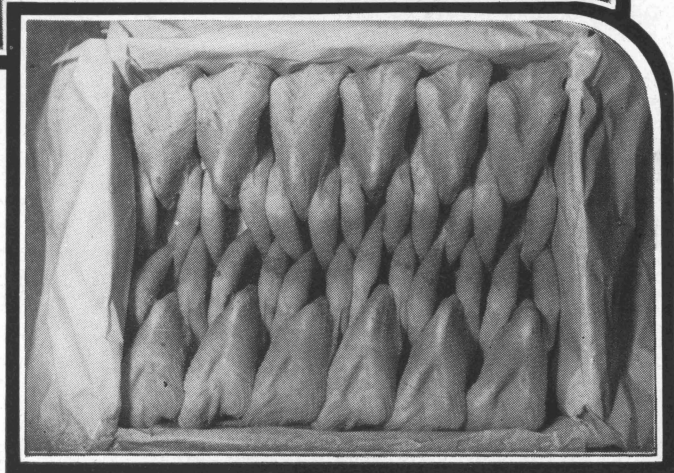
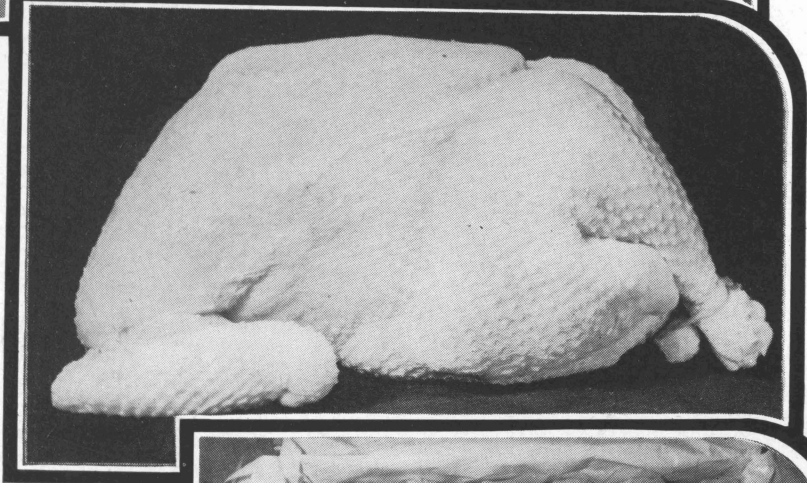
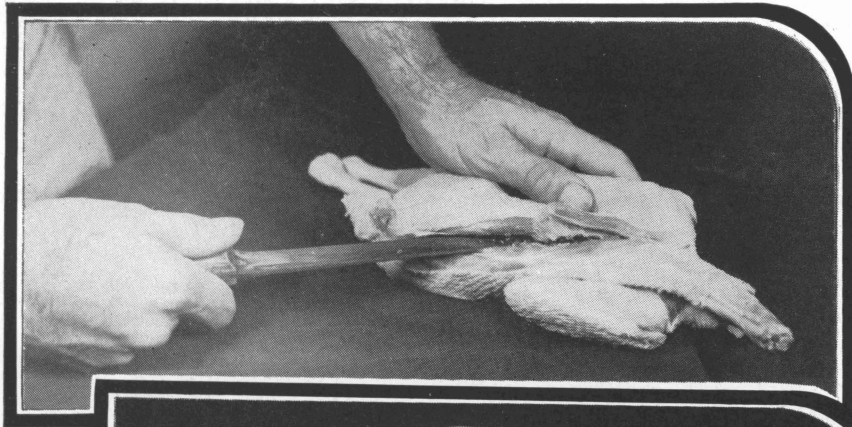


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PROCESSING POULTRY



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INTRODUCTION

Locker plants and other cold storage for chickens and turkeys are now available to a large number of people in Texas. Many who are now using or expect to take advantage of the opportunities are asking how chickens and turkeys should be selected, bled, killed, dressed and drawn. This indicates a need for uniform and adequate information on these skills. Some desire information on these skills when the carcasses (dressed birds) are not to be frozen. The information given in this circular can be used on chickens and turkeys for immediate home use, and frozen to be put into locker or sold.

The aim of everyone who processes chickens and turkeys should be to maintain as much of the quality possessed by the live bird as possible. The skills used in selecting, bleeding, killing, dressing and drawing chickens and turkeys will affect the percent of live bird quality that is maintained.

Edible chickens and turkeys of highest quality can be made available when the recommendations in this circular are used.

PROCESSING POULTRY

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SELECTING BIRDS FOR PROCESSING

Chickens and turkeys selected for processing must possess good quality factors if a high grade carcass is to be made available. Methods and skills used in processing can lower the quality and grade of the carcass, but they cannot improve upon that which the live bird possessed. This is equally true for poultry to be put into the frozen food locker, used immediately, or sold.

For best quality use the following factors when selecting chickens and turkeys for the frozen food locker, immediate home use, or to be sold.

Age. Select young birds such as broilers, fryers, roasters, such as young hens and capons, also turkeys, 24 to 32 weeks old.

Fleshing. Select birds with full, well rounded breast, also thick legs and thighs.

Fat. Select birds with an even covering of fat over the entire body. Thick skin on the

back of the neck between the first wing joints usually indicates that the body is covered with fat. A layer of fat over the ribs indicates that the body is well fattened since this area is the last to lay on fat.

Waste. Select birds that do not have large rear abdomen with excess fat or watery fluid.

Deformities. Select birds that do not have crooked backs and breasts, especially, for cold storage locker use. Deformed carcasses are never of the best quality.

Health. Select birds that are healthy and vigorous. Thin, poorly fleshed and otherwise unthrifty birds are usually not of good quality for food.

