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TURKEY GROWING IN IDAHO

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COOPERATING
E. J. IDDINGS, Director

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Prepare nests out on the field, on the ditch bank, or in the sage brush. Do not confine turkey hens as a convenience. There is no easy way to raise turkeys. Equipment and improved methods may increase volume and improve the quality of the stock, but are not likely to reduce labor to any marked extent. Suitable equipment for turkeys is not expensive. It is poor economy to hatch poults and then lose them on account of poor or entire lack of equipment.

Do not give setting hens too many eggs. Make proper preparation for setting hens. They must be able to keep warm. They must not be annoyed by animals.

Turkey hens are the best turkey mothers. Two hundred poults is the limit and a smaller number is much safer. When artificial brooding becomes a safe practice for general use, turkey meat will cease to be a luxury. If artificial brooding is practiced it must be done in small units. Poults should not be fed wet and sloppy feeds. Sour milk and dry grains are best. Poults require an abundance of succulent green feed. Lawn clippings, slawed cabbage, onion tops, dandelions, and green alfalfa chopped fine are good. Confine turkey mothers to coops. Allow poults to run out and in. Give poults a good start. Feed cod liver oil.

Turkeys must range freely. When poults are full feathered and the weather will permit, put them on range. Do not permit poults to suffer from thirst. Feed growing turkeys while on range. Start finish early. Most diseases are preventable. The cause for crooked breast bones is insufficient bone building minerals while the poult is growing. Breeding stock and overheating may also be a factor.

A practice that have proven successful should not be discarded until another is known to be better.

*Turkey Growing in Idaho

By PREN MOORE and M. R. LEWIS

The factors that limit turkey growing in Idaho are range limitation, lack of experience, misleading information, poor breeding, indifference to details in practices, and poor finish of the market stock.

In order that the most satisfactory results may be obtained, it is important that the factors involved be understood. The most important are: (1) Breeding, (2) Conditioning of breeding stock, (3) Handling breeding stock during the breeding season, (4) Brooding, (5) Incubation, (6) Feeding the poults, (7) Range, (8) Finish, (9) Killing and dressing, (10) Disease, (11) Sanitation, (12) Marketing. Each factor has its influence in determining the value of the stock when mature. Turkeys are grown for their value as meat. Egg production is a consideration only as it affects reproduction.

The purpose of this bulletin is to encourage ecoonomy in production, improvement of quality, satisfactory marketing and general stabilization of the turkey industry and to give information that will assist growers to achieve these objectives.

PRICE FLUCTUATIONS

The nature of the industry appears to stimulate abnormal inflation and contraction in production. Turkey prices fluctuate from year to year. Prices apparently rotate in rather irregular cycles. Supply and demand are the natural influences, the latter often influenced by industrial conditions. A short supply may be affected by a general labor strike or other industrial disturbances. Interest in turkey production increases with advancement in price. Periods of high price bring new growers. Many people plunge in on a large scale without previous experience. It is not uncommon to see people with no previous experience start with fifty or more breeding hens. The successful grower is the one who develops slowly or in proportion to his accumulation of information and experience. To be

*This bulletin was written by Pren Moore, Poultry Husbandman of the Extension Service, and M. R. Lewis, Professor of Agricultural Engineering in the College of Agriculture and Irrigationist of the Experiment Station. The original drawings for the illustrations were made by M. R. Lewis, also the lists of material and specifications. The subject matter was prepared by Pren Moore.

successful, one must be able to ride the price waves. The safest time to increase volume is when the price cycle is at the low point. The crop is almost certain to be short immediately following low prices. Prices fluctuate and no one appears to be able accurately to forecast low markets. A steady, substantial development of the turkey industry in Idaho appears safe for anyone interested.

IDAHO CONDITIONS FAVORABLE FOR TURKEYS

Idaho has every natural advantage for turkey growing. The extent to which the industry may be developed in the state is limited only by location and by the inclination and ability of the persons interested. In southern Idaho the land is gravelly in character. There are wide expanses of range; feed is abundant; the growing season is long; spring comes early, usually is dry and there is an abundance of sunshine. Southern Idaho is favored with an unusually early hatching season for turkeys, an advantage when compared with many other sections where turkeys are grown.

Idaho turkeys are superior in quality. No other section produces finer quality and there are few that grow as fine. The national crop may be large at times, but it seems probable that Idaho quality always will bring a premium. Low grade stock is always a drag on the market and off grade Idaho turkeys are probably no better than the off grade stock of any other section. The problem of Idaho turkey growers, therefore, is to grow the quality stock that the state is capable of producing.

Turkey mortality each year is very great. This is true, not only of poults but of breeding stock. The turkey grower needs to improve the quality of his stock and to reduce mortality. Should the practices recommended herein differ from those in use by a grower who has been successful over a period of years, it is advised that he be reluctant to change his practice until he knows from experience that these methods are better than his own and that the changes will be advantageous.

CONSUMER DEMAND

Turkeys may be regarded as a luxury. American families regard the turkey as their holiday meat. They are used on other festival occasions and at banquets and are on the menu of the more fashionable hotels and restaurants at other seasons. However, it is the culls and No. 2 grades that are generally served by the restaurants and hotels. It is the fancy turkey that is in demand for the holiday trade.

There is a spread of from 7c to 10c between grade No. 1 and Grade No. 2 and at times the spread is even more. It is obvious, therefore, that the growers' interest is served best when the bulk of his stock grades No. 1.

BREEDING

The turkey industry has two natural divisions: (1) Purebred Flocks; (2) Commercial Flocks. The purebred flock is necessarily a small unit. The commercial flock may consist of any number and is limited only by available range, feed, the grower's inclination and the available help.

PUREBRED FLOCKS

Purebred flocks are the source of breeding stock for the commercial flocks. Purebred breeding involves intensive practices. Known ancestry is essential. It is necessary, therefore, that the stock be mated in small units. The object of purebred breeders is to standardize the stock. Each breed has a weight and color standard. Weight is of the greatest economic importance. However, color is important, in that fine color marking is an indication of purity in breeding. The purebred breeder must strive for uniformity in weight. The nearer individuals of a breed conform to the standard weight for the breed, the more valuable they are as breeders providing they are healthy and vigorous.

By proper selection of breeding stock, a strain may be so standardized as to become quite uniform in size, shape or type, quality, and general conformation. Extremes must be avoided when selecting breeding stock. Breeding females and males must be as nearly standard in all respects as possible. Standard weight toms will increase the weight of undersized flocks. By the use of standard toms on undersized flocks, the size may be brought up to the standard for the breed in a few generations, often in two or three. However, it is not practical to use oversized males to correct the deficiency of undersize in any flock. Oversized toms produce stock that is too leggy, flat bodied and slow to finish. Stock that is standard matures and finishes quickly.

The standard weights for Bronze Turkeys follow: young toms, 25 pounds; yearling toms, 33 pounds; aged toms, 36 pounds; pullets, 16 pounds and hens, 20 pounds. Changing to either lighter or heavier weights than the standard, tends to destroy the value of the breed. All breeds of turkeys have a standard for weight and any deviation from

the weight fixed by the standard tends to lower the value. The standard weights for the other breeds are as follows: Narragansetts: young toms, 20 pounds; yearling toms, 25 pounds; aged toms, 30 pounds; pullets 14 pounds and hens 18 pounds. White Hollands: young toms, 20 pounds, yearling toms 24 pounds; aged toms, 28 pounds; pullets, 14 pounds; hens, 18 pounds. Bourbon Reds: young toms, 20 pounds; yearling toms, 25 pounds; aged toms, 30 pounds; pullets, 14 pounds; hens, 18 pounds.

AGE OF BREEDING STOCK

Aged hens are better breeders than young ones. They will not lay as many eggs as will young ones, but they will produce stronger poults, and the stock will be more uniform in quality and finish. It is necessary, however ,to use some young hens each year for breeders in order to keep the flock up to the number desired. Just how long a turkey hen should be kept as a breeder must be determined by her usefulness. The breeding value of any individual is determined by the quality of its offspring. A good breeder should be maintained in the flock as long as it is useful. This should be determined each year. It is a good practice to dispose of breeding hens in a commercial flock after the second breeding season. Therefore, a little more than one-half of the breeding hens in a commercial flock each year are pullets. The same rule as the one used for females must determine the age to which males should be maintained in the breeding flock. A tom that is a good breeder should be kept in the flock as long as he is vigorous and active. Two years is long enough to keep breeding males in a commercial flock. It is a good practice, however, to use all old or all young toms in commercial flocks.

