the chest cavity. Through the center of the diaphragm and also around the outer border will be found muscular red portions. Cut the diaphragm through "where the white joins the red," leaving the muscular portions in the carcass. The central fleshy part is known as



Fig. 14. After freeing the rectum, the viscera are cleared by pulling forward and cutting across the gullet.

the "hanging tender." When this is raised up, a large blood vessel is disclosed. Cut this vessel and pull it downward, together with the heart, lungs, windpipe and gullet.

### Work Up Viscera Promptly

The viscera should be worked up before they have a chance to chill. Cut the heart off, wash and chill it. Cut the liver free, trim off the gall bladder, wash and chill the liver. The lungs should be discarded. The long flat red organ or spleen is generally discarded although some use it for food.

Over the viscera and attached to the outer border of the stomach is a thin layer of fat known as the caul, web, or apron. It may be cut free, plunged in cold water and used for lard if not soiled. The fat surrounding the small intestines is known as the ruffle fat. It is generally not used for edible purposes. If the small intestines are to be used for casings, great care should be exercised to keep them clean. Carefully tie off where the small intestine leaves the stomach. Take the sheet of fat known as the ruffle or mesentery between the left thumb and fingers. Take the intestine in the right hand and tear from the fat into a clean pail or tub.

The casings should be spread out on a table. Starting at one end strip out the contents using the thumb and forefinger. Several strip-pings may be necessary. For the beginner, it is a good plan to cut the small intestines into ten- or twelve-foot lengths. Three people are needed to turn the casings inside out. The first reverses one end of



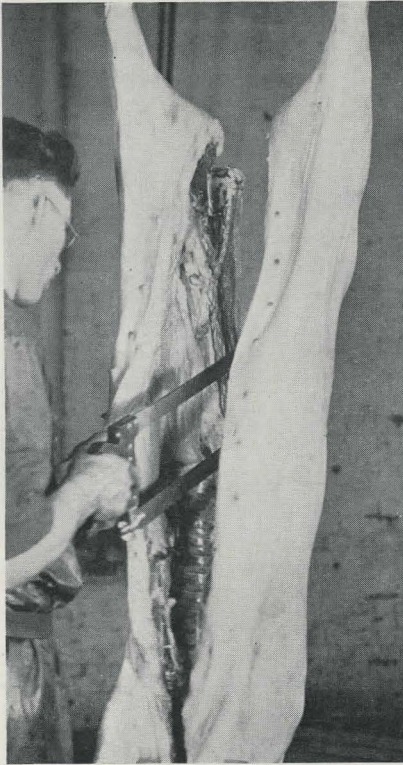


Fig. 15. Center splitting hastens chilling.



Fig. 16. The leaf lard is easily loosened with the clenched fist while the hog is warm.

the intestine, turning it back like the cuff on a pair of trousers. The second pours tepid water into the cuff. The weight of the water turns the casings inside out as the third person feeds in the casing from above. The reversed casing can be collected in a clean tub.

Casings are "slimed" by stripping the casing against a notched stick. Several slimings may be necessary after which the casings may be rubbed with dry salt and stored in a cool place.

### Prompt Chilling Essential

Prompt and thorough chilling of the carcass and offal is imperative if a high quality product is desired. To hasten chilling, center splitting of the carcass is recommended (Fig. 15). A meat saw is best for this job although a wood say may be used. It is a good plan to leave twelve to fifteen inches of skin over the shoulder to hold the two sides together.

The leaf lard which lines the abdominal cavity may be removed with the clenched fist (See Fig. 16). If a suitable place is available to





Fig. 17. Facing the ham while the carcass is warm is easier and hastens both chilling and curing.

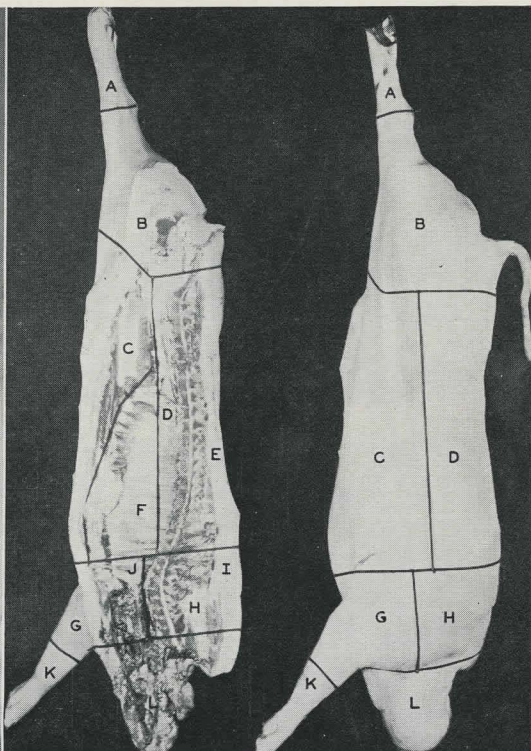


Fig. 18. The pork cuts. A—hind foot, B—ham, C—belly, D—loin, E—fat back, F—sparerib, G—picnic shoulder, H—shoulder butt, I—clear plate, J—neck bone, K—front foot, L—jowl.