KILLING AND DRESSING EQUIPMENT

Good equipment of the proper kind is necessary for efficient killing and dressing of chickens and turkeys. The amount and kind of equipment will depend upon the number

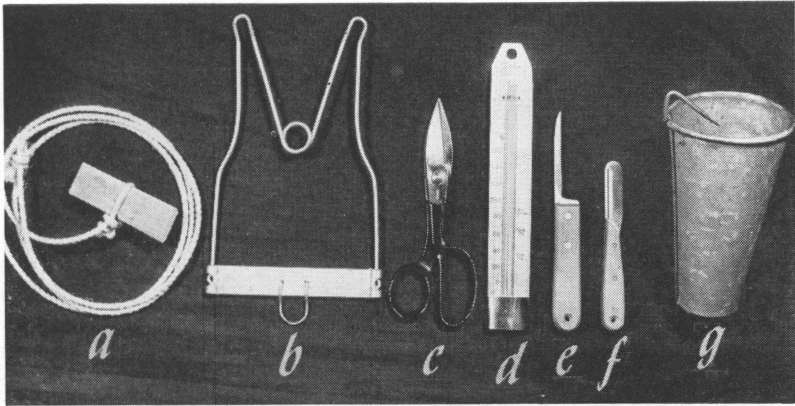


Fig. 1—Equipment for killing and dressing.

of birds to be processed. Fig. 1 shows a part of the equipment needed. It includes Sticking Knife (E) for bleeding and braining, Shackle (B) for hanging the bird, small rope and block of wood (A) for hanging bird, Pinning Knife (F) for removing pinfeathers, Blood Cup (G) for catching blood and holding bird's head down so blood will drain, and Thermometer (D) for testing temperature of the water. In addition to the equipment shown in Fig. 1 a container for scalding should be available. The scalding container should be large enough to hold 10 gallons or more of water. A smaller scalding container can be used, but water is harder to keep at proper temperature. Water temperatures used range from 123 to 180 degrees Fahrenheit. The best temperature to use will depend

upon the method used in plucking. One hundred and twenty-three to 130 degrees Fahrenheit is recommended to produce the best grade of carcass. It will take higher temperatures to remove feathers easily unless an efficient job of braining is done. *If processing is to be done on a commercial basis, other equipment would be needed.*

KILLING CHICKENS AND TURKEYS

After birds have been selected that possess good quality, every effort should be made to maintain it in the carcass. The use of proper equipment will help. Important as selection and equipment are, they will not insure a carcass of high grade with all the live bird quality. The percent of live bird quality maintained in the carcass will depend

largely upon the efficiency in doing the jobs necessary in processing. It is also important to do the jobs in the cor-

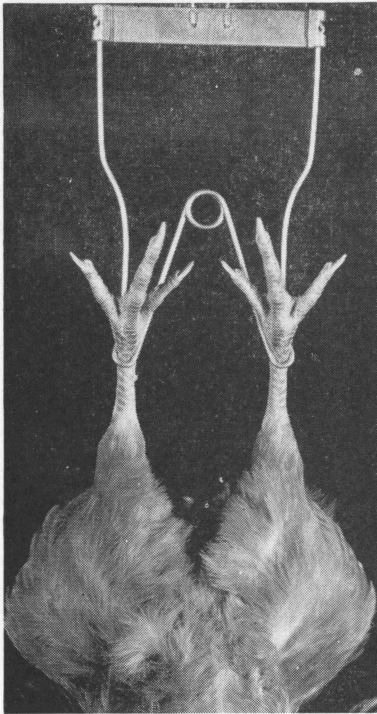


Fig. 2—Feet of bird correctly placed in shackle.

rect order. These jobs are discussed under the following headings in the order recommended for greatest efficiency.

Starve. Do not feed chickens and turkeys for 12 to 14 hours before processing. During this time they should have available all the water they

will drink. This will make drawing easier because the intestines will be empty.

Bleeding. Chickens and turkeys which have been thoroughly bled will be carcasses that possess greater keeping qualities than if poorly bled. Blood showing around the joints, in veins on the body and in the feather follicles (the depression from which the feather grows) indicates poor bleeding. Bruises on the carcass will cause poor bleeding and discoloration at that point.

Use the recommendations given here for good bleeding. 1) Hang bird by its feet, head down as shown in Fig. 2. The shackle used to hold bird should be located so the thighs of the hanging bird are even with the operator's face. 2) Grasp the bird's head with left hand, the comb resting in his palm, as shown in Fig. 3. Care should be taken to avoid holding the bird's throat in such a manner that flow of blood will be stopped. 3) Press on each side of the bird's head where upper and lower mandibles (beak) join. Open bird's mouth with two last fingers of left hand, as shown in Fig. 4. Do not use sufficient pressure on head to close throat thus cutting off flow of blood. 4) Insert sticking knife through



Fig. 3—Beginning of bleeding process. Cutting edge of knife away from blood vessels.

mouth and into throat with sharp edge away from operator in order to make correct cut, as shown in Fig. 3. To make correct cut, first, turn



Fig. 4—Finish of bleeding process. Cutting edge of knife towards blood vessels.

knife edge toward neck bones, then place knife so blade crosses blood vessels as indicated in Fig. 4. Pressure placed on knife point as it is withdrawn from the mouth will insure cutting blood vessels. Fig. 5 illustrates the blood

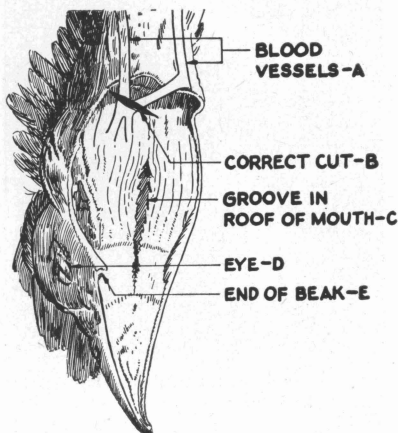


Fig. 5—Illustration showing blood vessels and correct angle to cut for bleeding.

vessels to be cut and the proper angle for cutting to get most efficient and complete bleeding.

Braining. Feathers on chickens and turkeys may be loosened by piercing the back lobe of the brain which controls the feather muscles. This part of the brain is located at the junction of the skull and neck. Loosening the feathers makes it possible to pluck them without hard-scalding the chicken or turkey. This is *essential* since the quality of the carcass is lessened by hard-

scalding. Torn skin is also likely to be an indirect result of poor braining.

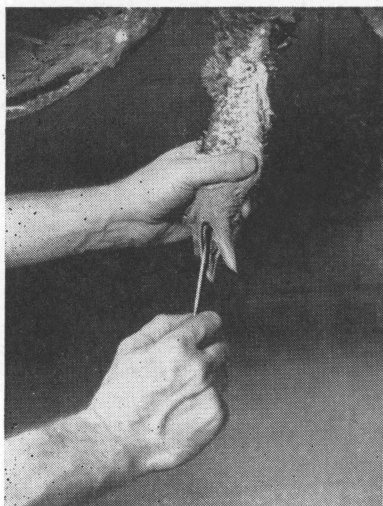


Fig. 6—Braining through opening in top of mouth.

Use these recommendations for efficient braining. Hang bird and hold the head as recommended under Fig. 3 and 4 for bleeding (Page 7) and puncture back lobe of bird's brain. Insert knife through groove in roof of mouth (Fig. 6) or eye (Fig. 7) to back lobe of brain as indicated by knife point (Fig. 8). One twist of the knife blade will assist in destroying brain tissue.