A good thing for commercial turkey growers is a tom association. By such cooperation, it is possible for one grower to use a group of toms one year and pass them on to another for the next year. With five or six growers cooperating, one may use young toms one year and older ones the next. Longer service can be had from the toms and the tendency will be to buy better stock.

NUMBER OF HENS TO TOM

The number of hens to mate with one tom must be determined by the age of the toms and the purpose of the mating. In the commercial flock, from 10 to 15 hens to the tom is safe. In small flocks, a greater number of hens are often mated with one tom with satisfactory results. Purebred flocks are usually mated in smaller numbers. Male and females are mated with a fixed breeding purpose

in view. Some mate as few as five and six hens to the tom and occasionally a pair mating is made. The good breeder is continually striving to effect improvement. Many special matings are made with a view to intensification of the good qualities of a few individuals. By small matings the results may be more definitely known and the blood lines maintained. Turkey growers in general are dependent upon the purebred breeder for improvement of the stock.

SELECTION OF BREEDING STOCK

The purebred breeder uses only those individuals that conform to the ideal. Color, type and standard weight are the points for consideration. The commercial turkey grower may not be so concerned about fancy points in color. However, the desired color is an indication of purity and while color may not appeal to the unimaginative as being important, it is a fact nevertheless, that the speciman that conforms most nearly to standard color is likely to be more dependable as a breeder. It is not necessary that the hens be purebred in a commercialff flock, but it is important that they conform to standard in type and weight. Purebred hens are an improvement. On the other hand, it is claimed by some good authorities that some wild blood in commercial flocks is an advantage. Breeding males that are purebred are always best for commercial flocks. Standard type and weight also are essential.

All breeding stock selected, either for purebred flocks or for commercial flocks, must be vigorous. Bone is essential. One should select strong, sturdy individuals and keep as near the standard as possible. They must be well up off the ground on stout legs. Legs that are too short are to be avoided as well as the excessively tall birds. The individuals with large bones in the legs and flat bones in the shanks are best. Round shank bones are to be avoided. The toes must be large and well spread when the bird is standing on the ground. The thighs must be large and well muscled. Watch the birds walk and reject those that show a tendency to knock knees. Select the individuals that walk with a straight stride. Reject the birds that wabble too much on their legs when walking. Spring of rib, indicated by the width of back just back of the wings, is desirable. Select for wide backs and broad, firm hips. The body must be deep, yet well rounded. The choice meat of a turkey is on the breast. Select breeders with deep, broad breasts. Reject as breeders all birds with crooked breast bones. The head is an important adjunct to consider when selecting breeding

stock. A deep, broad skull, a wide, stout beak, large brilliant eyes and a full, strong face are indications of vigor and ruggedness. Birds that have long, slim heads, with hollows in front of the eyes, and small, dull eyes are low in vitality and are not fit for breeders. The points covered herein apply to both males and females. The commercial turkey grower may sacrifice color, but breeding stock that has vigor, standard type and weight is as necessary as feed to develop good market turkeys.

WHEN TO SELECT

Early maturity should be sought when selecting breeding stock. It is obvious, therefore, that the selection must be made at the time when the stock is reaching maturity. Eliminate all slow maturing birds. Rapid maturity is an indication of vitality. Slow maturity is an indication of weakness. The tendency to use slow maturing birds for breeding purposes must be overcome. The strongest individuals must be mated together to insure the development of rugged strains of stock. A good practice is to make frequent selections, banding the most promising individuals early, and then as defects become noticeable the process of elimination may be applied. Select stock with a view to uniformity. Early selection makes it possible to eliminate off-types and abnormally large or small individuals.

CARE OF BREEDING STOCK

Separate breeding stock from the general flock before the finishing of the market stock is started. Range the breeding stock to themselves. Unlimited range that is free from contamination appears necessary. However, some claim to be successful with breeding stock that is confined to small areas. Arrange to feed away from the farm buildings and other poultry. Breeding turkey stock appears to thrive best when roosting in the open air. A plan for perches is shown in Figure (1) which appears to be the most satisfactory roosting arrangement.

NESTS

Most of the turkey growing area of southern Idaho is destitute of wooded growth other than sage brush. It is necessary, therefore, to arrange nests for turkey hens. Some growers confine the hens to small areas during the laying season, as a convenience in securing the eggs. It is necessary for the purebred breeder who has a number of small matings to handle the stock in a manner so as to keep them in separate groups as they were mated. Some plan must be provided which will make it possible to iden-

tify the eggs from the different individuals. It is necessary, therefore, for the purebred breeder to confine the stock to small areas during the breeding season. Provision must be made for exercise and perfect sanitation. The space for each lot must be as large as conditions will permit.

It is better for the commercial grower to allow the breeding stock to range at will. There are no easy ways to handle turkeys. Improved equipment brings better methods and increases the volume, but it is not likely to effect a very great saving in labor. The number of turkeys developed and their quality is the goal for every turkey grower. The breeders should be allowed to run at large. Suggestive nests along the ditch banks or out in the sage brush are advisable. Drive four stakes in the ground and box three sides with boards or burlap, leaving the south side open. Cover the top with boards and then cover all over with brush or straw. Dig a hole for the nest, and provide a liberal amount of straw or leaves. Herd the hens toward the nests and they usually will take to them at once. Drive a tall stake near each nest, to which tie a piece of cloth and the nests will be easily found. Some hens will insist on going to stacks or farm buildings to lay. Permit them to follow their inclination at this time and obtain best results.

Gather the eggs each day. Eggs that are left in the nest may be destroyed by animals or chill and freeze. By gathering the eggs each day, the hens are likely to lay longer before going broody. Set the hens as they become broody. Turkey hens make better turkey mothers than do chicken hens. The second clutch of eggs are late, the poults difficult to raise, the mortality high, the stock matures late and the quality usually is poor. It is better economy to succeed in raising a high per cent of the poults hatched and to produce a high quality in the stock raised than it is to hatch large numbers and then sustain a heavy mortality and to produce a large volume of cull stock. Meat of high quality is the aim of the turkey grower. Much better results are obtained under conditions where it is necessary to restrict the roving tendency of turkeys when they are growing than where they must be forced away from the farm buildings. Turkey mothers are inclined to rove while chicken mothers are more domestic and it is difficult to force them out with their young.

FEEDING BREEDING STOCK

The breeding stock must be kept in good flesh. Separate

them from the general flock when starting to finish for the market. Grain feeding may be sufficient during the fall and early winter months. However, some sour skim milk and plenty of green feed will improve the ration. Yellow corn is the best grain for turkeys although a mixture of equal parts wheat, corn and barley is good. Steamed and rolled barley and sour skim milk are fed by some turkey growers with excellent results. Barley is steam rolled to prevent waste. There is a heavy loss when dry rolled barley is fed to turkeys. Feed milk in long troughs that are equipped with legs. A plan for a good milk and grain feed trough is shown in Figure (2). Feed rolled grain in troughs or hoppers. Turkey hens will start laying earlier if they are fed a laying mash. Any good laying mash that is good for chicken hens is suitable for turkeys. Provide oyster shell and place it in piles where it will be convenient. Turkeys require bulk in their ration. Provide plenty of green feed. Alfalfa leaves or clover are good. Cod liver oil placed on the grain in the amount of one pint to each 100 pounds is a good feeding practice. Increase the cod liver oil to one quart to each 100 pounds of grain during the laying season. Mix the cod liver oil with the grain in the same manner as when treating grain for seed. Do not mix more than a ten day supply at one time.

INCUBATION

Natural incubation is the method in common practice for hatching turkey eggs. Some, however, are hatched artificially. The better practice is to set the turkey hens when they become broody and supplement them with either chicken hens or incubators or both. As soon as there is sufficient volume of eggs, set them. By the time they hatch, there likely will be enough broody turkey hens to take the poults. Turkey hens will usually mother poults after they have been broody but a few days.

When turkey hens are to be set they should be moved to a place where they are comfortable and are protected from annoyance by children or animals. The plan shown in Figures (3) and (4) has proven very successful as a battery in which to shelter turkey hens while sitting. Each hen is in a compartment three feet wide by eight feet long. She has the advantage of protection from the wind and storm as well as annoyance from animals or children. Each compartment is quite open, admitting sunlight and fresh air. The battery may be located at some convenient place. The plan may be enlarged to accommodate any number of hens.