chill the leaf, it may be removed together with the kidneys. If no suitable place is at hand, the leaf and kidney may be left hanging in the carcass by the upper attachment.

It is recommended that the hams be faced before the carcass is chilled (Fig. 17). A smoother job can be done while the carcass is warm and chilling is facilitated. The facing may be left on the ham to chill.

The carcass should be allowed to chill at least twenty-four hours at a temperature near the freezing point, yet actual freezing should be avoided. During chilling, the carcass should be protected from dust, cats, dogs and rodents.

### Pork Cutting

There are many different methods of cutting pork and the method most nearly meeting the family's requirements should be followed. The following method is a modification of the commercial method and



Fig. 19—After the picnic shoulder is smoothed and rounded up, the shank is cut off.

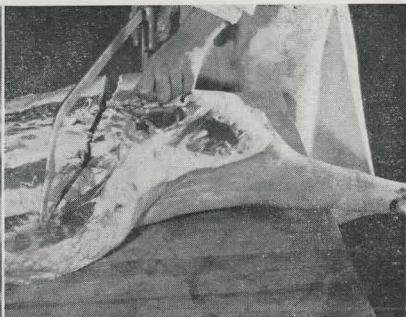


Fig. 20—The ham is cut off one and one-half inches in front of the aitchbone and at right angles to the shank.

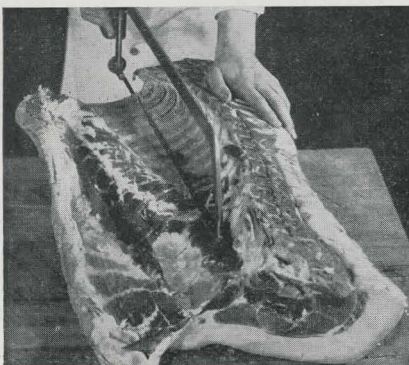


Fig. 21—The loin is separated from the belly, starting where the ribs join the backbone in front and cutting to the bottom of the tenderloin muscle in the rear.

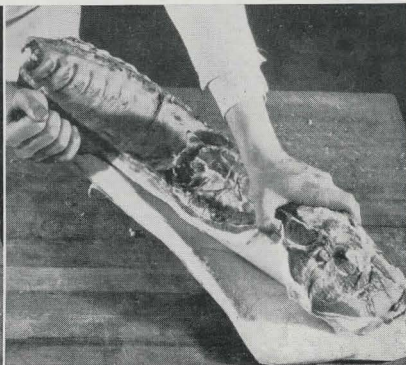


Fig. 22. The loin is separated from the "fat back," the covering layer of fat and skin.

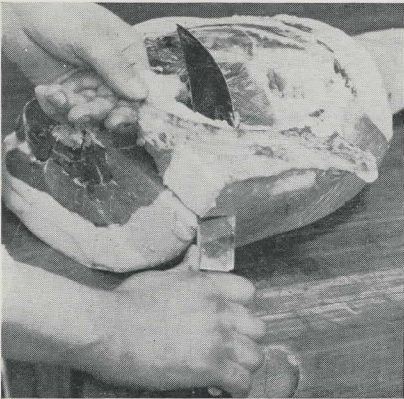
is designed to produce the maximum amount of primal cuts and the minimum amount of sausage and lard. Should additional amounts of the latter products be desired, it is a simple matter to trim the cuts more closely. The four primal cuts are ham, shoulder, bacon and loin (See Fig. 18).

Place the half carcass on the table skin side down. Cut the ham off one and one-half inches in front of the pelvic or aitchbone at right angles to the shank (Fig. 20). Cut the shoulder off three ribs wide at right angles to the back (Fig 25). Divide the middle section lengthwise starting where the ribs join the backbone at the front and aiming at the bottom of the tenderloin muscle at the rear (See Fig. 21).