Attaching Blood Cup. Immediately after braining and before releasing bird's head, attach blood cup (Fig. 1-G). Do this by forcing the hook through the bird's lower mand-

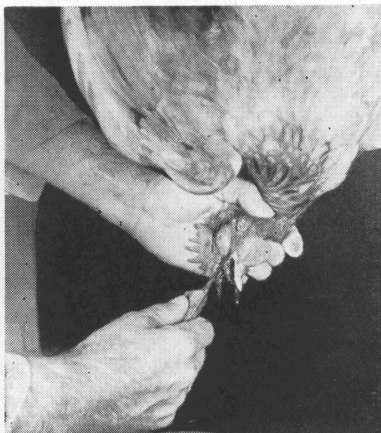


Fig. 7—Braining through eye socket.

ible (beak) from outside to inside as shown (Fig. 9). If this is done properly the bird's mouth will be held open and blood will be allowed to drain freely. Cups of proper weight and size for chickens and turkeys should be used. This will

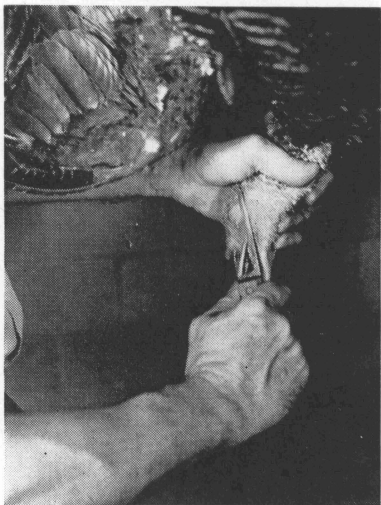


Fig. 8—Knife point showing lobe of brain location for braining.



Fig. 9—Attaching blood cup.

hold the head down, which also aids in thorough bleeding. The blood cup should remain attached until the bird is through flopping. This will also help to keep the bird from throwing blood on the operator.

Use of Funnels. Funnel shaped containers are sometimes used to hold birds. When these are used care should be taken to provide proper size funnels for different sizes of birds. This procedure in processing increases labor necessary in killing and plucking. It is also necessary to remove birds before plucking primary and secondary wing feathers. The funnels may help to keep birds from being bruised while killing.

PLUCKING CHICKENS AND TURKEYS

The three methods used to pluck birds are dry-pick, semi- or slack-scald and hard-scald. The semi- or slack-scald method is most commonly used by commercial firms and has been found to give the most desirable carcass. This means that the highest percent of live bird quality is maintained. To use this method the following procedure is recommended. Pull the primary and secondary wing feathers and main tail feathers about 10 seconds after bleeding and braining has been done. The bird should then be put into water which has been heated to 123 to 130 degrees

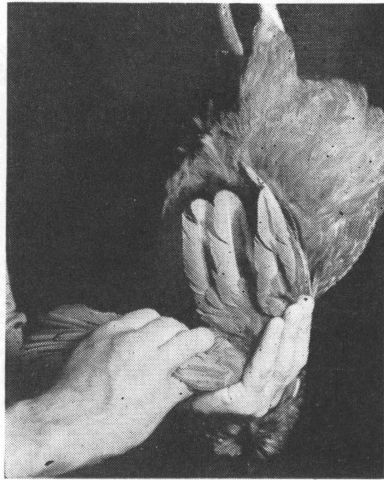


Fig. 10—Pulling primary wing feathers after braining.



Fig. 11—Position of hand to twist main tail feathers from bird.

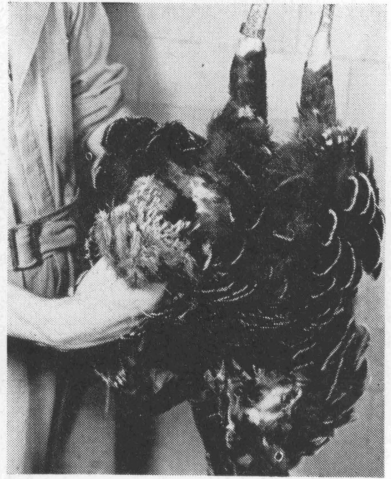


Fig. 12—Main tail feathers removed by twist of hand.

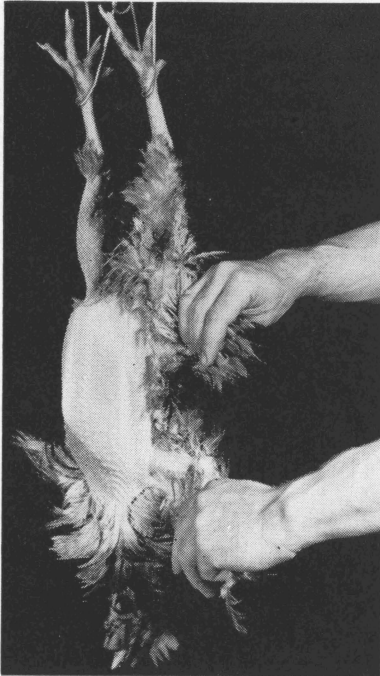


Fig. 13—Plucking bird.

Fahrenheit. Hold the bird by its feet and force it up and down in the water so the water will be sure to reach the skin on all parts of the bird. Do not leave the bird in water over 60 seconds. This method of scalding will leave the skin and flesh in a more normal condition than if the bird is hard-scalded. Fig. 14-B shows a carcass where semi-scalding method has been used.

The use of water hot enough to loosen the bird's feathers is known as hard-scalding. Hard-scalding will break the outer skin and cause the carcass to become discolored. It will also toughen in storage and there will be greater dehydration of

