

heads 26 inches; circumference of bulge, outside measurement, 64 inches; length of stave, 28 1/4 inches.

Barrels are delivered to the grower with both head and all of the hoops in place, but with none of the hoops nailed. This means that the barrels must be coopered before they are filled and the proper coopering of barrels is something which the careful shipper or packer will not neglect. A great many barrels are made with only six hoops but the practice of using two quarter hoops instead of one is sometimes followed and lends strength to the barrel. In such cases the barrel has eight hoops all told, two at each end and two pairs of quarter hoops. Single quarter hoops are often broken in handling and especially with large barrels the extra quarter hoops would seem to be a wise precaution, especially as the extra hoop enables the barrel to be stacked more solidly on the bilge and has a tendency to prevent rocking. It is always advisable to get barrels of the first grade if it is at all possible. Second grade barrels are made of poorer workmanship and from poorer wood and if the fruit to be packed in them is worthy of being shipped to distant markets it should also be worthy of a good package.

The fact that barrels are delivered to the grower with the head and hoop in place makes it possible to store the barrels without danger of warping, but as soon as the barrel is removed from storage the one head should be nailed in and liners tacked over the various head pieces to prevent them from breaking out of the croze ring. At this time the quarter hoops should also be secured by two nails at each side of the barrel and after the other head is taken out and placed in the bottom of the barrel the latter is ready for use.

The first step in preparing the barrel is to prepare the face. When the barrel is being packed the face is the bottom of the barrel and apples for the face are always specially selected. This is not merely on account of the appearance of the barrel when opened after packing but on account of the necessity of a uniform layer of apples all of which will bear an equal pressure when the tail head is pressed into place. The face may consist of either one or two layers in the bottom of the barrel. For fancy fruit the double face is usually used, the second layer frequently being packed on the cheek so that extra color will show through the spaces left between the apples of the first layer. The law demands that barrels shall not be overfaced and by this is meant that a quality of apples shall not be placed in the face that is out of all proportion to the quality found throughout the rest of the barrel. The stems of apples used for the face are also removed to avoid bruising when pressure is applied and the apples are arranged in a layer made up of concentric rings in such a manner that when the last apple is placed the face will be tight and will show no loose apples. Even when apples are single faced, a layer of spotters is usually dropped between the apples of the face so that the red or other coloring will show through and add to the appearance of the face. The spotters also help to keep the apples of the face in place while the remainder of the barrel is being filled. For ordinary use the double face is of no advantage and often serves to misrepresent the contents of the barrel.

The remainder of the barrel may be filled by one of two methods, either the barrel may be filled directly from the packing table and the apples allowed to drop from the table to the barrel over an apron, or the apples may be put into the barrel by means of baskets, preferably those which are padded on the inside with burlap to prevent bruising. The general method in Ontario is to use baskets for filling the barrel and baskets with a half oval bottom are almost universally in use. Where the packing is done in the orchard the usual outfit consists of a gang of from four to seven or eight men, barrels, ladders, baskets, a packing table well padded and with a flexible canvas bottom, a barrel press and a plank for racking the barrels. Several men are kept constantly picking and the foreman of the gang does the sorting and the packing with perhaps an assistant to help him part time or all the time. The assistant helps with the sorting whenever the table becomes congested and the remainder of his time is spent in picking.

Before we continue to discuss the actual filling of the barrel it would be well perhaps to say something with regard to grading, because it is here that a great many packers fall down. The law is an inanimate and immobile thing and while it is designed to meet the needs of the situation, it invariably leaves loopholes whereby ignorant persons may fail to fulfil the spirit of the law and unscrupulous dealers or growers may evade a just interpretation of it. Grading and packing laws are designed to protect the consumer or the purchaser of fruit and to support the honest intentions of the majority of growers who desire to supply a product that will evidence quality and create satisfaction. If the law is interpreted in this spirit there should not be any difficulty in improving our apple pack since simple instruction would do all the rest. The careful packer will be careful not to crowd the lower limits of a grade and he will also take care that all culls or apples suffering from other defects are eliminated entirely. Copies of the Fruit Marks Act with definitions of the various grades can easily be obtained from the Department of Agriculture at Ottawa. Every effort that is made to introduce more careful packing into the marketing of the Canadian apple crop will be of assistance in enhancing the reputation of Canadian apples on the markets of the world.

