

PANTRY SUGGESTIONS

B-134



ON THE COVER

Mrs. W. I. Davis and her daughter, Dorothy, are selecting canned foods from their ventilated pantry. Mrs. Davis is an outstanding club member of the Woodland Acres Home Demonstration Club in Harris County. The picture was taken by David J. Morris, Farm Editor of the Houston Post.

PANTRY SUGGESTIONS

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GOOD STORAGE PLACES ARE IMPORTANT

FOOD retains more food value, a better flavor, a more desirable color and texture if it is stored in a **cool, dry, dark** place. Even though the food is canned, dried, or brined, some vitamins are destroyed by heat, light, and moisture. It has been found that "A" quality canned food becomes "C" quality food in a year's time if it is not stored properly; however, if canned foods are stored in a **cool, dry, dark** place, it may require several years to lose much of the food nutrients or change its appearance and flavor.

Heat is the most destructive factor

Experiments on fruit canned in tin revealed that when it was stored at 32° F. it takes eight times as long to dissolve the metal coating of the tin containers as it did when stored at 86° F. and four times as long when stored at 68° F. The ideal temperature would be about 40° to 50° F., but this temperature is almost impossible to attain other than in cold storage in most parts of Texas during summer months. Even though the ideal may be impossible, something can be done toward improving storage.

Spoilage may be caused by poor storage conditions

As described above, there is a simple chemical reaction of foods

canned in tin. It is not harmful but if food is stored long enough in warm places, enough metal will dissolve to cause "hydrogen springers", perforations, corrosion, and/or deterioration in color and flavor. If perforations and corrosion cause air leakage, the contents will spoil. Damp atmosphere aids heat in causing corrosion and rusting from the outside; thus bringing about a more rapid destruction of the tin container and eventually spoilage.

As far as the jar is concerned, the excessive heat and moisture deteriorates the rubber or rubber compound in the metal lids and the final outcome would be the same as in the tin can. In addition, light fades the color of canned foods in glass which indicates loss of some nutrients. In both tin and glass, temperatures between 100° F. and 130° F. aid the development of certain bacteria which cause flat sour spoilage. In case these harmful bacteria were not all destroyed by processing, the heat would then help them to develop and cause spoilage; whereas, if the food were kept cool, the bacteria would lie dormant and never cause the spoilage or be harmful in any way. Records show that there is 50 to 75 percent more spoilage during summer months than in winter. It has been shown also that foods canned during the hottest part of the day spoil more easily than when canned in the cooler part of the day.

Freezing may cause spoilage of canned foods

If food is stored in a place so cold that freezing causes the jar or can to burst or the seal on the container to break, the food will spoil. If the seal or container is not broken, when freezing occurs, there is no danger of spoilage; however, the food may become soft as a result of the freezing.

Dried foods must have good storage

As far as dried foods are concerned, moisture, air, heat and light are **very** destructive. In fact, it has been found that more food value is lost by improper storage of dried foods than is destroyed during the process of drying.

All foods need good storage

In brined foods, preserves, dairy products, grains, spices, and eggs, the four factors of heat, air, light, and moisture are destructive in temporary or long time storage. In cured meats and lard, heat and light not only destroy vitamins but aid rancidity. Moisture aids mold. Moisture and heat are the best helpers for insects which attack meat, grains, dried food, etc., causing much waste in pantry.

CHOOSE STORAGE PLACES WISELY

With these factors in mind, the selection and construction of adequate storage space depend primarily on the factor of heat first, moisture second, and light third. **Cleanliness** may be named

along with these three but it is assumed that wherever the location, the storage space can be kept clean if the owner so desires. Naturally, some places are easier to keep clean than others, but taking everything into consideration, an easily cleaned place would be the fourth factor involved. A fifth factor which might be ranked even more important from the standpoint of labor-saving would be **convenience** of the storage place.