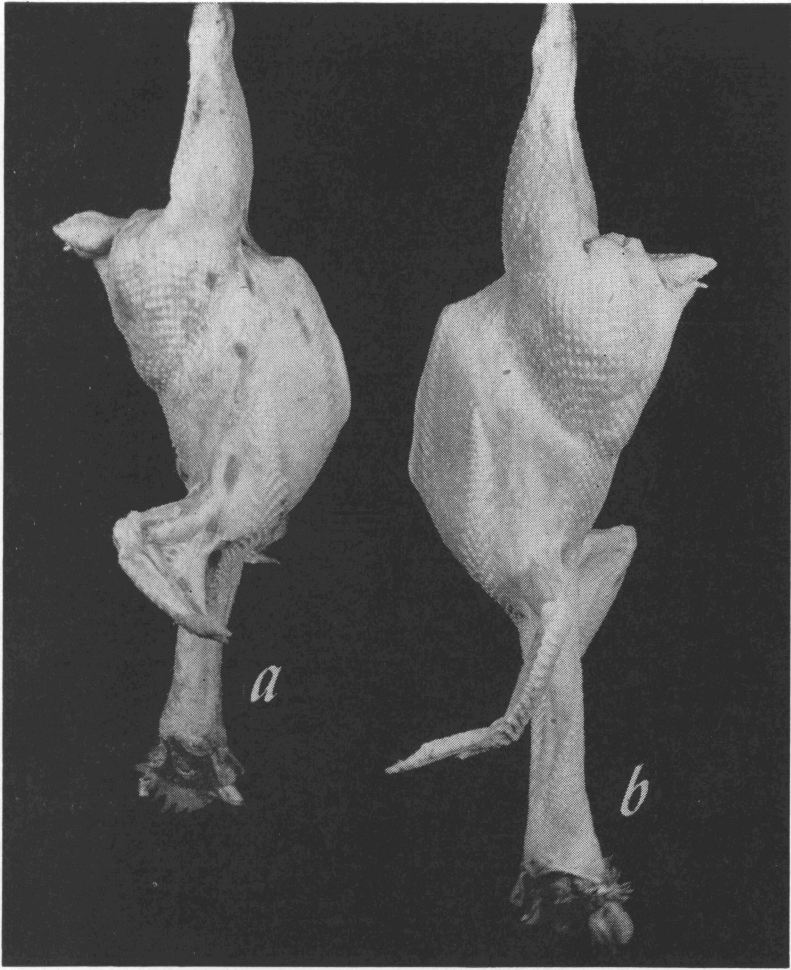


Fig. 14—Carcasses showing skin conditions when different methods of scalding were used. A—Hard-scald. B—Semi-scald or dry pick.

the carcass. When this method of plucking is used, braining is not necessary, but thorough bleeding is just as essential as in either dry picking or semi-scalding. Fig. 14-A shows a carcass which has been hard-scalded.

When the dry picking method is used the skin maintains its natural color. No water is used when this method of picking is practiced. The bird should be bled and brained as if slack- or semi-scald picking method is used.

Removing Feathers. Unless feathers are removed properly the skin is likely to be torn. Always pull the feathers from the bird with the grain. Torn skin will permit greater dehydration and lower the grade of the carcass. Remember to pull primary and secondary wing feathers and main tail feathers before scalding.

Removing Pinfeathers. Place the pinning knife (Fig. 1-F) under the pinfeather. Then place the thumb against feather and by pressing against knife pull feather out of carcass. Do not rub or scrape the carcass to remove pinfeathers. This is likely to break the skin and lower the keeping qualities and grade of the carcass.

Singeing. Hair-like feathers (Filoplumes) usually remain on the carcass after feathers and pinfeathers are removed. Remove these by passing the carcass over an open flame. The flame should be one that will not leave carbon or soot. A flame that is clear or blue is most desirable. Care should also be taken not to heat the skin. As stated under heading of removing pinfeathers, do not rub or scrape carcass vigorously, as this will break the skin.

DRAWING CHICKENS AND TURKEYS

The carcass may be drawn either after cooling or immediately after killing and plucking. The grease in the fat will not smear over the skin and the flesh will be firmer after carcass is cooled thereby mak-

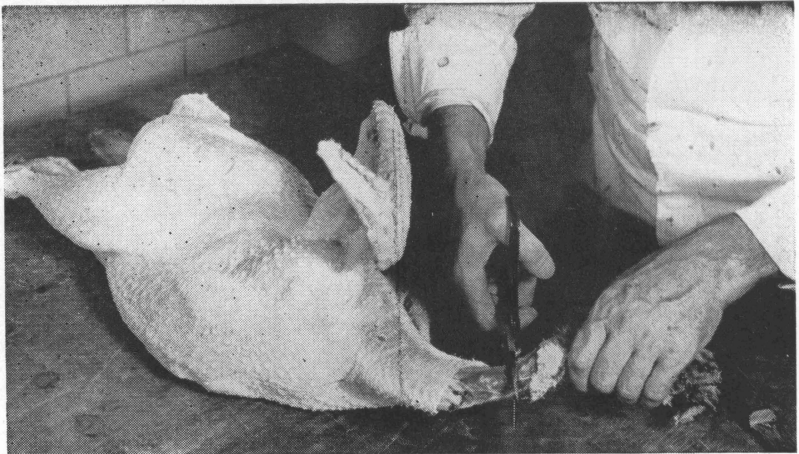


Fig. 15—Removing head. Cut neck two-thirds of distance from wing joints to head.

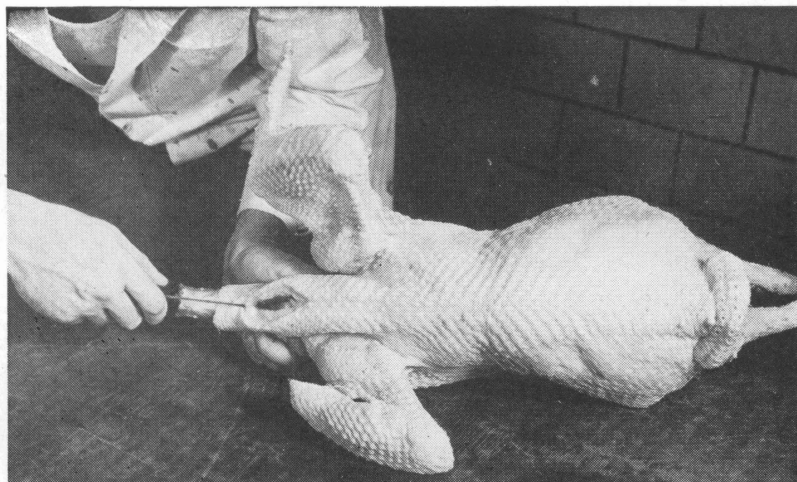


Fig. 16—Cutting skin to remove neck.

ing the job of drawing easier. Twelve to 24 hours of cooling at a temperature of 40 degrees Fahrenheit is recommended. The method to be used in cooking, also the age, size, tenderness, and personal choice will determine whether the carcass will be left whole, halved, quartered or disjointed.

Whole Carcass. The following steps for drawing are recommended when the carcass is to be left whole:

1) Cut the head off, leaving about two-thirds of the neck on the body. (Fig. 15.)

2) Split the skin down the back of the neck to a point between the first wing joints. (The skin is left on the carcass to be used in trussing. See Fig. 16.)

3) Peel the skin from the neck and remove the crop. (Crop hangs under the neck.) Care should be taken not to tear skin on the breast. (Fig. 17.)

4) Cut the neck from the body at a point between the first wing joints. (Fig. 18.)