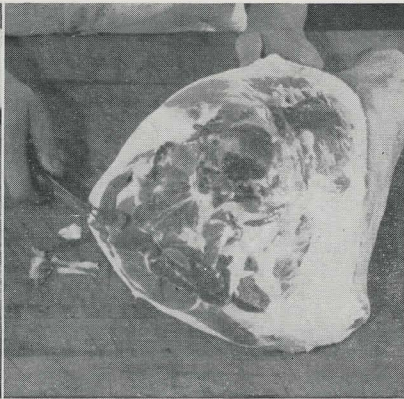
### The Ham

Place the ham on the table skin side down (Figs. 23 and 24). Place the knife under the tailbone and keep it as nearly flat as pos-

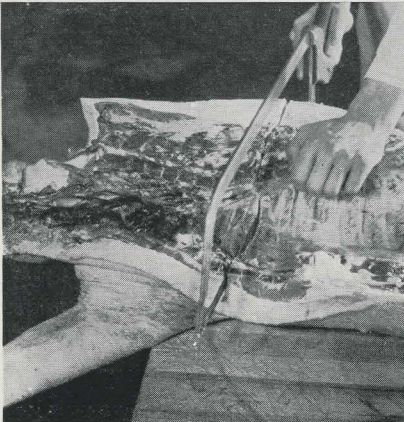




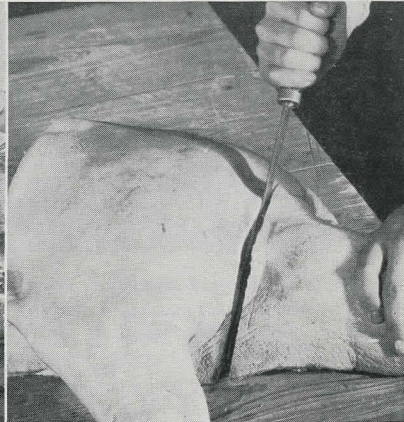
**Fig. 23.** The knife is held flat in removing the tail bone from the ham.



**Fig. 24.** The ham is smoothed up and rounded and the shank cut off at the hock.



**Fig. 25.** The shoulder is taken off three ribs wide and at right angles to the back.



**Fig. 26.** The jowl is cut off in the neck wrinkle, parallel to the cut at the rear of the shoulder.

sible while the bone is removed. Using the facing as a hand hold, trim off the top of the ham. Trim the flank portion of the ham on an outward angle making the ham as broad as possible. Nearly all hams are skinned today, by which is meant that the upper two-thirds of the fat covering is removed leaving a "collar" of skin around the shank end. About one-fourth inch of fat is left to protect the lean.

### **The Shoulder**

Cut the jowl or cheek from the shoulder by making a straight-line cut in the wrinkle of the neck parallel to the rear cut of the shoulder (Fig. 26). Trim out some of the glandular cheek meat and square up





Fig. 27. The jowl may be flattened and trimmed as a bacon square.

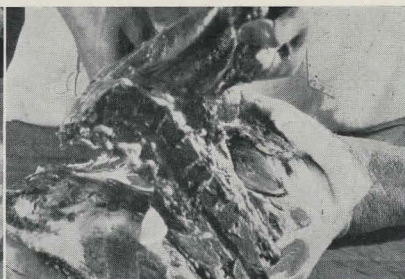


Fig. 28. The neck bone is removed from the shoulder.

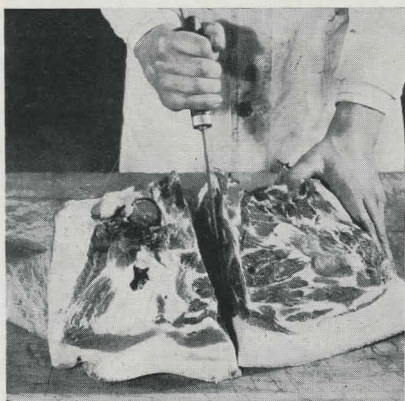


Fig. 29. The long-cut shoulder is frequently divided to make a picnic shoulder (left) and shoulder butt (right).

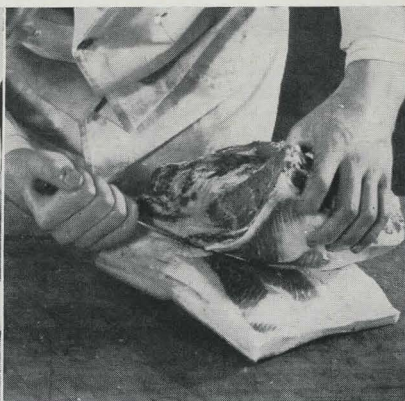


Fig. 30. The shoulder butt is separated from the covering fat and skin which is known as the clear plate.

the jowl. It may be cured for a seasoning piece or used for sausage and lard (Fig. 27).