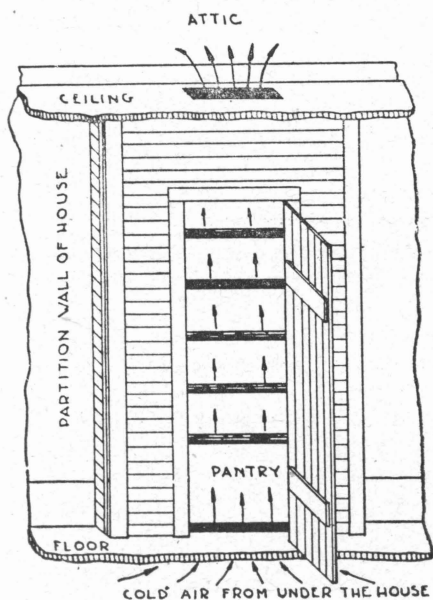
A cellar is the most ideal

A cellar may qualify most ideally for the first three factors in most parts of the state while it is usually considered that a pantry in the house is more convenient and easier to clean. It would be even better to have both—a cellar for large quantities and a pantry in the house for a week's supply.

A ventilated pantry is good

When it is impossible to have a cellar, the next most ideal place would be a **ventilated** pantry near the center of the house. Experiments have shown that it is possible to keep the temperature about 10 or more degrees cooler in a properly built ventilated pantry than in an ordinary room. If the room temperature averaged 85° F. in summer and the temperature in the ventilated pantry could be kept 75° F. or lower, it would be reasonable to believe that the stored foods would have a better quality or longer life than when stored at room temperature. Again convenience is a factor. Perhaps the

center of the house is in a hall, under a stairway or even in a bedroom. The most convenient place would be near the kitchen, and yet that is probably the hottest place in the house. If a ventilated pantry could be used for long time storage of foods and a smaller pantry or cabinet in the kitchen could be arranged for several days' supply, it would save many steps and much time for the homemaker.



VENTILATED PANTRY

For details on building a ventilated pantry see page 16.

The principle of the ventilated pantry is as follows: have an opening in the ceiling and floor; shelves arranged with slats or holes; and tight walls. The cool air from under the house passes through the floor opening, through the shelves, and as it gets warmer goes out into the attic.

Other pantries can be used

Where a ventilated pantry is not practical, an ordinary pantry can be made into a good storage place. Some houses are so constructed that it would be difficult to arrange a ventilated pantry. Often a family not owning its own home cannot afford or are not allowed to build a ventilated pantry in the house. In this case, the Texas 4-H pantry (Blueprint 165) may be most advisable. If this plan is used, build the pantry near the center of the house or on a north wall. It is so constructed that it can be moved from one house to another.

SPECIAL POINTERS FOR PANTRIES

Insulation is helpful in any type pantry

Insulation helps in any kind of pantry. In the summer, it helps to keep the hot air from coming in or the cool from going out. In the winter, the reverse is true. In the summer, the door of an insulated pantry should be opened at night and closed in the morning to keep a lower and more even temperature. In order to have better insulation, the following may be done:

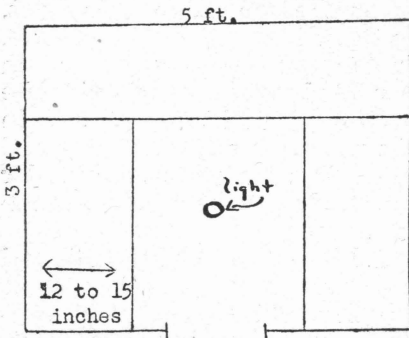
1. Make tight double walls and a tight fitting door. Some people fill the double walls with sawdust, wood shavings, straw, cotton, wool, moss or fluffy gypsum.
2. If double walls are impossible, the tight single walls which are less expensive will help.
3. Use beaver board, fiber board, rock board, corrugated paste board or even several lay-

ers of paper to line the closet if it is impossible to have tight walls otherwise. This is often used in an old pantry that is being improved at minimum cost.

4. Outside walls of the pantry may be painted with aluminum paint to improve insulation. The aluminum paint may be covered with canvas and paper without losing the insulating value.