5) If tendons are to be pulled from the legs it should be done before removing shanks. Fig. 19 shows this procedure. This can be done easily with proper equipment.

6) Remove legs at the hock joints. Cut so some of the leg scale is left at joint. This will keep the meat from pulling away from the joint when cooking and leave the bone bare. (Fig. 20.)



Fig. 17—Removing crop. Skin on neck has been peeled back to wing joints.

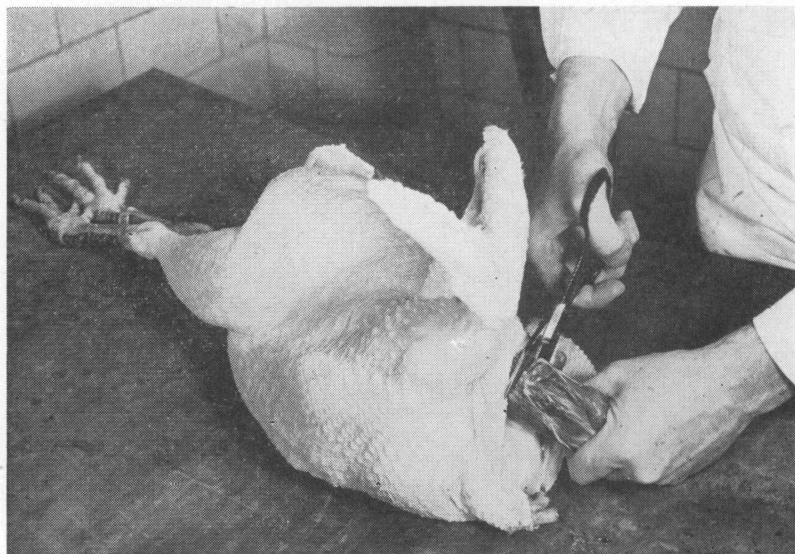


Fig. 18—Cutting neck off between wing joints.

7) Remove the oil sack which is located on top at base of tail (Fig. 21.)

8) Lay the carcass on its back and with a sharp knife make a vertical (up and down) opening into the abdominal cavity. Begin cutting just below the end of the keel or breast bone (Fig. 22). Continue cutting down to and around the vent. Do not cut crossways of the abdomen, that is, from leg to leg. Another method of entering the abdominal cavity is to make a lateral cut about half way between the end of the breast bone and vent, then cut around the vent as shown in Fig. 23.

9) Remove the intestines, gizzard, liver, heart, and lungs through the opening made in Step 8. With care, the intestines can be removed without being ruptured.

10) Remove the gizzard and liver from the entrails.

11) Split the gizzard lengthwise through one of the large muscles. If care is used, the pouch containing the feed can be removed without being ruptured. (Fig. 24, A & B.) Remove liver from entrails. Care should be taken not to rupture gall.

12) Split the heart open and wash free of blood. (Fig. 25.)

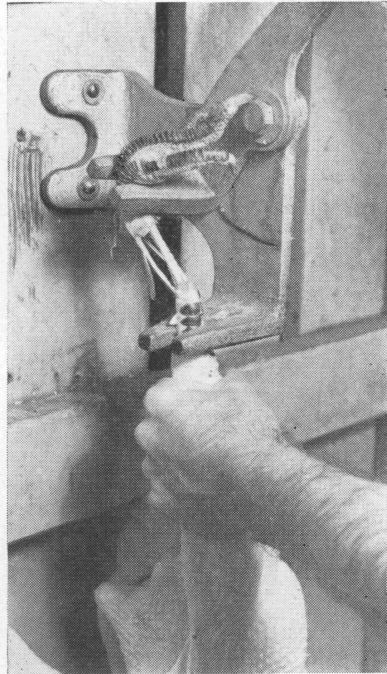


Fig. 19—Pulling tendons.

13) Wash the giblets (liver, gizzard and heart) and lay them aside. (Wrap separately.) (Fig. 26-B.)

14) The lungs are located toward the front end of the body cavity and are embedded between the ribs. To remove them place the fingers next to the backbone and force them under the lungs, peeling them out.

15) Wash carcass in cold water if necessary. Carcass is now ready for trussing. See Page 20 for details on trussing.

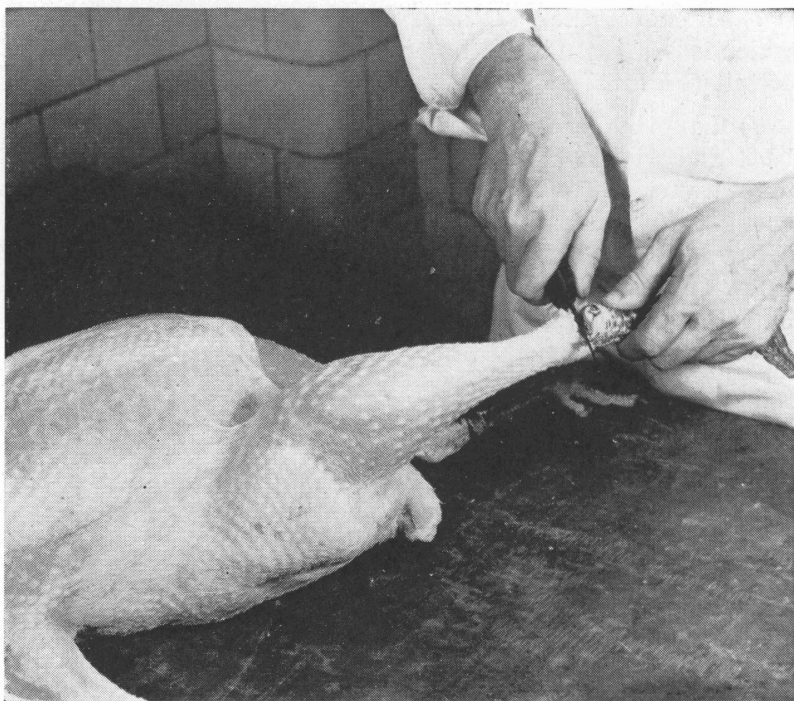


Fig. 20—Removing leg at hock joint.