After the face has been put in the barrel the remainder of the fruit should be put in with the greatest care. The apples should not be allowed to fall from near the top of the barrel to the bottom, because this will invariably mean bruises and every bruised apple when

the barrel is first packed will mean many more bruises before the apples are consumed. Racking is also a very important operation in the successful packing of apples. The apples must not only be handled carefully when they are emptied into the barrel, but they must be tightly packed so that shrinkage or handling during storage will not produce a slack barrel. A tight pack is secured by making sure that the apples settle thoroughly as they are being put into the barrel and this is secured by racking. Racking is accomplished by rocking the partly filled barrel backward and forward in a sharp jerky manner. The barrel is racked several times during the process of filling, first when the first bushel has been put in on top of the face and again after each half bushel has been added. When the barrel has been properly filled and well racked the fruit will show from one half to two inches above the top of the barrel. If the racking has been very thoroughly done, the fruit will not be so high above the top of the barrel. From one-half to three-quarters of an inch should be sufficient. If racking is insufficiently done the fruit may be pressed so that it is apparently tight, but after it has been handled for a time it is bound to settle still further and cause slackness. Slackness is the cause of the majority of the complaints that are received about barrelled apples.

Tailing the barrel consists in levelling the top of the filled barrel before pressing the head into place. This is necessary in order that the pressure will be distributed equally. The apples may either be levelled off roughly, or they may be arranged in a manner somewhat similar to that of the face. Some experience is necessary before a packer can tail in the latter way satisfactorily. In order to facilitate tailing the "follower" or "shaker" is usually used. This is a heavy circular piece of wood with a handle on top and very thickly padded with felt underneath. When the barrel has been filled and before it has been pressed the follower is inserted into the head and the barrel racked so that the apples will settle with an even surface. If the barrel is to be tailed similar to the face the follower is used before the barrel is quite full but if the jumble tail is used the follower is applied to the full barrel.

Corrugated pads used inside the head are of considerable help in reducing the amount of bruises. Sometimes two pads are used, one at either end of the barrel, but generally one pad inside the tailhead is considered sufficient. The screw press, which is known to practically everyone who has ever grown apples, is undoubtedly the most efficient type of barrel press, and is the one used altogether in Ontario. Ordinarily the press hooks on to the bottom of the barrel by means of iron strips, but there is on the market an attachment consisting of a platform on which the barrel rests when it is headed. The hooks have a certain disadvantage, as is as much as they are likely to break the bottom hoop, especially if the barrels are old or damp. The head should not be pressed into place too quickly, but pressure should be applied by degrees so that the apples gradually settle into position. If pressure is applied slowly the danger of bruises is lessened considerably.

When the head has been pressed into place it is ready for nailing, after the upper hoops have been tightened down. It is advisable to drive nails into the hoops at an angle of about forty-five degrees and six or eight nails are required to hold a three or four-piece head in place. If the nails are driven in horizontally they have a tendency to split the head pieces, into the edge of which they are driven. It is usually advisable with apples intended for the export market, or where they are to be shipped long distances, to headline the barrels also. Headliners consist of small strips of wood which can be bent to conform to the circumference of the barrel head and are tacked on the ends of the head pieces so as to keep the head in the croze ring in spite of any jar that may occur. The barrel thus filled, pressed and headed is ready for market, except for the branding. The brand should show the variety, the grade, and the name and address of the packer. Every grower should familiarize himself with the requirements of the Fruit Marks Act, with regard to the branding of fruit packages, before any fruit is sent forward to the market.

POULTRY.

Feeding and Fattening Roasters.

Poultry meat is one of the most palatable meats offered to the consuming public, but on account of the fact that only a small part of the poultry to be secured on the market is of the highest quality, the consumption of poultry is not as great as it should be. Roasters are the most popular of all market classes of poultry, and there is a market for this class of fowl at all seasons of the year. The majority of the birds sent to market for consumption as dressed poultry are thin and undersized, but a prime roaster is a bird that is young, full-grown, tender, plump and well-finished. A thin bird is not attractive when dressed, and when roasted and ready for the table is not nearly as enjoyable eating as one that is of good size and has been well fed. The thin roaster appears shrunken, and the flesh when eaten will probably be dry and tough, so that the purchaser is likely to get a bad impression of poultry meat. The greatest demand is for well-finished roasters weighing about four or five pounds, since these suit the needs of the average family better than either a larger or smaller bird. The surplus cockerels from farm flocks are often marketed as roasters, and there is usually a good demand for well-fed birds. The market shows a natural shortage of desirable roasters up to about the middle of August, and prices are usually good as a result. The fall of the year, however, is the natural roaster period,

but the large supply of birds from farm flocks has a tendency to lower prices.