Plan the size of the pantry

The size of the pantry varies according to the size and need of the family. A family of five usually needs about 500 quarts of canned food, some dried vegetables and fruits, some cured meat, some stored root vegetables, and some brined vegetables. In order to plan the amount of food needed by the family, use "Food and Feed Guide" No. L-21, and the conservation plan in B-85, "Home Canning of Fruits and Vege-



tables". If a pantry is 3x5 feet and has shelves on three sides, there is about 8 feet of shelf space on each row of shelves. If the ceiling is 8 or 9 feet high, about 6 shelves could be ar-

ranged. This would mean 48 square feet of shelf space. Usually 1 square foot of shelf space will accommodate 12 pints or 9 quarts or 4 half gallon jars or 24 No. 2 cans (stacked two deep) or 18 No. 3 cans (stacked two deep). Therefore, 48 feet of shelf space should accommodate at least 500 containers of food and have some space left for some small quantities of dried foods, crocks of brined food, cured meats, lard and probably a few root vegetables. Large quantities of potatoes and other root vegetables should be stored in mounds or outside storage houses or cellars.

What about the shelves?

Shelves 12 to 15 inches wide are more convenient than wider ones. Two or three rows of jars or cans are satisfactory. The distance between each shelf will be determined by the size of containers to be stored. If No 3 cans and quart jars are the most common size to be used, the shelves may be about 12 inches apart. This would allow No. 3 cans to be stacked two deep and quart jars one deep. If pickles and fruits are to be canned in half gallon jars, one or two shelves should be made far enough apart to place half gallon jars with about 2 inches above the jar. Don't waste space, though. If you have no half gallons, put shelves closer together.

Try adjustable shelves

Some homemakers like adjustable shelves. To make these adjustable shelves, nail cleats or

supports three or four inches apart on each end of the pantry. Then rest the ends of the shelves on these cleats without nailing the shelf to the cleat. If there are more small jars than large ones, put shelves closer together, similar to the way you adjust racks in the oven of the stove. This practice would be more difficult in a ventilated pantry, but it could be done by proper bracing or supporting.

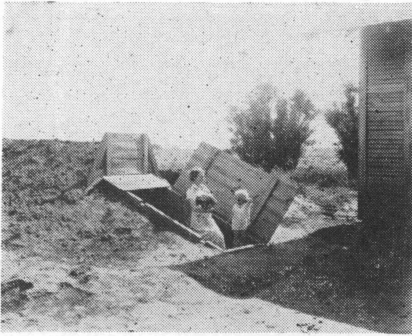
Make shelves strong

Be sure that shelves are braced or strengthened to hold the extra weight of the season's home-processed food supply. Shelves that are more than three or four feet long should be well supported especially in the center.

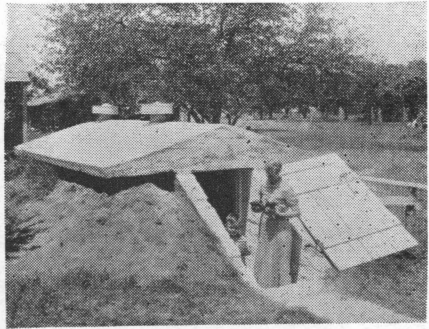
See page 13 for directions for building shelves for canned goods.

SPECIAL POINTERS ON CELLARS

A good cellar must be well planned and well built, but the efforts are worthwhile because it will last a lifetime if properly constructed.



Dirt and Board Cellar



Concrete Cellar

Dampness is the biggest cellar bugaboo

Among the more common causes of dampness in cellars are: (1) the land is flat or sloping toward the cellar wall; (2) lack of eaves-troughs; (3) failure to keep eaves-troughs and down-spouts in repair and free of leaves or other debris; (4) ground water close to or higher than the cellar bottom;

(5) leaky plumbing, especially water pumps in the cellar; and (6) condensation of air moisture.

Locate the trouble

If the land slopes toward the house, re-grading is the only answer. Of course, defective eaves-troughs and down-spouts can be cleaned out and repaired, usually without much expense.

Tile drain is the answer for high ground water

High ground water calls for a four inch tile drain along the outside at the bottom of the cellar wall. These are high in cost and labor if they are not placed at the time of building. Tile drains on the outside are better than any method applied inside. When the trench is open for placing the tile, there is a good opportunity to water-proof or plaster the outside surface of defective walls. Usually this is very necessary with walls of tile or concrete blocks. For more details see: F. B. No. 1572 "Making Cellars Dry".