After the hen has gone broody, allow her to sit for two or three days, or until she has demonstrated that she will stay with the nest, before moving her to the battery. Always move broody hens after dark. Prepare the nest by scooping out a place in the ground and lining it with straw. Warm a few eggs and place in the nest. After the hen has sat on these eggs for a few days, the turkey eggs may be placed under her. Turkey hens handled in this manner seldom cause any trouble. Provide some grain for feed in each compartment. Some green feed is necessary also. Equip each compartment with a drink fountain, which is an open can hung by a nail. Provide clean, fresh water each day.

Equipment is Necessary: The loss of poults each year is very heavy. The cause for most of the loss is lack of proper equipment. Suitable equipment is not expensive. One good turkey will bring enough money to buy the material to build the necessary equipment for one hen. Losses of several hundred poults from a flock in a year are not infrequent. It is economy to build equipment and save the poults.

Number of Eggs for Hen: Eight to ten eggs for chicken hens and thirteen to eighteen for turkey hens are enough, depending upon the size of the hens, the season of the year and the nest accommodations. Many poor hatches are the result of hens not being able to keep their eggs warm.

Set four or five or more turkey hens at one time and set a few chicken hens at the same time, or an incubator or both. By setting in this manner, it will be possible to give each turkey hen her capacity of poults to brood.

Remove Poults as they Hatch: If poults are left under the hens until the hatch is complete, many of them may be crushed. They may get out of the nest and attract neighboring hens and cause them to leave their nest. Take the poults to a warm room and keep them where they are certain to be warm and comfortable until the hatch is completed.

BROODING

Turkey hens are the best mothers for poults. Some artificial brooding is being done. The principal objection to artificial brooding of poults is that of inactivity during the growing season and the ill results that accompany mass brooding. It is apparent that turkeys do much better when they are kept moving. Chicken hens are very poor turkey mothers. Artificial brooding under proper condi-

tions, may be made satisfactory. However, when artificial brooding becomes a safe practice for general use, turkey meat probably will cease to be a luxury. Poults are more inclined to crowd than chicks when in brooders. They also are slower to learn to take to the brooders. Consequently, it is necessary to brood them in smaller units. Two hundred are as many as should be brooded in one unit. One hundred or less is a safer number for the beginner.

The furnace type brooder system, a plan of which is shown in University of Idaho Extension Bulletin No. 63, entitled "Brooding and Pullet Development," is especially suitable for brooding poults. If artificial brooding of poults is at all feasible, this sytem is especially adaptable. Any size unit can be provided and at small cost. These brooders are efficient, cheap and easy to operate. Small units can be moved at practically no cost and with but little trouble. They can be placed at convenient and practical distances. The distance between units must be great enough so that broods will not mix. Heat and ventilation requirements for poults that are being artificially brooded are about the same as for chicks. For the purebred breeder, artificial brooding is at times very convenient. The commercial grower may find it quite convenient to start early hatches artificially, especially when hatched in incubators. However, there usually are enough broody turkey hens to take the early hatches by the time they are hatched.

Turkey mothers are much more satisfactory and should be used if at all possible. Turkey hens usually will take a brood, even though they have been broody but a few days. Confine the mother to a coop and allow the poults to run out and in at will. A coop that affords some freedom of movement for the mother is best. A very serviceable plan is shown in figure (5). Set the tight part of the coop quartering to the storm. Move the coop often to avoid contamination. The sage brush is a good location for brood coops. The ground is free from vegetation. If the broods are located in the fields, they should be on land where the grass is pastured or clipped short. Poults running out in tall grass or in tall weeds become wet and chill easily. They should not be on land that is being irrigated or allowed to run in high grain until they are feathered. Space the coops far enough apart so that the broods cannot mix. Some turkey hens will steal all of the poults that will stay with them. Twenty to twenty-five poults are enough for one hen. The danger in too large broods is that they be-

come crowded under the mother and some may become over-heated.

Just how long the hen is to be kept confined to the coop must be determined by the season and the weather. If the weather is favorable she may be turned out a short time during the middle of each day when the poults are a week old. After that, should the weather be quite warm, she may be out most of each day. It may be necessary, however, on account of inclement weather, to confine her to the coop for several days, even after she has had freedom for some time. Keep the poults dry and warm or the loss will be heavy. It is never safe to turn hens loose with their brood until the poults are completely feathered. Drive the hen into her coop each night. If they have been properly trained, by driving in each night, they will be but small trouble to get into the coop at roosting time. Close the coop at night to prevent loss from predatory animals.

Equip each coop with a canvas with which to cover the open side during heavy rains or at night when the weather is cold or extremely damp. Work eyelets in the edges of the canvas. Drive a nail in the frame of the coop for each eyelet. Space the nails so that it will be necessary to stretch the canvas when it is being placed on the coop. Use the canvas covering only when necessary.

FEEDING

First Feed: The first requirements of a poult are heat and rest. Nature has provided the yolk of the egg as nourishment for the first seventy to eighty hours of its life. To feed before the yolk has been absorbed is an interference with nature's plan. It is not safe, therefore, to do much feeding until the poults are from sixty-five to seventy-five hours old. Feed poults sour skim milk after the first full day with the mother or in the brooder house. This practice may be continued until they are from sixty-five to seventy-five hours old when they may be fed some concentrated feed.

The temptation to feed too soon must be controlled as heavy losses are sustained from early and over feeding. Plenty of sour skim milk or buttermilk, as has already been suggested, is sufficient for the first sixty-five to seventy-five hours and is a safe feeding practice. For best results sour the milk until it is nearly or entirely clabbered. A good first feed is breakfast rolled oats or hull-less oats. In the morning of the first feeding day, or when the poults are from sixty-five to seventy-five hours old, give them a light feed. The amount to feed is what they will consume in ten

or fifteen minutes. Place the feed on pie tins or paper pie plates or cardboard or some smooth surface. Feed poults with mothers just outside the coop. Remove the platters after each feed. Avoid filth and contamination. Feed five times during the day. Do not over feed. The last feed in the evening, however, must be sufficient to produce contentment. Continue to feed five times each day for about two weeks. Increase the amount of feed each day, being careful to avoid over feeding at any time. Keep the poults eager for each feed, but be sure they go to roost with full crops. Continue to feed sour milk and be certain that the drink founts are cleaned each day.

After the second feeding day, add some whole wheat or cracked corn or both to the grain ration. Continue to increase the wheat and cracked corn in the ration until the ratio is equal parts of cracked corn, wheat and rolled oats or hull-less oats. If hull-less oats are not available it may be necessary to make corn and wheat the entire scratch ration after the first two or three weeks as rolled oats may be too expensive to include in the ration. However, oats are very beneficial in the ration for growing turkeys. The oats may be supplied in a dry mash. The more liberal the amount of yellow corn in the ration the more likely the poults are to develop satisfactorily.

Feeding dry mash is a good practice. Begin feeding mash when the poults are ten days old. Feed the mash in chick mash hoppers. Set the hoppers before the poults for about half an hour the first day. Increase the time each day that the mash is left before them until the eighteenth day, when it may become a continuous feed. Feeding dry mash is not a general practice. However, if it is done, the poults will make a much more rapid growth. Many of the physical defects and bone deformities in turkeys are the result of a poor start when they were poults. Give the poults a good start and keep them growing.

When the poults are two and a half weeks old, grain may be fed four times each day. From this time on, the feeding times each day may be reduced, until at between four and five weeks old when two grain feedings each day are sufficient.

Feed some chick sized charcoal from the beginning. At first, feed the charcoal in platters on the ground, or in litter if in a brooder house, and in the grain mixture. When the mash feeding is started, include the charcoal in the mash formula. Some powdered oyster shell or calcite rock must be included in the formula.

It is apparent that poults cannot stand as concentrated a ration as chicks. Starving is a poor practice. Bulk in the ration avoids both the common starving practice and the ill effect of over feeding on highly concentrated feeds. Turkeys require green feed. Feed it in great quantities. Make green feed a liberal portion. Feed it daily and in liberal amounts until certain an ample supply is secured on the range. Green alfalfa, dandelions, slawed cabbage, lawn clippings and onion tops chopped fine are excellent green feed for poults. If green feed is scarce, feed cod liver oil. It is good practice to feed cod liver oil to poults even when the green feed supply is ample. Feeding cod liver oil is a liberal insurance against leg weakness, bone deformities and many other ailments common to turkeys as a result of under nourishment when poults. Cod liver oil is fed in the scatch feed. Mix one pint with each 100 pounds of scratch feed. Mix thoroughly so that the oil will be evenly distributed. A ten day to two weeks supply at this season is as much as should be mixed at one time. One teaspoonfull to 3 pounds of scratch feed is a suitable proportion for small amounts. Cod liver oil of dependable quality can be had from dealers in Idaho at two dollars per gallon in small quantities and cheaper in lots of five gallons or more.