Remove the neck vertebrae, the breastbone and the first three ribs from the under side of the shoulder (Fig. 28). Cut the shoulder in two at the smallest part of the blade bone or approximately where the vertebrae were located. Skin the top part of the shoulder, leaving about one-fourth inch of fat on the outer portion. This is known as a shoulder or Boston butt and may be used fresh as steaks or roasts. Round up the lower portion of the shoulder, trim off some of the fat and saw off the shank (Fig. 19). This cut is designated a picnic shoulder and may be used either fresh or cured.

### The Loin

The loin is covered with a layer of fat and skin known as a fat back. Place loin skin side down and set the knife at such an angle that approximately one-fourth inch of fat is left on the loin (Fig. 22).

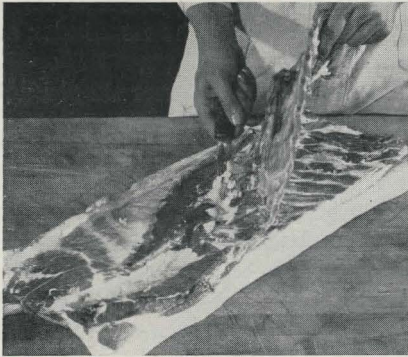


Fig. 31. After flattening the belly, the spareribs are removed.



Fig. 32. The bacon is trimmed to an attractive shape.

Draw the knife lengthwise of the loin. Reverse the loin and repeat the process. The loin is used primarily as a fresh cut as chops and roasts.

### The Bacon

Place the bacon skin side up and smooth out with the heel of the hand. It may be flattened out with the broad side of a cleaver or ax to loosen the spareribs. Turn the bacon over and insert the knife under the breastbone to loosen it. Insert the knife at the top of the ribs beginning at the front. The cut is made upward and outward leaving the cartilaginous buttons in the bacon. After removing the spareribs, the bacon is flattened and squared (Figs. 31 and 32).

### Sausage

The trimmings should be sorted over as quickly as possible, removing bones, skin, gristle and blood clots. Good sausage should contain twenty-five per cent fat. Too little fat makes for dry sausage. Trimmings and spices should be carefully weighed or measured in order to produce a uniform product or to improve future batches.

Tastes differ as to the amount and kind of spices to use in seasoning sausage. As a general rule it is a good plan to make the sausage mild in seasoning since it is possible to add more spice if more is desired but impossible to take it out. A mild sausage may be made up by using two per cent salt or one-half pound for twenty-five pounds of trimmings. One-tenth as much white pepper as salt is recommended. For twenty-five pounds of trimmings a scant ounce of white pepper is suggested. If sage is desired, the same amount as of pepper is recommended. Reduced to domestic measures, this formula would be:

- 10 pounds sausage trimmings
- 6 level tablespoons salt
- 4 level teaspoons sage
- 4 level teaspoons white pepper



Reduce the trimmings to a uniform size. Spread one-half on a table and scatter the spices evenly over them. Add the remainder of the trimmings and mix the entire mass for grinding.

Sausage is perishable and even when stored in a freezer should not be kept longer than three months.

Sausage may be stuffed in natural casings, cellulose, or muslin bags. It may be used fresh or smoked. Smoking imparts a flavor which many like. It tends to dry out the sausage, which increases the effectiveness of the salt and spices. Special care must be exercised to prevent over-smoking sausage.

### Lard

Lard stock is perishable and breaks down rapidly even under good refrigeration. The keeping quality of the lard and the satisfaction it gives in the kitchen depends largely on the promptness and thoroughness with which it is rendered.

If a good scald was obtained, the lard stock need not be skinned. The conventional method is to cut the lard into uniformly thin slices. If the lard stock is to be skinned, it may be cut into strips three-quarters of an inch wide. These are laid on a table skin side down. A knife is inserted just above the skin with the blade held flat. The strip is pulled against the cutting edge removing the rind. The advantage of skinning lard stock is that it may then be ground. Ground lard stock renders better and faster and requires less fuel.

Frequently, a little water is used to start the rendering process. However, if only a little lard stock is added at a time and this is stirred constantly, no water need be used.

During rendering, the lard should be stirred frequently to prevent it from sticking. The fire should be kept under control. Too hot a fire may cause scorching or cause it to boil over, resulting in a serious fire. The rendering should be continued until the lard reaches a temperature of 250°F as measured by a deep-fat-frying or candy-making thermometer. At this point the cracklings will turn a golden brown. When exposed to the air, they fry themselves dry in a few moments. Practically all of the water will have been driven off.