Ventilation prevents sweating

Condensation or sweating frequently causes dampness which may sometimes be blamed on other factors. During warm weather, cellar walls are generally cool, often times below the dew point of the air in them. This leads to sweating. Good ventilation is the best remedy for this. See pages 14 and 15 for details on ventilating cellars.

Odors in cellars present problem

Proper ventilation will also prevent musty or disagreeable odors. Opening the cellar door at night and closing it in the morning during summer and vice versa in winter months will air the cellar and help get rid of odors. This practice also maintains a more even temperature.

Make cellars rodent proof

Good concrete cellars usually are rodent proof. Pole and board cellars may have to be lined with hardware cloth or small wire mesh.

References for construction or improvement of cellars

1. B-111, "Storage Structures and Home Storage Mounds."
2. F. B. No. 1939, "Home Storage of Vegetables and Fruits" (similar to B-111, a Texas Extension Service bulletin).
3. F. B. No. 1572, "Making Cellars Dry."
4. Blueprint 227, "Pole and Board Cellar" (inexpensive and quite satisfactory in dry climates).
5. Blueprint 62, "Concrete Cellars" (more expensive but more durable and rodent proof).
6. No. 228, "Storage Cellar with Concrete Roof—Part of Wall Plastered" (similar to 62 but less expensive. It is more suitable in dry soil).
7. Blueprint 202, "Smoke House and Storage Place" (more practical in a damp climate than a cellar).
8. F. B. No. 1772, "Use of Concrete on the Farm" (includes how to construct a concrete cellar).

ORGANIZATION OF PANTRY OR CELLAR



A Well Organized Cellar

A well organized pantry or cellar makes meal planning easier, looks better and is more convenient to use and clean.

Group foods two ways

Foods should be grouped in two ways (1) all of one kind should be placed together and (2) foods harder to keep should be stored on lower shelves where it is cooler. Shelves should be labeled so that it will be easy for any member of the family to find the kind of food wanted.

Suggested arrangement

1. If small quantities of potatoes, onions, pumpkin and fruit, such as apples, are to be stored in the pantry, they should be placed in ventilated bins or crates in the bottom of the cellar or pantry. These ventilated bins should have legs or props to allow circulation of air under and around them. Casters on the legs aid in moving the bins from place to place.

2. Carrots, turnips, parsnips, and beets may be stored in damp sand in boxes or crocks which can be arranged on the floor.

3. Crocks of pickles, lard or such may be stored on the floor or lower shelves.

4. Canned meat and cured meat stored in oil should be on a lower shelf. Any canned butter, milk, or peanut butter should be stored on lower shelves, also. Dried foods and cereals may be stored on the lower shelves. If a family has some of all these items, about two or three shelves may be used.

5. Canned vegetables should be on shelves just above meats. They may be grouped in two sections:

- a. Green and yellow vegetables
- b. Other vegetables

6. Canned fruits come next. They should have two divisions:

- a. Tomatoes, kraut, strawberries, and citrus
- b. All other fruits including fruit juices

7. On the next shelf above fruits the pickles and relishes may be arranged.

8. Jellies, jams and preserves may be placed on the top shelves.

9. If there's more space in the top of the pantry, empty jars or small pieces of equipment may be stored.

10. If the pantry or cellar is large enough, it is well to have places for equipment, jar lids, rings and other canning items; canning instruction; canning budget or plan; a record of food canned, etc. But, if the pantry is small, these things may be stored in other cupboards near the pantry.

11. If there is a baby in the family, a part of one shelf may be labeled "Baby Food". Or if there is a member of the family who requires a special diet, one shelf may be arranged for this purpose.

12. Some families like to have a part of one shelf used to store school lunch supplies.

HERE ARE SUGGESTIONS ON LABELING

Shelves:

If shelves are labeled according to the type of food placed on them, it will be easy for any member of the family to find the product desired. For example, on the meat shelf, there may be three divisions—"beef", "pork", and "chicken". On the vegetable shelf there may be

several divisions—such as beans, peas, carrots, etc. Each shelf could be separated into as many divisions as required for ease in selection of food.

The labels for these shelves may be made of light weight cardboard. The size would depend on the thickness of the shelf. If the shelf is one inch thick, the label should be one inch wide. If the label is made wider than the shelf is thick, it will get torn or knocked down easily. The wording may be printed in ink or crayon. The label might be tacked on the shelf with thumb tacks. The label may be painted on the shelf instead of the paste board label.