The special fattening of birds for market is a special finishing process, and because it tends to produce a younger, plumper and more tender roaster, means higher prices on account of the increased quality. There is frequently several cents per pound difference between thin and plump poultry on the market. For fattening feeds soft mashers are undoubtedly the best, because the gain in weight is greater and the quality of the flesh superior. Oatmeal feed, ground buckwheat, cornmeal, low-grade flour, middlings, barley meal, and buttermilk are all used as component parts of wet or soft mashers. The object of fattening is to increase the fleshing of the birds, but not to get them abnormally fat. They will, however, carry considerable fat intermixed with lean meat, and because of the special fattening feeds will put on a more juicy and tender flesh.

Generally speaking, crate-fed chickens are regarded as superior to pen-fed birds. An occasional feeder may be able to get better results from pen feeding or from feeding a number of birds in a box stall, but where crate fattening is practiced there is more likelihood of an even product and a more economical use of labor. Whatever method is followed cockerels should be fattened for at least two weeks before they are killed. It is impossible to suggest a ration that will prove best under all circumstances, but feeds enumerated above may be fed in such combinations as will prove least expensive or the easiest to obtain. Milk is excellent for fattening chickens, as it tends to develop the tissues and improve the quality of the finished product. A good proportion of milk to feed is two pounds of milk to one of mash. The grains used in the mash should be ground as fine as possible and the mash when mixed—which should be about 12 hours before feeding—should have a consistency of ordinary batter, so it will pour.

Discussing the feeding of birds that are being fattened, the Poultry Department of the O. A. C., Guelph, advises as follows:

"The best ration that we have yet used is one composed of two parts of finely-ground oats, two parts of finely-ground buckwheat, and one of finely-ground corn; to this is added sufficient sour milk to make a batter, or ordinarily about two to two and one-half pounds of milk to one pound of grain. We have gotten very good results from a ration composed of equal parts of cornmeal, middlings and buckwheat meal. Frequently barley meal can be substituted for the buckwheat, or oatmeal for the middlings. It is desirable, if possible, to always use milk, as much better gains are made with it than any other food. Where milk is not available, blood meal and beef scrap can be substituted, but we would not advise more than fifteen per cent. of the grain ration to consist of these foods. We would advise soaking the blood meal or beef scrap in warm water for twelve hours previous to being mixed with the grain. We have gotten better results in some cases and equally as good in all cases by feeding any of the above mixtures cool or cold rather than warm—that is to say there were no better gains made by keeping the food at 70 or 80 degrees than at 35 or 40.

It is of the utmost importance that the birds be kept with keen appetites, as a little over-feeding on the commencement usually means indifferent gains. One should be careful to have the birds free from lice or other insects, and as far as possible to keep them in a cool, comfortable place, rather secluded, so as not to be disturbed by the visiting public or other chickens. The birds should be dusted with a small amount of sulphur or other insect powder in order to keep the lice in check. If the sulphur is used too freely it produces a scaly appearance on the birds when dressed.

We have a surplus of cockerels each year over and above those required for breeding purposes, and a number of these are fattened and killed; a few are sold to farmers or breeders. Cull pullets are also fattened. Many farmers and others market their birds in a thin condition. We can, for the time it takes to feed, clean out the pens, etc., make at least fifty cents per hour over and above the cost of feed. We usually feed these birds by lamplight at night, so that little valuable time is lost."

FARM BULLETIN.

Potato Crop Insurance.

The principle of insurance is being applied to the potato crop, for which the State of Maine has a continental reputation. One of the large fire insurance companies has included this branch of risk in its operations. The policies are said to have gone as high as \$200 to \$250 per acre, though the former is the schedule limit and the premium rate six per cent. The grower is assured of the amount stated no matter how the season goes. Farmers in other New England States are reported to have been offered a \$200 per acre insurance at eight per cent., but anticipating a \$4 per bushel price, declined to invest until potato prices dropped one-half, and then applications began to flow in but were not entertained by the companies. Insurance has also been applied to sweet corn growing in Maine, and preparations are being made to cover fruits and other crops. In the schedules, production cost is figured out covering rent, tillage, spraying, harvesting, etc., and loss payments are calculated on market values at the nearest shipping point.

W. T.