At 250°F, the lard should be removed from the fire or the fire should be drawn. Lard at this temperature can cause severe burns, so it should be handled with caution. Straining through muslin will remove the fine cracklings. A sausage stuffer or jelly press may be used to press the cracklings. If nothing else is at hand, a colander and potato masher may be used.

Lard is best stored in air-tight light-proof containers and should be kept in as cool a place as possible. Warm temperatures, exposure to air, and light hasten the development of rancidity. The development of rancidity in lard may be retarded by adding an anti-oxident which may be procured from some drug stores and mail order houses.

## Meat Curing

Meat curing is based upon the drying action of salt and also its effect in inhibiting the growth of many types of destructive bacteria. Salt has one objectionable quality in curing; it coagulates or hardens certain meat proteins. It was found that sugar could be used to neutralize this hardening effect. Consequently, our best cures today are combinations of salt and sugar and are known as sugar cures or sweet pickles. In these, usually one part of sugar by weight is combined with four parts of salt. Cane or beet sugar may be used, either brown or granulated. Corn syrup has met with much favor in commercial curing.

Where only salt and sugar are used to cure meat, the meat becomes unattractive in color. To remedy this situation saltpeter is generally used to retain the red color of the meat. Like salt, it has some curing action and hastens the penetration of cure into the meat. It fosters the growth of certain desirable types of bacteria and improves meat flavor. Only a small amount of saltpeter or nitrate is used in the curing formula, usually one-sixteenth as much as sugar. A popular cure is an 8-2-2 formula which means that for 100 pounds of meat, 8 pounds of salt, 2 pounds of sugar and 2 OUNCES of saltpeter are used.

The curing agents may be applied to the meat dry or they may be dissolved in water and the meat immersed in the resultant brine or pickle. The dry cure is a little more rapid and has the advantage of not requiring a watertight container. The mixture is simply rubbed on the meat, especially on the flesh side of the cuts. For the pickle cure, the 8-2-2 formula is dissolved in four and one-half gallons of water. It is a good plan to sterilize this by boiling. The brine is then skimmed and cooled. Four and one-half gallons of pickle will cover 100 pounds of average cuts in an average container. For the pickle cure, sterile containers should be used. Clean wooden barrels are satisfactory if they have been steamed or scalded. Large stone jars have the advantage of being more easily cleaned.

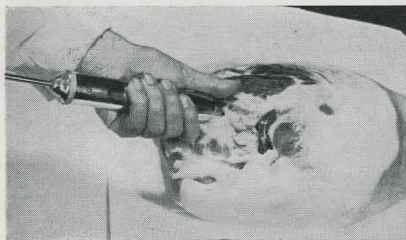


Fig. 33. Pumping hastens the cure and reduces the hazard of spoilage.

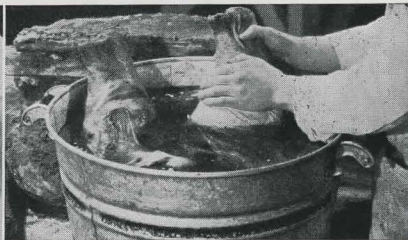


Fig. 34. After curing the cuts should be soaked in several changes of water to remove excess surface salt.



### **The Brine Cure**

Rub cuts to be brined with dry salt and pack in a container in such a way as to retain their shape. In the curing process the cuts tend to "set up" so that if they are carelessly packed they become unattractive in appearance. After standing overnight, pour off the bloody liquid which accumulates. Place a slatted rack on the meat and weight it down with a clean stone. Pour cool brine on the meat. For meat curing the brine should be strong enough to float a fresh egg. As the curing proceeds, the brine becomes weaker due to the water withdrawn from the tissues.

### **Curing Temperature**

The ideal temperature for curing is 36 to 40°F. The higher the temperature, the more rapidly curing takes place. However, there is more hazard of spoilage. It may take several weeks to get enough cure into the center of a large ham to preserve it. Until those agents get there in sufficient amounts there is always a danger of spoilage. Many people have the idea that as soon as meat is immersed in brine all danger of spoilage is over. Such meat must be looked upon as being highly perishable.

### **Overhauling**

To promote uniformity of cure, cuts should be shifted at weekly intervals for three weeks.

### **Curing Time**

The time required for curing depends upon the size and shape of the cuts and their fatness. Small cuts with considerable exposed surface cure more rapidly than large ones. Fat cuts cure more slowly than



**Fig. 35. Cuts rubbed with dry cure.**

lean ones. It is suggested that hams be cured three and one-half days per pound weight of piece in the pickle; picnics, three days; bacons, two and one-half days.