Feed the poults with mothers outside the coop, both the milk and the concentrated feeds. Feed corn to the mothers. If corn is not available, feed small grains in a box or can attached to the wall of the coop and up off the ground so that the poults cannot eat it. Feed the mothers plenty of green feed, also oyster shell or calcite rock.

Get Poults on Ground Early: Get poults that are being artificially brooded on the ground by the time they are one week old. Drive them out and in the house several times each day for the first few days. It may be necessary to drive them back into the house immediately after they have been driven out, if the weather is inclement. Driving them back and forth teaches them the habit of going in and out. Do not leave them out until they chill. Drive them out, however, even though the weather may be uncomfortable. If the room is comfortable, they are not likely to stay out in the cold to chill. However, poults may be a little more difficult than chicks to teach the habit of going in and out.

FEEDING SCHEDULE

First Week: The second day after hatching, give sour skim milk or buttermilk and charcoal. When sixty-five to seventy-five hours old, feed breakfast rolled oats or hull-

less oats, charcoal and green feed. Feed sour skim milk or buttermilk the same as on the second day. Add some whole wheat and cracked yellow corn to the oats after the first feeding day. Feed milk, charcoal and green feed same as before. Feed green feed in liberal amounts. However feed no more green feed than the poults will consume. At night give a hearty feed of grain.

Second Week: Increase the amount of corn and wheat in scratch feed. Prepare a mash as follows: Ten pounds bran; five pounds yellow corn meal; five pounds oat flour (whole oats ground fine); half pound chick size charcoal; one pound of granulated bone; half pound powdered oyster shell or Calcite rock. If corn is not available or is too expensive, barley meal may be substituted, providing sour milk and cod liver oil are being fed. On the third day of this week set the mash hopper before the poults for one half hour. Each day increase the mash feeding time until the fourth or fifth day of the third week when the mash may become a continuous feed. Feed the grain five times each day as formerly with hearty feed at night. Feed milk, charcoal and green feed as formerly. Get brooder poults out on the ground for a short period each day. If the weather is favorable, they may be left out of doors for an hour or even longer during the warm part of the day. If quite warm and dry, they may be out most of the day.

Third Week: The scratch feed may consist of equal parts of hull-less oats, cracked corn and whole wheat with the same mash as for second week. On the third or fourth day of the week, begin feeding scratch four times each day. Give a liberal feed of scratch at night. Feed milk and green feed as before. Charcoal in ample amount is included in the mash.

Fourth Week: Use same feed formula as for third week. Toward the end of this week, the scratch feeding periods may be gradually reduced, beginning during the fifth week with two scratch feeds each day.

If hull-less oats are not available, the breakfast rolled oats may be omitted from the scratch feed, beginning any time during the third week. The formula in this event may consist of equal parts cracked yellow corn and whole wheat. Add a little whole corn to the scratch during the fourth week and gradually reduce the amount of cracked corn. Under extreme conditions, the corn may be omitted after the fourth week. However, if corn is omitted cod liver oil must be fed. The poults must have a good start. If skim milk or butter milk is not available, wet curd may

be used as a substitute. Some of the creameries of southern Idaho are now supplying poultrymen with wet curd at reasonable prices. If neither milk nor wet curd is available, semi-solid milk may be fed. Semi-solid milk can be obtained through most poultry supply houses or from the large creameries. If milk is not available in any form, a mash formula containing meat or fish meal is necessary. Mash formulas containing meat or fish meal, when milk or curd are not available, are as follows: Twelve pounds bran; five pounds corn meal; five pounds oat flour (whole oats ground fine); one pound meat or fish meal; one pound granulated bone meal; one pound granulated oyster shell or calcite rock and half pound chick size charcoal. Developing mash beginning with the fifth week should be the same as before, except an increase in the meat or fish meal from one pound to two.

Feed formulas may be varied to suit local conditions. However, corn is necessary to obtain best results and the corn should be the yellow variety. If sour milk is fed through the growing period, better developed turkeys will result. In many sections of Idaho corn is not always available at reasonable prices. Under such conditions, it may be necessary to feed small grains, such as barley, oats and wheat. If milk is available, the small grains may be fed with good results. Some of the best turkeys grown in Idaho are fed on milk and barley. Milk should be available any place in Idaho where turkeys are grown. If barley is the feed for turkeys, crack it for the poults and steam roll it for the older ones. Turkeys that have had plenty of sour milk and green feed, some yellow corn, cod liver oil, bone meal and oyster shell or calcite rock in combination with other common grains through the growing period, will show satisfactory development and finish and the percentage of deformities, such as crooked breast bones, will be small.

It is never a safe practice to give wet and sloppy feeds. Hard boiled eggs ground and mixed with bread crumbs or stale bread soaked in milk or similar moist or wet feeds are likely to cause digestive disorders. Dry feeds with sour skim milk as a drink are much better for poults and are much safer as a feeding practice.

Get Poults on Range: When the poults are fully feathered and the weather becomes settled, they must be permitted and encouraged to range freely. If necessary, drive them away from the brooding ground. Confine them to the coops at night for the first few days or weeks, depend-

ing on the weather and other conditions. Should it be desirable or necessary to transfer them to entirely new range, move the coops. The coops may be necessary for shelter for several weeks because of sudden storms. It pays to have the coops handy so that the turkeys can be gotten under shelter quickly on the approach of heavy storms.

Feed on Range: Feed growing turkeys some grain each day while they are on range. Grasshoppers are good turkey feed but are not sufficient. Some grain is necessary to sweeten the crop and the digestive tract. Feeding the grain evenings will encourage the turkeys to assemble for the night. If there are plenty of grasshoppers, crickets and other bugs and insects, mash feeding on the range is unnecessary. Many poor market turkeys are the result of starvation while on the range. Number one turkeys bring the most money. Feed is required to produce them. The good turkey grower is a good feeder.

Provide Drink: Growing turkeys must not suffer on account of thirst. Thirst retards growth. If ranging on the desert, provide troughs and place them conveniently for the turkeys. Move the troughs as often as necessary to accommodate the turkeys. Water is sufficient unless the desert is destitute of insect life, when some sour milk will help. In the absence of both milk and insect life, feed the developing mash in place of the grain. Whether the drink be either milk or water, be sure that the supply is adequate, fresh and clean. Keep the drink troughs clean. Turkeys should not be permitted to drink stagnant water. If irrigation ditches are the source of drink, keep the water moving. Stagnant pools about the barnyard and other places on the farm are the source of many disorders and diseases of turkeys.

Green Feed: Green feed should be taken to the range. The natural supply there may be quite inadequate. Chopped green alfalfa is good. Swiss chard, spinach and rape are satisfactory and can easily be grown in quantity. Feed green feed in large quantities every day unless the supply is ample on the range.

Start Finish Early: Turkeys are grown principally for the Thanksgiving and Christmas trade. In order that they may be ready for the Thanksgiving market, they must be hatched early, kept growing and the finish or fattening must be started early. Begin to bring them in off the range about October first or soon after harvest. Do not force them in. Gradually increase the grain

each day and feed toward the stubble fields. Do not take turkeys abruptly from the range to stubble fields where there is any great amount of shattered grain. The abrupt change from old grain to new is the cause of diarrhea and other fall disorders. An ample supply of old grain should be carried over each year to get the turkeys well started on the finishing feeds, so that the change from old grain to new may be made gradually. When turkeys are going on to stubble fields, feed liberally in the morning near the roosting grounds, and the change will be more gradual and much safer.

Feed While on Stubble: A very large flock of turkeys will glean a stubble field much quicker than ordinarily anticipated. It is a good plan to supplement the stubble feed with threshed or shelled grain. Encourage the turkeys to range by feeding far out on the field. Continue to increase the feed until they are on full feed at least one month before the first market period. The market periods in Idaho are two to three weeks before the holidays, Thanksgiving and Christmas. There also is a January demand for a small volume of turkeys.

Yellow corn is the best feed. Very fine turkeys, however, are grown and finished in Idaho by feeding barley and sour skim milk. The barley is steam rolled and fed in long troughs. The troughs are on legs. The plan for a good feeding trough is illustrated in Figure 2. The sour milk is fed in troughs of the same type as those used for feeding barley. Sour skim milk is beneficial in any combination of grain ration. A location out on the field away from the farm buildings is best for a feeding ground. Do not feed continuously on the same spot. Shift frequently to avoid filth and contamination. Turkeys do not feed well on muddy ground or when the feed troughs become filthy. The danger from disease also is great. Frequent feeding is much better than one feed for the day. Hopper feeding may be practiced satisfactorily but frequent feeding is safer and will produce a more rapid and better finish.