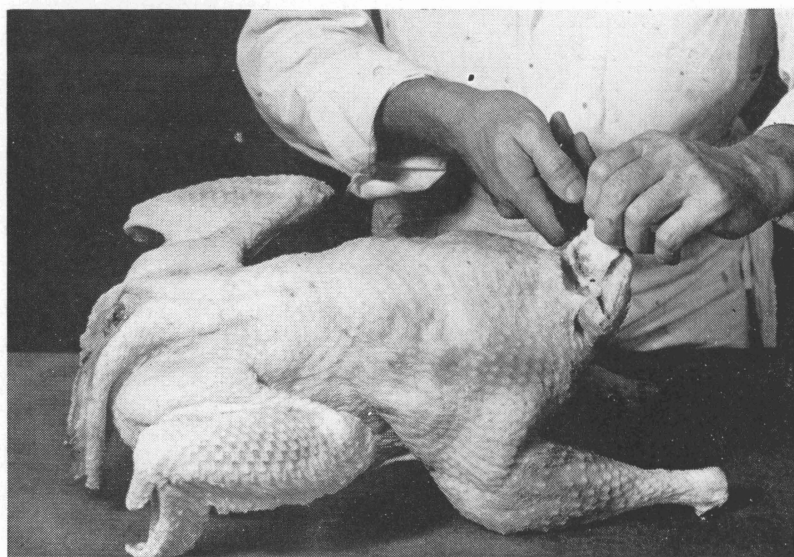


Fig. 21—Removing oil sack.

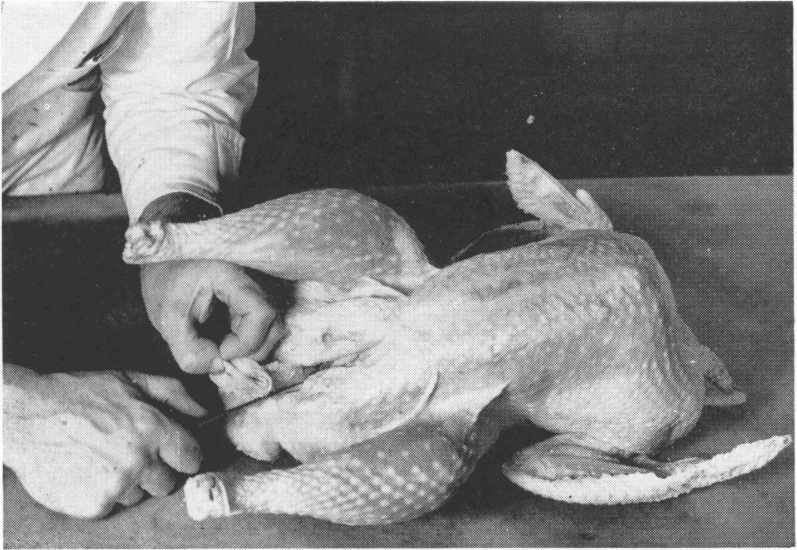


Fig. 22—Vertical cut to remove entrails.

Halved, Quartered, or Dis-jointed Carcass. The following method of drawing is recommended for broilers and fryers, when the carcass is to

be halved, quartered or dis-jointed as the occasion requires.

1) Remove the head by cutting the neck one-third of the

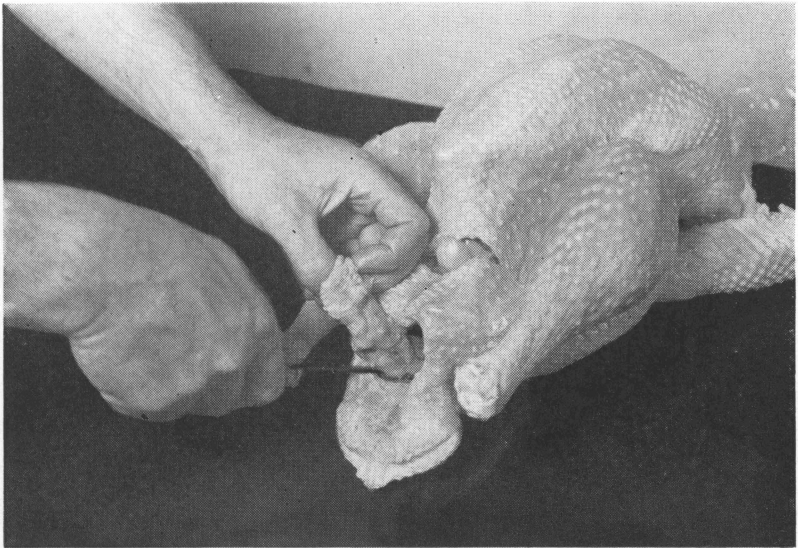


Fig. 23—Lateral cuts to remove entrails.

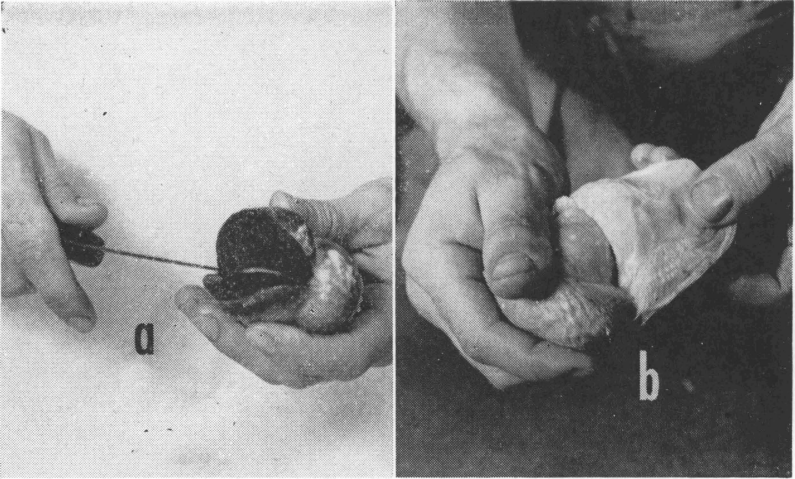


Fig. 24—A: Cut gizzard showing interior lining.
B: Peeling contents out of gizzard.

distance from the head to the body.

2) Remove the oil sack, which is located on top at the base of the tail.

3) Remove legs at the hock joints. Cut so some of the leg

scale is left at the joint. This will keep the meat from pulling away from the joint when cooking which would leave the bone bare.

4) Split bird down the back. Do this by laying the carcass on its side, then make a diag-

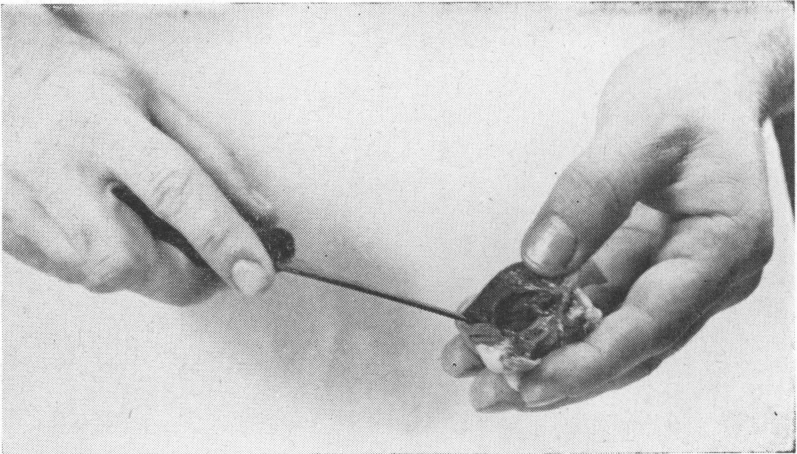


Fig. 25—Split heart to remove blood.