Whenever temperatures reach freezing or below, little penetration of cure takes place and such days should not be counted. Under farm conditions, meat should not be frozen before curing. While this is done commercially where special equipment is available, it is hazardous under farm conditions.

If the above curing schedule is followed, a well-cured product capable of being kept without refrigeration should result. Such products are more salty than commercially-cured meats. Some consumers dislike country-cured meats for this reason. If a mild-cured product is desired, the curing time may be reduced, but such mild-cured products must be kept under refrigeration.

Remove pieces from the cure on schedule. Many make the mistake of leaving all the cuts in the cure until the heaviest ones are cured. Under such a program, light cuts are overcured.

### **The Dry Cure**

With the dry cure, the mixture is thoroughly rubbed on the cuts which are then placed in a clean barrel or box or on a table or bench where a temperature of 36 to 40°F can be maintained (Fig. 35). Meat absorbs taints and odors readily, hence the curing place should be free from them. Within a few hours, the curing mixture will have drawn a considerable quantity of fluid from the meat. With tight containers this may be permitted to accumulate. After four or five days, the meat should be overhauled; that is, rubbed again and rearranged. In a week this should be repeated.

### **Curing Time**

The curing time with the dry cure is shorter than with the brine cure. Hams should be cured two and one-half to three days to the pound; picnics, two and one-half days; bacons, two days.

### **Emergency Curing Measures**

Sometimes a spell of warm weather during the curing process makes it necessary to resort to unusual measures to prevent the loss of meat. One of the most common ones is to "pump" the meat or inject brine into the center of the cut (Fig. 33). This hastens the curing process, reducing the schedule about one-third. It produces a more uniform cure and reduces the shrinkage. A common method used is "stitch" pumping, whereby the brine is injected along the bones. For pumping, dissolve two pounds of salt, one-half pound of sugar, and one-half ounce of saltpeter in a gallon of water. Clean the syringe thoroughly before and after using.

Another method of pumping hams is "artery" pumping. The needle is inserted into the main artery of the ham. This hastens the curing



process even more rapidly than stitch pumping since the brine is forced through the entire capillary system. This is the method employed by packers in making the mild or quick-cured hams which are so popular today. In pumping, approximately one-tenth of the weight of the cut is injected. With a fifteen-pound ham, one and one-half pounds of brine should be injected.

### Soaking

Whatever method of curing is used, it is necessary to overcure the outside of the cuts in order to adequately cure the center. Therefore, after curing is completed, soak cuts in tepid running water or in several changes of water for an hour or two (Fig. 34). After soaking, scrub the cuts with a stiff brush to remove crusted salt or shreds of fat or lean. The cuts are then ready to be strung and hung up to dry.

### Smoking

Smoking imparts a desirable flavor to meat and has some preservative action. Hang so that no two pieces touch. A piece of wire netting stretched under the meat will prevent a cut of meat falling into the fire if a string should break or tear out.

Use only non-resinous woods such as hickory, apple, maple or ash for smoking. Resinous woods burn with a sooty flame which is objectionable. For the same reason, the minimum amount of kindling should be used. Clean corn cobs are sometimes used.

A smoke house may be improvised by building a firebox in a bank and carrying the smoke through a tile or piece of down-spouting into a barrel. Suspend the meat on sticks placed across the top of the barrel and invert a washtub over the top. Smoke the meat to the desired degree, usually a good chestnut color. Thin cuts like bacons absorb smoke very readily so care should be taken not to oversmoke them.

### Smoking Preparations

There are various preparations on the market which may be used by those who have only small quantities of meat or who do not have suitable fuel or facilities for smoking. Some of these products consist of wood smoke condensed to a liquid form which may be brushed on the cured meat. With others, the wood smoke is condensed on salt. The smoke-treated salt may be combined with other curing ingredients and applied to the cuts like any dry-curing formula. Federal regulations do not permit the use of these preparations for commercial curing or for meat shipped interstate. However, for farm curing, they offer a simple and satisfactory solution to the smoking problem.