Very often, turkeys do not feed well during early fall. The finish, therefore, is slow. Sameness of feed is usually the cause.

Ground grains, containing five per cent bone meal and five per cent tankage or meat or fish meal will improve the appetite and hasten finish. Feed cod liver oil, also; the formula being the same as for breeding stock.

KILLING AND DRESSING

Kill Finished Stock: Select carefully and kill only finished stock for each market period. Do not guess but examine each bird. Birds that are not finished should be fed for the next pool or market date. Poor finish affects an injury in two ways. (1) The value of the stock is less; (2) The reputation of the community is injured. A longer feeding period will increase the value of the stock many times more than the cost and in addition will improve the reputation of the community.

The finish may be determined by the plumage, color of skin and plumpness of the body. Any turkey that has pin feathers, is not fat and is difficult to dress and may be graded as a second. When the wings become quite yellow on the underside and the birds show liberal yellow on the back, they are ready to kill, providing they are in full feather. Examine the breast and thighs. If they are well covered with firm flesh, the birds are ready for market.

Starve Before Killing: The gizzard and intestines must be completely emptied before killing. The quality and flavor of the carcass is impaired if there is any feed in the bird when killed. Feed lightly the evening before killing and give no feed the morning when killed. A full drink of water in the morning may cause the feathers to loosen.

Catching: Confine the stock to a small corral or enclosure. A large shed is ideal. Build a catching crate four feet wide, ten feet long and four feet high. Use wire netting for the side and cover the top with lumber. Build the crate high enough off the ground so that the birds may be caught without stooping. Build an inclined chute leading from the enclosure to the catching crate. Cover the chute so that the turkeys cannot fly out. The chute should be high enough to accommodate a man when walking. Build a door in the side of the crate from which to catch the turkeys. The object in building the crate low is to prevent the turkeys from flying when caught. Many bruises are made on carcasses when catching to kill. Cover the floor of the crate with straw. Catch the birds firmly by both legs. Draw the legs from under them, allowing the birds to fall gently on their breast. Drag them from the crate feet first. A hook is necessary when catching in a large space. The plan for a home made hook is shown in Figure 6. Get the hook over both legs when possible before attempting to down the bird.

Hanging: Fasten a strong cord or small rope to a rafter or some strong support. Tie a wooden lug to the end of the

cord or small rope as shown in Figure 7. The turkey is suspended by throwing the cord or rope around the legs, just above the feet. The lug binds between the legs and the rope. This plan is rapid and secure. Wire hooks are used also. The wire is bent to provide a hook for each leg. The hook is supported and suspended in the same manner as the lug. Use number four wire.

Sticking: Take the head of the bird in one hand. With a sharp, long and thin but strong bladed knife, cut the arteries in each side of the mouth, on either side of the throat. After the arteries are cut, thrust the blade deep into the brain. This is done through the cleavage in the roof of the mouth or through the eye. The bleeding must be thorough. If not, the blood will clot in the neck. Red spots on the body are the result of poor bleeding. Poorly bled turkeys grade second to culls. The puncture of the brain is for the paralytic effect, which causes the feathers to loosen. The sticking must be thorough. Thrust the blade deep into the brain. When the sticking is thorough, the bird will indicate it by the quiver of the body.

Weighting Beak: A dry cell frequently is used to weight the beak. A small pail, however, such as a five pound lard pail, is best. The pail will catch the blood and prevent splashing and soiling the carcass. Equip the weight with a hook to insert into the beak as shown in Figure 8. Place a small stone in the pail for weight.

Dressing: As soon as the bird is stuck and the weight is hung, start picking. Pluck the stiff tail feathers first and the flight feathers from the wings next. Immediately start plucking the feathers from the legs and continue picking down toward the head of the carcass.

Pluck the feathers, upward, do not jerk down except on the back where downward plucking may be done with safety. Pluck rapidly, removing small bits of plumage with each movement. The temptation to speed by removing large quantities of feathers at each movement must be overcome. The danger in speed is torn places in the skin. A good practice is for one picker to rough and another to finish. Roughing is plucking the coarse feathers. Finishing is the plucking of the down and any pin feathers that may be on the carcass. Leave no feathers on the legs, neck or wings except a few stiff ones on the last joint of the wings. Feathers must be removed from the head. If there are any rents in the skin, squeeze together and sew with clean white thread while the carcass is yet warm.

Conveniences: Rapidity in each operation in killing and

dressing is essential to insure a clean and satisfactory job. Provide each picker with a table or bench upon which to lay his knife and weight. Locate the catching crates as near the pickers as possible. Remove the birds to other hooks or hang supports to pin and finish. Hanging is safest to prevent bruising the carcass when finishing. If the birds are laid on a table to finish, cover the table with a thick, clean cloth to prevent soiling or bruising and roughing the skin.

Cooling: Prepare racks upon which to hang the dressed carcasses to cool. Make the racks substantial. Place the racks under cover properly enclosed so that the carcasses will not be damaged by weather or animals. Plenty of opening for air movement should be provided so that the cooling will be thorough. Hang the birds by the legs. Hang them so that they will not touch the wall, posts or each other. The cooling must be thorough, yet there must be no freezing. Wrap the heads before loading. If the heads are wrapped there is less likelihood of blood stains on the carcasses when they are being hauled to market. The carcasses must be thoroughly cooled before boxing. Graders test all doubtful carcasses with a thermometer for temperature.

Hauling to Market: Line the conveyance with clean material to prevent soiling and bruising of carcasses. Pile the load tightly to prevent jostling. Cover the load with a clean canvas.

DISEASE

Turkey mortality is heavy each year. Most of the diseases common to turkeys may be prevented by using proper sanitary measures. Strong, vigorous breeding stock and wide range combined with nourishing feed, will prevent more turkey ailments and diseases than medicine can cure.

The temptation to use slow maturing, unthrifty birds for breeders must be overcome. The strongest individuals are the safest and best breeders. Eliminate all birds from the breeding flock that have shown any sign of weakness. Weak breeding stock produces weak offspring. The offspring from weak stock is likely to be weaker than the parent. Slow development is a certain indication of low vitality. Many poults are hatched that never have a chance to live on account of the physical condition of the parent stock.

It seems that range is necessary to secure satisfactory

results. Small flocks may be .grown on limited range Even with small flocks grown on restricted areas, rigid sanitary measures are necessary. The birds must have access to the farm and be forced to use it. The industry will endure and be constant in those sections and under those conditions where range is ample.

Many turkeys starve when on range. They may not die, but develop slowly and become low in vitality because of insufficient feed. Breeding stock is often undernourished. Disease resistance is low in any animal when it is underfed. Turkeys are easy to neglect.

Outbreaks of disease may occur, even under the best of conditions. Animals and birds may carry disease from one flock to another. Turkeys are susceptible to most of the diseases common to poultry. An attempt to cover many of them will not be undertaken in this bulletin. Good references are University of Idaho Agricultural Experiment Station Bulletin No. 126, "Tuberculosis of Poultry"; U. S. Department of Agriculture Farmers' Bulletin No. 1337, "Diseases of Poultry"; University of California Agricultural Experiment Station, Berkeley, Circular No. 251, "Common Diseases and Parasites of Poultry in California." A good text is "Diseases of Domesticated Birds" by Ward and Gallagher, published by the MacMillan Company, New York City.

Blackhead: Blackhead is very common among turkeys. The cause of the disease is a small parasite found in the intestines and liver. The birds become infected by eating contaminated feed, soil, water and the droppings of diseased birds. The parasite is likely to be present on soil that has been used by diseased birds. The greatest danger of infection is when the birds are between the age of two weeks and six months although birds of any age are susceptible.

Symptoms: The sick birds lag behind the flock, are droopy and are often affected with diarrhea. The head may or may not be dark. The livers may be covered with yellow, circular spots. Ulcers may be found in the walls of the blind pouch of the intestines. Lesions are not always found in poults which die from blackhead. Birds that have had blackhead and recover usually are carriers of the parasite as long as they live and are likely to transmit the disease to the young turkeys. Turkey growers must be very careful when buying breeding stock that they do not get birds that have had the disease as it is in this manner that otherwise healthy flocks are often infected.