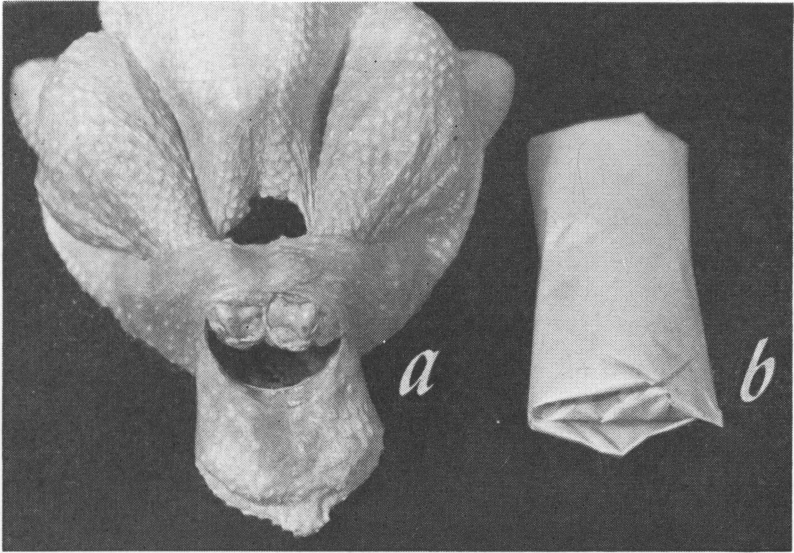


Fig. 26—Trussed bird and giblets. A—Carcass. B—Giblets.

onal cut from between neck and wing on upper side, back to the lower side of tail. (Be careful not to cut into the intestines) (Fig. 27, A & B). Another procedure is as fol-

lows: Put knife through board as shown in Fig. 28. Split back of carcass by grasping both legs and pull carcass back over knife as indicated in Fig. 29.

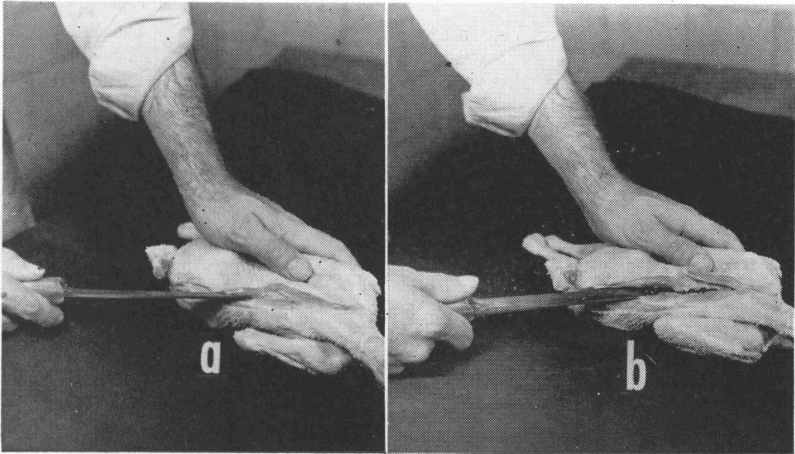


Fig. 27—Opening body cavity of broiler or fryer. A—Beginning cut to open bird. B—Cutting through back.

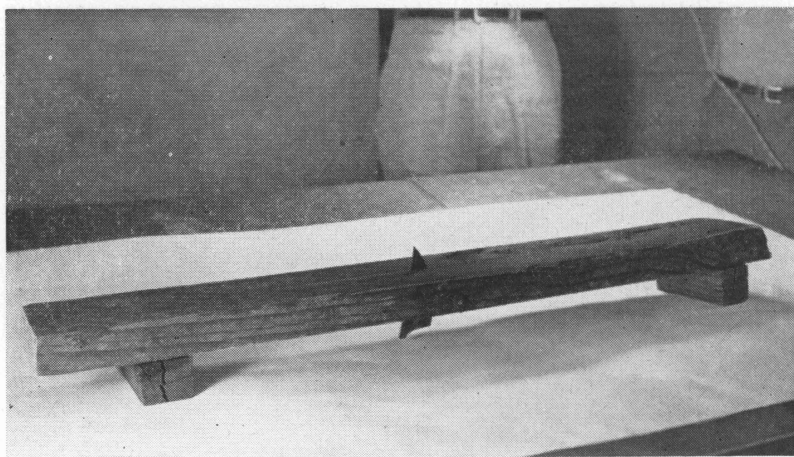


Fig. 28—Implement for splitting broilers or fryers.

5) Spread the carcass apart and remove the intestines, crop, gizzard, liver, heart, and lungs. (Be careful not to break the breast or wishbone.) (Fig. 30.)

6) Wash the carcass with cold water.

7) Wash the giblets and lay them aside. Wrap them separately. (See Fig. 31-B.)

TRUSSING CHICKENS AND TURKEYS

Trussing the carcass will bind it tightly. This can be done by the following steps:

1) Draw the neck skin as far over the back as possible and fold wings so as to hold it in place (Fig. 32).

2) Tie the legs down to the tail head with a strong white cotton cord (Fig. 33). Or if bird has been drawn by making lateral cuts as in Fig. 23,

then put ends of drumsticks through opening as in Fig. 34. The carcass is now ready to be cooked or wrapped for sale or storage.

3) The neck may be placed in the body cavity.

4) If the carcass is to be put in the frozen food locker wrap the liver, heart, and gizzard separately. (They will discolor the flesh of the carcass if put on inside.)

PROCESSING TERMS DEFINED

Hard-Scalded—

Any poultry items other than ducks and geese which have been immersed or otherwise subjected to water for dressing at a temperature higher than 130 degrees Fahrenheit.



Fig. 29—Splitting back of bird. Do this by pulling bird over point of knife.



Fig. 30—Removing entrails from opening.