### Aging

The freshly-cured ham or shoulder is frequently disappointing, for the outer portions are likely to be overcured and the center sections flat or undercured. Where cured cuts are hung for a time, the salt

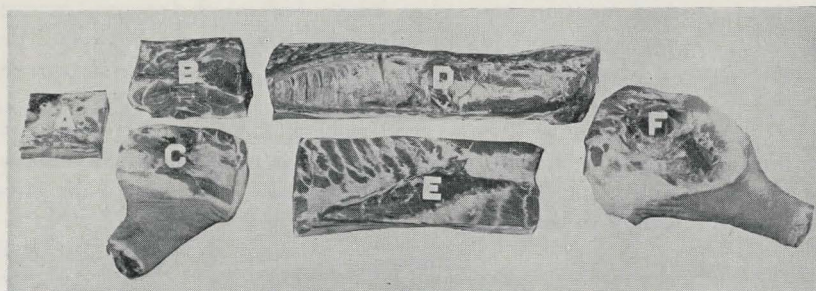


Fig. 36. The trimmed pork cuts: A—bacon square, B—shoulder butt, C—picnic shoulder, D—loin, E—belly, F—ham.

tends to equalize; that is, the excess travels to the center. Hams and shoulders are much improved by aging.

### Freezer Storage

There are commercial freezer lockers in many Nebraska communities. In addition, many farm families now have freezer cabinets. These provide excellent storage facilities. Frozen foods are more palatable and may be prepared in a wider variety of ways than those preserved by canning.

The meat should be cut ready for the pan for little cutting is possible after meat is frozen.

For detailed suggestions on freezing meat the United States Department of Agriculture Home and Garden Bulletin No. 15 (Freezing Meat and Poultry Products) is recommended. It may be procured from your County or Home Demonstration Agent or by writing to the Extension Service at Lincoln.

Boning the cuts saves much valuable locker space. The removal of part or all of the bones reduces the hazard of perforating the wrappings.

Meat must be wrapped in moisture, vapor proof wrappings to prevent "freezer burn" or dehydration during freezer storage. There are a number of very satisfactory wrapping materials on the market. The size of the package should be governed by the size of the family. Where several cuts of meat are packaged together, they should be interleaved; that is, pieces of freezer paper placed between the cuts so that they may be separated when frozen. The packages should be compact so that no space is wasted.

A "drug store" wrap is recommended. Place the meat squarely on the wrapping and pull the wrapping tight to drive out as much air as possible. Fold the front and back edges of the wrapping several times to make an air tight seam. Fold in the two ends of the package. The package may be tied although special locker tape is preferable. Label, number, date and freeze the packages as quickly as possible.



Package ground meat in cartons or bags. For quick freezing spread out the packages as much as possible and place racks between the layers of meat. Freezing should be at subzero temperatures and storage at 0° F.

Frozen pork does not keep as well as beef or lamb. It is generally recommended that it should be used within six months. An inventory of the frozen cuts may be placed in the kitchen cabinet and the cuts checked off as they are used.

### **Canning<sup>3</sup>**

This has been a popular way of preserving meat in the past, but today has been largely superseded by freezing. Canning requires more labor, the meat is less palatable and cannot be prepared in as wide a variety of ways. However, where facilities for freezing are not available, canning, when properly done, is an acceptable substitute for freezing.

### **Edible Byproducts**

#### **Head Cheese**

Cook carefully cleaned heads, feet and bony trimmings until the meat separates from the bones. Pick out all bones and gristle. Weigh and spice. Add two per cent salt and one-tenth as much white pepper as salt. Add ground cloves, cinnamon and allspice to taste. If vinegar is desired some may be added in which case the product is designated as souse.

After spicing, place the meat in bread pans or other suitable molds and fill the pans with the gelatinous broth in which the meat was cooked. After stirring, chill the pans as quickly as possible. Meat of this sort retains heat for a long time and will sour in short order unless this is done.

#### **Liver Sausage**

To make liver sausage, combine some of the head cheese stock with cooked livers. The livers should not be cooked more than twenty minutes or they will become crumbly. The cooked livers should not constitute more than one-fourth of the material by weight. It is seasoned like head cheese except that cloves predominate. Some like to add onions. Grind the mixture several times adding some of the stock or soup in the process. Run the material into pans to chill if loaves are desired. It may also be cased in beef casings. This sausage may be used fresh or it may be smoked to make Braunschweiger type of liver sausage.

#### **Scrapple**

The broth which remains from making the liver sausage and head cheese may be used to make scrapple. Skim off the fat. Some people

<sup>3</sup> For detailed information on canning meat the U. S. Department of Agriculture Home and Garden Bulletin No. 6 (Home Canning of Meat) is recommended. It may be procured from your County Home Demonstration Agent or by writing to the Extension Service at Lincoln.

add additional chopped meat. Add corn meal and cook the mixture as for corn meal mush. Some add a little rye flour to hold it together. Cook the scrapple until it is done, then turn it out into pans to cool. Slice it and fry like corn meal mush.