Feed poults sour milk from the start. Brood on uncontaminated soil and employ strict sanitary measures to prevent outbreaks of the disease. Should infection occur, transfer the stock to soil that has not been used by turkeys. Calomel and castor oil seem to be effective for blackhead. Dosage for poults is a one-fifth grain calomel tablet in a teaspoonful of castor oil for each sick bird, two-fifths grain calomel tablet in a small tablespoonful of castor oil for half grown turkeys and a three-fifths grain calomel tablet in a large tablespoonful of castor oil for mature birds. Feed crushed dry grains sparingly for a few days. One treatment usually is enough.

Powdered ipecac also is claimed to be effective. For prevention, feed ten teaspoonfuls of powdered ipecac to each one hundred poults in dry mash, twice each week from the time the birds are two weeks old until they are three months old. Five drop doses of tincture of ipecac three times daily to visibly sick birds is claimed to be a valuable treatment. Some growers feed one per cent tobacco dust in dry mash as a preventative. Sanitation, clean free range and proper proportion and amount of feed appear to be the most effective measures.

Nutritional Roup: Nutritional roup is often mistaken for diphtheritic roup. The symptoms are similar in that the face swells and there is a discharge from the nostrils. However, the roup odor is absent in nutritional roup. The cankers in the mouth constitute numerous splotchings of small cheesey pustules like patches in the mouth and throat. Roup canker accumulates in large patches. The cause for nutritional roup is lack of vitamin containing feeds, such as green feed, yellow corn and cod liver oil. A liberal supply of succulent green feed at all times will serve as a check against nutritional roup. Yellow corn also is a valuable aid. When green feed is not available, feed cod liver oil. The formula for feeding cod liver oil appears on pages 12 and 17 of this bulletin. In extremely dry weather or at times when green feed is very scarce, increase the cod liver oil to one quart for each 100 pounds of grain and mix according to previous instructions.

Sanitation: Most diseases may be prevented. Proper sanitation is a reliable preventative measure. Keep feed troughs and drink founts clean. Fill up all places in the land where turkeys spend much time and where water may form pools and become stagnant. Do not house turkeys. Prepare roosting accommodations according to the plan shown in Figure 1. Encourage turkeys to range far out on the farm away from the buildings and other poultry.

Worms: Many of the turkey ailments are caused by worms. Round worms and tape worms appear to be the most prevalent and the most destructive. Soil contamination is the common cause for worm infestation. However, worms often become troublesome under sanitary conditions that seem to be ideal. Tape worms require an intermediate host. The common house fly, and stable fly have been found to be some of the intermediate hosts for tape worms that affect poultry. It is apparent, therefore, that every precautionary measure is necessary to prevent infestation. If conditions appear ideal and yet grown turkeys do not thrive, treat them for worms. Growing turkeys will seldom require a worm treatment. Treating breeding stock for worms early in the fall is a good preventive measure.

Treatment: The turpentine treatment for pin or round worms is as follows: Mix one-half pint of turpentine with 8 quarts of wheat for each 100 turkeys. Do the mixing in a metal vessel or on a concrete floor. Keep the turkeys off feed from noon one day to the next morning. After the first treatment miss two days and repeat, then miss 10 days and repeat then miss 14 days and repeat.

The morning following the second treatment, administer a dose of Epsom Salts; one and one-half pounds to each 100 turkeys. Dissolve the salts in about the amount of water the turkeys will drink by 10 or 11 o'clock in the morning. Follow each succeeding treatment with salts in the amount as suggested for 100 turkeys. Should the number of turkeys be more or less than 100, have the doses graduated by a druggist. A little more or less would make no material difference, especially if fed to stock before they start laying. Fall is the best time to treat turkeys for worms.

Kamala is highly recommended as a treatment for tape worms. The dosage for adult turkeys is two grams for each bird, one and one-half grams for young hens and young toms, unless the toms weigh 25 pounds or more. Each bird is individually treated. Thorough tests of Kamala have been made and it is said to be entirely effective as a treatment for tape worms. Kamala is being prepared in capsule form as a convenience for poultrymen. Tobacco dust also is used as a worm treatment.

Nicotine Sulphate Capsules are highly recommended as a treatment for round worms. Purchase Nicotine Sulphate capsules from your druggist. These are made by mixing thoroughly 6.6 ccs. of nicotine sulphate with 16 grams of Lloyd's Alkaloidal Reagent and pack in No. 2 gelatine cap-

sules to weigh when filled 350 to 400 milligrams. One of these capsules should be forced down the throat of the fowl, making sure that the capsule is forced past the windpipe so that there is no danger of its entering the windpipe and suffocating the fowl.

Lice and Mites: There is probably no animal that is as easily effected when infested by lice as are turkeys. For that reason, they should at all times be kept free from lice.

Blue Ointment Treatment for Lice: To one part of blue ointment (30% to 33% mercury) add one and one-half to two parts of Crisco, or some other of the cotton seed oil products, such as Snow Drift. Do not use lard. Place the blue ointment in a warm room or in some place where it will soften to about the consistency of the Crisco. Care should be taken that it does not melt. Spread the Crisco on a smooth surface, such as tin or oiled paper, with a putty knife or a similar instrument. Spread the blue ointment over the Crisco and mix thoroughly. The ointment is then ready for use.

Apply to the vent an amount about the size of a pea. Do not smear in the feathers but apply to the skin. Part the feathers just back of the head and apply about the same amount to this section of the body. Be sure to get the ointment on the skin. For the first treatment, should the turkeys be quite lousy, it may be advisable to treat on the bare spots under the wings. Ordinarily this would not be necessary. Apply the treatment every six months regularly, whether the turkeys are lousy or not, and there will be no lice. Treat before the laying and hatching season.

The amount necessary for one turkey is sufficient for twelve or more poults. The ointment should be applied to the poults in the morning. A bright, sunny day is best. Poults should never be treated in the evening. The best time for treating old stock is after dark. Brooder poults should not require louse treatment before they are nearly grown.

If the breeding stock is free from lice, the poults with mothers should require no treatment while small.

Treatment for Mites: Mites are not likely to be a very great menace to turkeys. It is a good insurance to spray or paint the perches occasionally with some coal tar preparation, such as Kreso, Carsol Dip, Zenolium or Crude Carbolic Acid. If spraying is employed, use two parts kerosene to one of the coal tar preparation and spray thoroughly. Some people use the oil from the automobile crank

case, sometimes mixing it with kerosene and at other times mixing with a coal tar preparation. Setting hens should be dusted with some powder to prevent an infestation of mites.

Crooked Breast Bone: The cause of crooked breast bones is the lack of sufficient bone building minerals in the ration of the growing stock. This deficiency is probably more effective early in the life of the turkey than at any other time. A feeding schedule as has already been recommended in this bulletin is sufficient. Heredity may be a factor only to the extent that stock low in vitality is used as breeders. It is probable that the poults from weak breeding stock may be so low in vitality that they will be unable to respond to even the best of practices. The bones remain soft and are easily deformed.

Over-heating which is caused by crowding too many poults under one hen undoubtedly is the cause of much of the crooked breast bone. Over-heating or sweating reduces the vitality of the stock. Hens should be given no more poults than they are able to cover comfortably.

Turkeys that are hatched from strong breeding stock and have plenty of sour skim milk, good feed, green feed or cod liver oil, clean range and that have been comfortably brooded have little tendency to crooked breast bones.