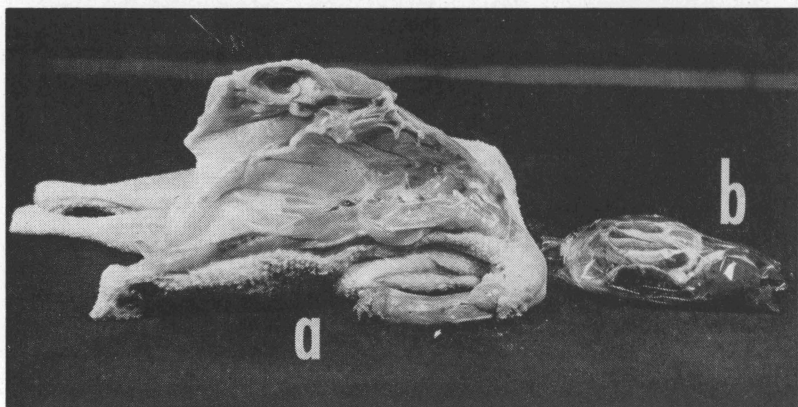


Fig. 31—Halved broiler with giblets wrapped separately.

Semi- or Slack-Scald—

Any poultry items immersed or subjected to water at a temperature not to exceed 130 degrees Fahrenheit.

Dry Pick—

Any poultry items plucked without the use of water.

Dressed Poultry—

Poultry that has been killed, bled, and plucked. (Commonly known as New York dressed.)

Braining—

The act of piercing the back lobe of the bird's brain. This

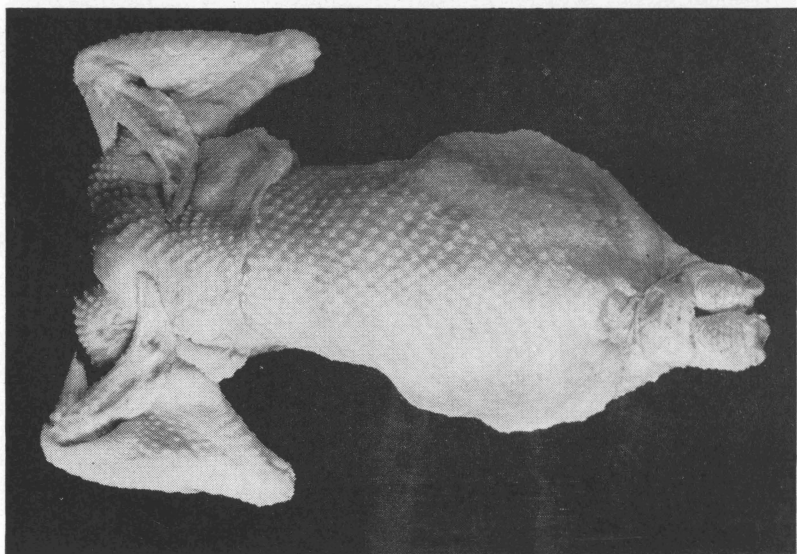


Fig. 32—Neck skin drawn back and held in place with wing tips.

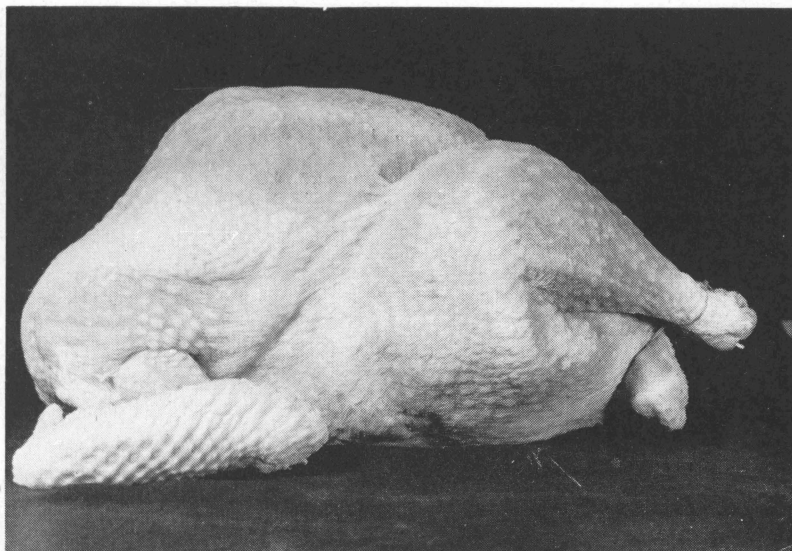


Fig. 33—Trussed bird showing legs tied to tail head.

causes muscles controlling feathers to relax and thereby makes feathers easier to remove.

Sticking—

The act of cutting blood vessels to bleed bird.

Disjointing—

The act of cutting bird into many pieces.

Halving—

The act of cutting bird into two halves.

Quartering—

The act of cutting bird into two equal halves and then cutting each half into two pieces, one piece to contain back, thigh, and drumstick, the other part includes the wing and breast.

Trussed—

Drawn bird bound tightly.

Plucking—

The act of removing the feathers from the bird.

Singeing—

The act of burning filoplumes (hair-like feathers) on the bird.

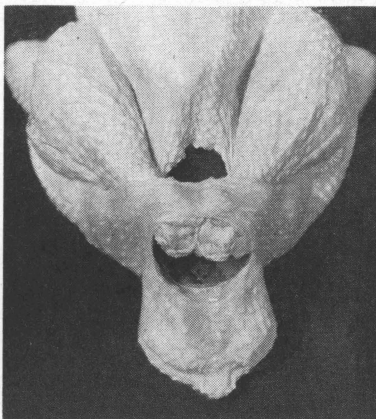


Fig. 34—Trussed bird showing legs put through openings in skin.

DRESSING PERCENTAGES

Poultry will lose approximately 11 percent of live weight when dressed. The loss when drawn is of course more and will vary according to such things as age, breeding, fleshing, finish, and methods used in processing. The following figures are about the average percent of loss of live weight for drawn poultry.

Broilers, 1½ to 2 lbs.....	33-35
Fryers, 2 to 3½ lbs.....	31-32
Fowl (Hens) 3½ up.....	25-28
Turkeys	18-25

SUMMARY

Select chickens and turkeys for processing that are in good health, fully fleshed and with an even covering of fat over the body.

Proper equipment used in killing and dressing chickens and turkeys will make the

work easier and also more efficient.

Starve birds before processing.

Bleed birds to insure thorough bleeding.

Brain birds to loosen feathers.

The semi- or slack-scald method of plucking is most desirable.

Torn skin will allow flesh to dry.

Bruised birds will cause poor bleeding.

The method used in drawing carcasses will depend upon whether they are to be left whole, halved or disjointed.

Age, size, personal choice and method of cooking will determine whether carcass is to be left whole, halved or disjointed.

Truss birds that are to be baked or roasted so they will be compact.