### **Retail Cutting**

The cutting should be designed to meet the family requirements. Some one has said that there are three fundamentals of good meat cutting—cut thick meat from thin meat, cut tender meat from the less tender and always cut across the grain.

#### **The Ham**

The ham is divided into three sections, the top or butt, the center section and the hock. The butt is usually cut along the floor of the aitchbone. The fresh ham butt may be used as a roast and the cured ham butt for baking. This method of cutting produces a large percentage of center slices, which may be used for frying or the ham may be used in one section for a roasting or baking piece. The hock portion is somewhat lacking in tenderness, hence it may be simmered or used as a seasoning piece with vegetables. It may be boned and ground for sausage if fresh, or for ham loaves if cured.

#### **The Picnic Shoulder**

The picnic shoulder, either fresh or cured, may be roasted or baked. The upper portion may be sliced for pork steak while the shank end may be used as a seasoning piece or boned and used for sausage.

#### **The Shoulder Butt**

The shoulder butt may be used as a fresh roast or sliced for pork steak. It may also be cured although where this is done, the blade bone is usually removed, making a boneless butt.

#### **The Loin**

This cut is generally used fresh for roasts and chops. Both front and back ends of the loin are usually cut off for roasts. These portions contain bones which make slicing difficult without a saw. The center section is highly esteemed for chops. The chops are cut one to a rib, then one between the ribs, making them uniform in thickness. In the rear part of the loin where there are no ribs there are broad fingerlike projections of the backbone which need to be split. The loin is sometimes boned out, cured and smoked for Canadian style bacon.

### **Trichinosis**

Hogs are sometimes infected with a parasite (*Trichinella spiralis*), which also affects man, rats and other animals. This parasite is found in pigs fed uncooked garbage, but is seldom found in hogs raised under sanitary conditions. Since trichinosis in man is a serious, often fatal disease, one cannot take chances with it. For this reason most states



require that garbage be cooked before feeding to hogs. Trichinosis may be avoided if all pork is thoroughly cooked. It should be remembered that curing the meat does not destroy the trichinella it may contain. Prolonged exposure to sub-zero temperatures is effective in destroying this parasite.

The flesh of pork carcasses may be examined by competent pathologists. However, not finding the parasite is not positive assurance that it may not be present in other parts of the body. One of the common means of contracting trichinosis is by eating summer sausage which has been made from cured meat which has not been cooked. However, summer sausage manufactured under U. S. meat inspection and bearing the U. S. Inspected and Passed stamp may be eaten without cooking for precautions are taken to safeguard it so far as trichinella are concerned.

## Rules for Safety

Slaughtering and meat cutting involves the use of sharp edged tools, lifting heavy weights and working with animals which are heavier and stronger than men. There are abundant opportunities for accidents, and with the thought of reducing these hazards the following suggestions are set forth. Most of them are from the National Live Stock and Meat Board.

1. Check all hoisting equipment and supports carefully to be sure that they are adequate to support the loads contemplated.

2. Scalding water is a real hazard and every precaution should be taken with it. Hot lard is capable of inflicting very severe burns.

3. Keep knife handles free from grease. A dry handle will assure a good grip and help to keep the hand from slipping forward onto the sharp cutting edge of the blade.

4. Hold knife firmly. Your hand is less likely to slip.

5. Do not grab for a falling knife. You might miss the handle and grab the blade. The best practice is to step back out of the way so the point of the blade will not hit your legs or feet.

6. Never lay a piece of meat on a knife. You may forget the knife is there when you pick up the piece of meat.

7. Avoid carrying a knife when both hands are needed to carry meat or heavy packages. There is always danger of cutting yourself or someone else.

8. Never throw knives together in a box or drawer. This practice not only dulls the blades, but there is always a chance of getting cut when picking up the knives.

9. Do not reach into soapy water for a sharp knife. The soapy water hides the knife and you may grasp the cutting edge.

10. Be careful when using a cleaver. The chopping action is difficult to control, so keep the left hand as far as possible from the path of the cleaver.

11. Do not "crowd" your working space. A crowded working space reduces efficiency and is likely to cause accidents.

12. Let the saw do the work. When you force the saw it may "jump" from the bone to your hand.

13. Use a stomper when feeding meat into a grinder. Meat grinders are responsible for many missing fingers. Be safe. Use a metal or wooden stomper.

14. Keep floor clean. Fat and meat trimmings are as dangerous to step on as banana peelings.

15. Treat bone scratches and knife cuts immediately. Even a minor bone scratch can become infected and cause a bad case of blood poisoning.

16. Use your thighs rather than your back to lift heavy weights.