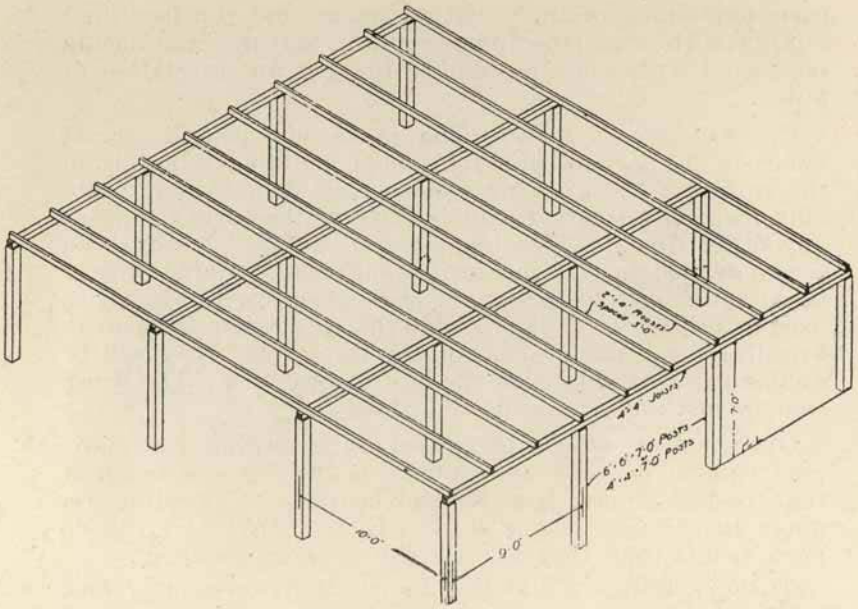


Fig. 1. Turkey Roost

CONSTRUCTION OF EQUIPMENT

Outdoor Perches

Figure 1 shows the outdoor perches for turkeys. If these roosts are to remain permanently in one place the 6x6 posts should be 9 feet long and set 2 feet in the ground. Otherwise, the posts may be set on the surface of the ground and must then be braced each way with diagonal strips of 1x4. The posts are set 10 feet apart one way and 9 feet apart the other way. They should either be set so that the tops will line up or else they should be sawed off evenly in order that the perches may all be level. 4x4 joists are laid across the tops of the posts the short way. 2x4 roosts are then set across the joists in the opposite direction at 3 feet intervals. The roosts shown will accommodate 200 turkeys and will require the following materials.

No. of Pieces	Size	Length
8	6x6	14 or 18, Depending on whether the posts are set in the ground or not.
6	4x4	18
30	2x4	10

Total 680 or 776 board feet.

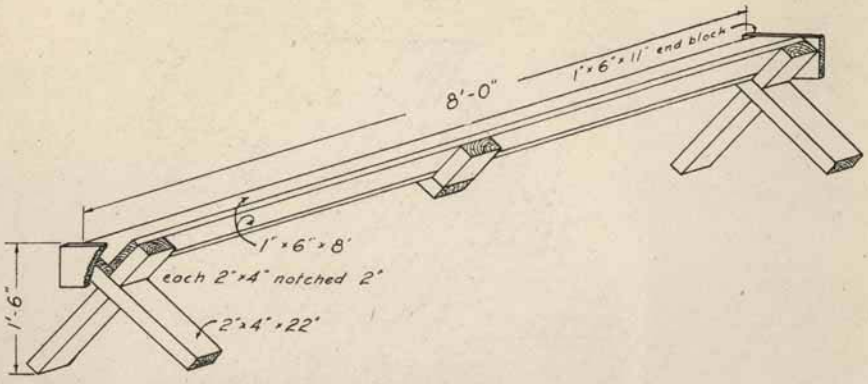


Fig. 2. Feeding Trough

Feeding Trough

A satisfactory feeding trough is shown in Figure 2. This trough requires 18 feet of 1x6 and 6 feet of 2x4. The top is left free from cross ties to make it easier to clean. The pieces of 2x4 at the center will prevent the trough opening up at the bottom. A wide base prevents tipping over easily.

Setting Pens

Figures 3 and 4 show the construction of the pens for the turkey hens when setting. The pens are made in two rows, each pen 3 feet wide and 8 feet long. The number of sections may be increased to suit requirements. To construct the pens, begin by nailing a 1x12 board along the bottom of the 2x4 uprights, 4 feet long in each corner of each pen. On the interior partitions and on the sides of the pens another 1x12 is fastened solidly to the 2x4s. At the end of each pen a 1x12, 3 feet long, is hinged to the bottom board in such a manner that it may be opened out when the turkey hens are put into or removed from the pen. From the upper edge of the two 1x12's which will be 2 feet above the surface of the ground, the partitions and outside walls are built up with 4 strips of 1x4 spaced 2 inches apart, making the total height 4 feet.

A space 2 feet wide over the outer ends of the pens is roofed over solidly with one inch lumber. The remaining space on the top of the pens is covered by 6 feet x 6 feet frames made up of 1x4 material covered with the inch mesh poultry netting. A small hole for the nest is scooped in the ground at the end of each pen under the solid portion of the roof. The section of pens shown in the figures

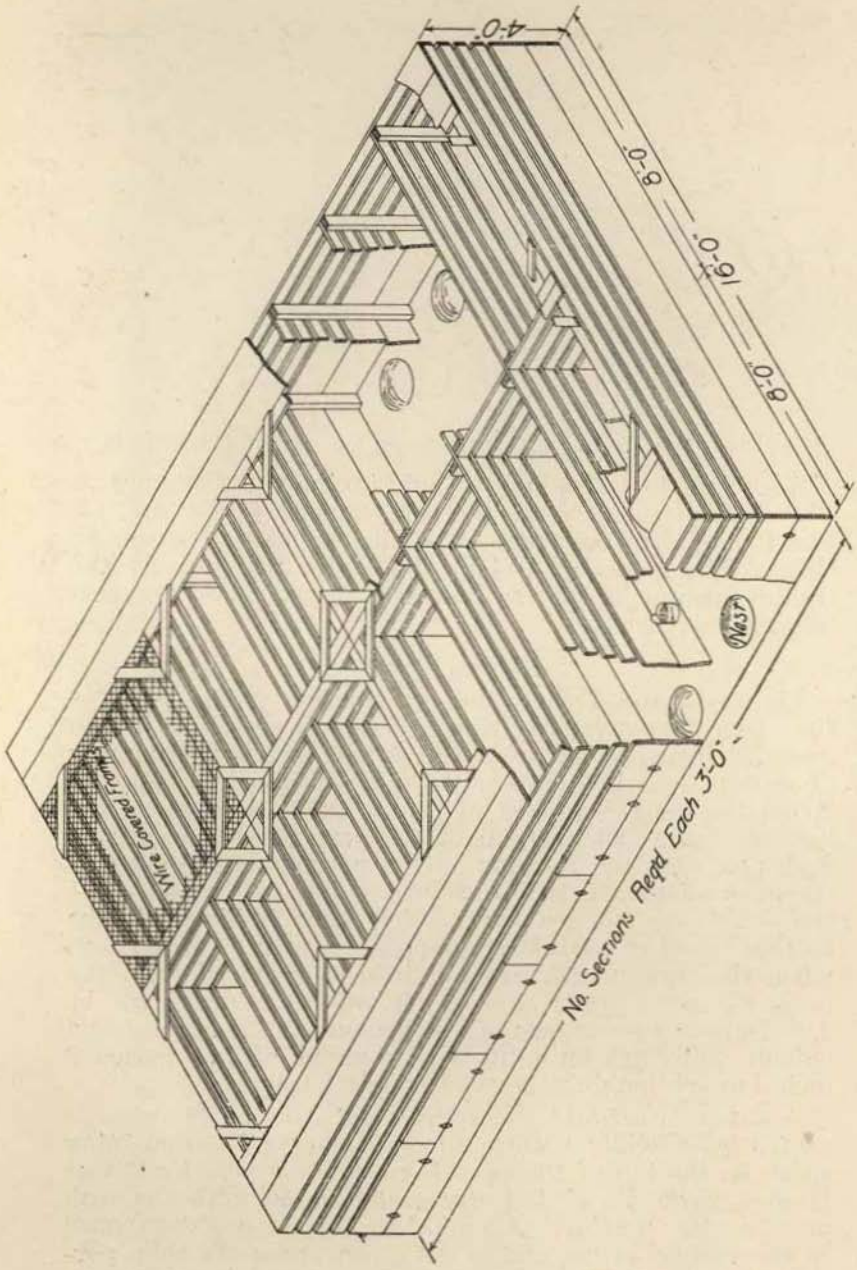


Fig. 3. Isometric View of Nesting Pens

will accommodate 16 turkey hens and will require the following materials:

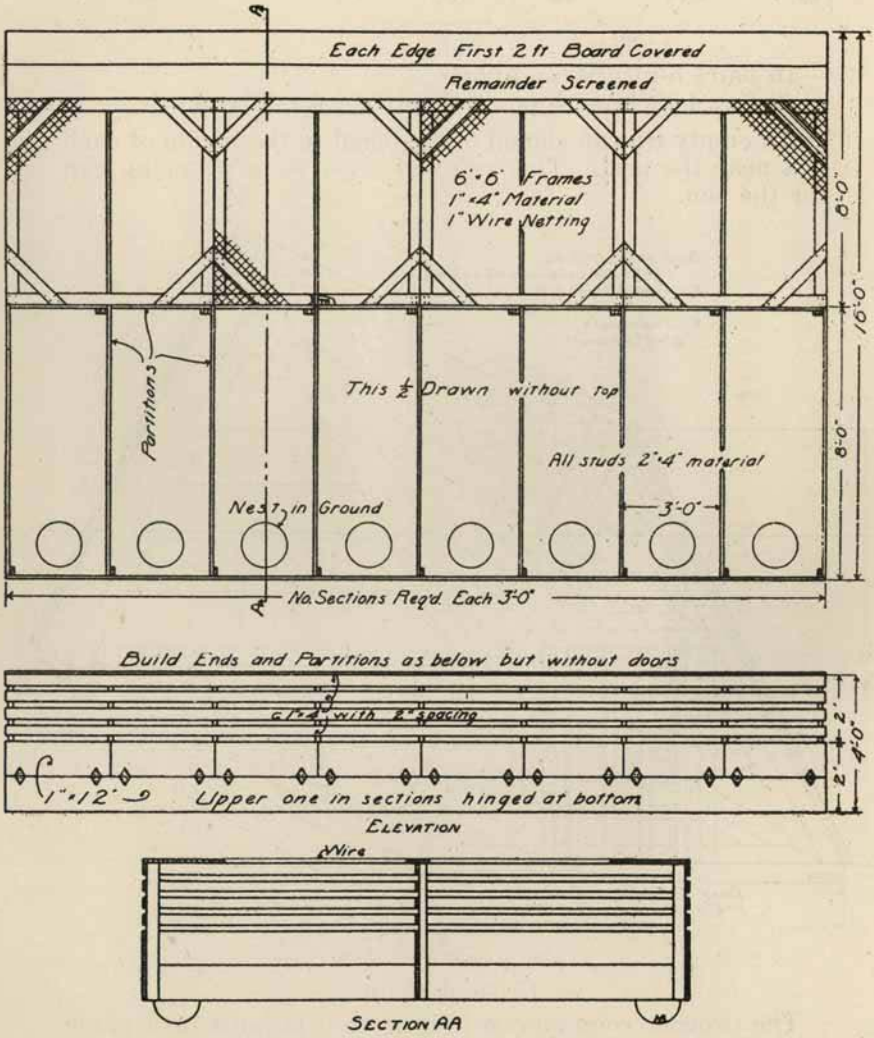


Fig. 4. Nesting Pens

No. of Pieces	Size	Length	Feet B. M.
9	2x4	16	96
18	1x12	16	288
20	1x12	12	240
40	1x4	16	214
40	1x4	12	160
	Total		998

16 pairs 5-inch strap hinges

48 feet 1-inch mesh poultry netting, 6 feet wide.

An empty tin can should be fastened to the inside of each pen near the nest. This can will serve as a watering cup for the hen.

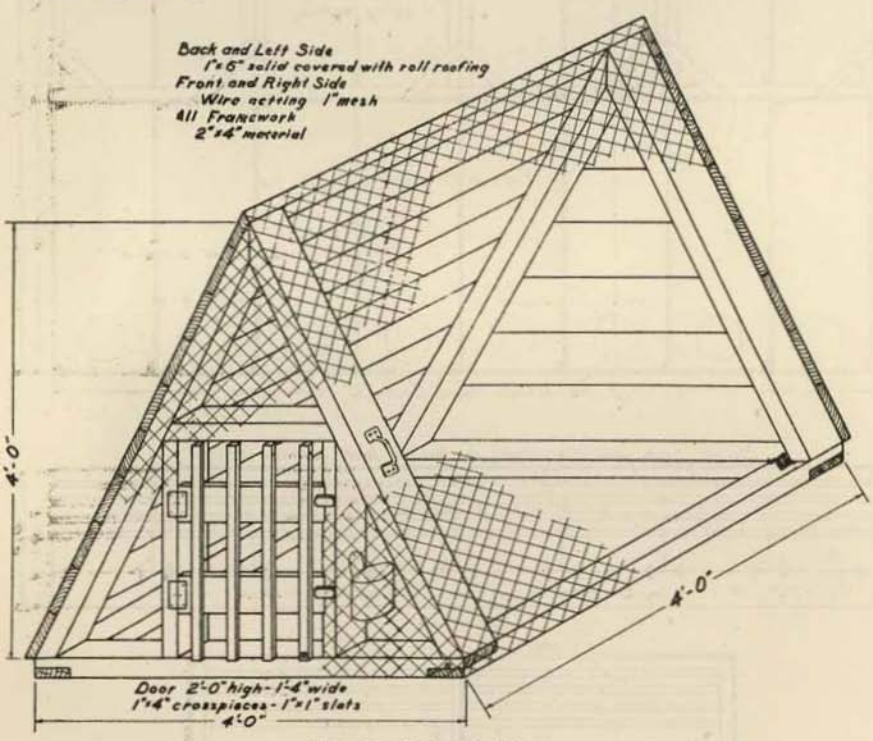


Fig. 5. Brooder Coop

Brooder Coop

The brooder coop shown in Figure 5 is built in a gable shape 4 feet square on the bottom and 4 feet high at the peak. The bottom is framed with 2x4s with half and half joints at the corners. The upright frames of the coop are

toe-nailed to this frame at each end. One side and the back of the coop are covered solidly with 1x6 lumber and rolled roofing so that there will be no wind or rain reaching the turkeys from these surfaces. The front and the other side are covered with poultry netting with one-inch mesh. A slat door is hung in a frame work at the front end. The door is 2 feet high and 1 foot 4 inches wide. It is made up of 2 pieces of 1x4 to which the hinges are attached and to which are nailed four 1x1 slats. The construction of this coop is shown very clearly in the figure. There will be required:

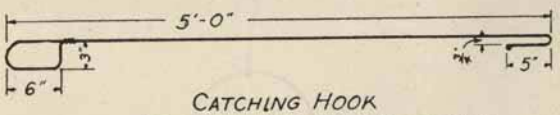
No. of Pieces	Size	Length	Feet B. M.
2	2x4	16	21
1	2x4	10	7
5	1x6	12	30
1	1x4	4	1
1	1x1	8	1
		Total	60

1 pair of steel butts 2x2

7 feet of 1-inch mesh poultry netting 4 feet wide

1 strip rolled roofing 14 feet long.

An empty can drinking fountain should be provided in the coop. A couple of handles fastened to the front corners will be convenient for moving the coop.



CATCHING HOOK
Made from No. 5 Steel Fencing Wire

Fig. 6.

Catching Hook

A satisfactory catching hook may be made of a piece of ¼ inch rod or No. 4 gage, wire, 6 feet long. The rod should be bent as shown in Figure 6. Care should be taken that no sharp corners or ends are left where they may break the skin of the birds.

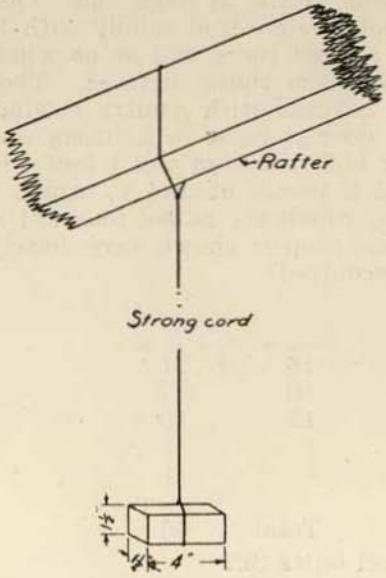


Fig. 7. Hanging Cord.

Hanging Cord

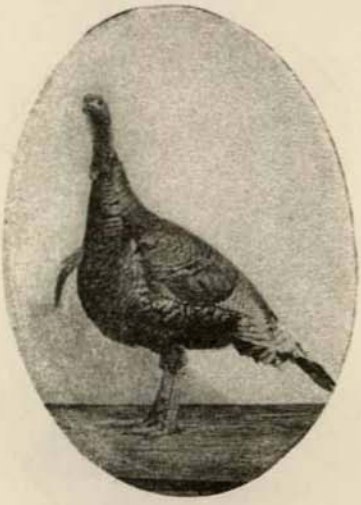
Figure 7 shows the arrangement of a wooden lug about 1½ inches square by 4 inches long, fastened to a piece of strong cord or small rope for hanging the turkeys to a rafter or other overhead support for dressing.

Fig. 8. Small Pail with Hook for Weight

Weight

A small hook made like the letter "S" may be used to hang a bucket from the turkey's head while bleeding. Figure 8 illustrates such a hook and pail. The hook may be made of No. 8 wire.

Bronze Turkey Hen



Bronze Turkey Tom