Containers:

Each container may be labeled. This label may include **name of the product, when canned**, and any other comment the canner wants to make concerning the method used in canning.

For jars small labels $2\frac{1}{2} \times 1$ inch may be placed about $\frac{1}{4}$ to $\frac{1}{2}$ inch from the base of the jar. For tin cans the label should be cut as wide as the can is long and long enough to wrap around the can and over-lap. The label should not be pasted to the can because glue promotes rusting.

Other Products

1. Dried foods may be packaged in small air-tight sacks or cartons which are labeled and then stored in large tin containers such as a lard can, large syrup bucket, or tight crock. If the dried foods are stored in jars or small tin cans, each con-

tainer should be labeled. Every time a container of dried food is opened, there is greater possibility of oxidation and insect infestation. Proper labels prevent unnecessary opening.

2. Bins or boxes that hold root vegetables or other stored vegetables should be labeled for convenience.

3. Cured meats that are wrapped should be labeled to prevent frequent opening to see what is inside.

Miscellaneous

1. Canned Foods

a. Have all containers clean when stored.

b. Tin cans may be wiped with a cloth which has been dipped in oil or white vaseline to help prevent rusting.

c. Check all canned foods occasionally for swelled or leaky cans. If there is any indication of spoilage, the food should be discarded.

d. Cans of stored milk should be turned upside down at least once a month to prevent the contents from becoming lumpy and thick. For preservation of milk and butter use:

MS-624, "Home Canning of Milk"

MS-625, "Preservation of Butter in the Home"

2. Dried Foods and Cereals

a. Foods dried in a dehydrator, stove drier or in the sun should be packaged while hot or if conditioned for several days, they should be heated to 140° F. to 150° F. for about 20 minutes and packaged in clean, air-tight

cans or cartons. Friction top cans (like syrup bucket) are very satisfactory. Jars with self-seal type lids are also good. Special bags for dried food may be used.

Reference on packaging may be found in:

C-170, "Drying Foods at Home"

AWI-59, "Oven Drying"

b. Dried peas, beans and grains

(1) These products may be heated and stored the same as dried foods described in a above if they are to be used only as food.

(2) If beans, peas or grains are to be saved as seed as well as for food, the following methods may be used:

(a) For every quart of beans, peas, etc., use 2 tablespoons of rotenone dust. Sprinkle on top. This does not affect germination of seed. It is not harmful to human beings or pets.

(b) Mix 1 part air-slacked or hydrated lime to 4 parts beans, peas, or grains and store in a tight container. This is not harmful.

(c) For large quantities of these products, carbon disulphide may be used. For other details read F.B. No. 1275, "Weevils in Beans and Peas".

(3) When weevils are found:

When weevils or other insects are discovered in food, all other food in the same pantry should be examined. Shelves should be washed thoroughly, especially the corners. Cans that

contained weevil-infected food should be washed and rinsed with boiling water and dried thoroughly before food is put into them again.

(4) Cereals

Flour, corn meal, oatmeal, cream of wheat and other cereals should be packed in tight containers if they are to be kept for a month or more. AWI-64, "Why Feed Insects", gives excellent material for storage of cereals and dried foods. Cereal cans should be cleaned, scalded and dried before adding fresh supplies.

3. Sugar, Spices and Coffee

Store sugar, spices and coffee in clean, dry, air-tight containers. This keeps sugar from lumping and keeps spices and coffee from losing their flavor and odor. It also keeps out dust, ants and other insects.

4. Cured Meats and Lard

It is not necessary to put uncooked, well-cured meats such as ham and bacon in the refrigerator, but they do need to stay in their wrappings in a dark, cool, dry, airy place.

References:

B-94, "Killing and Curing Pork"

AWI-32, "Protect Your Meat"

5. Kraut and Pickles

Follow directions for storing found in B-131, "Preservation of Vegetables by Salting and Pickling".

6. Root Vegetables

Small quantities should be stored in ventilated boxes in the pantry. It is good to have the boxes on casters or easily movable stands. Carrots, beets, parsnips and turnips may be stored in damp sand in crocks in the cellar or pantry. All root vegetables may be placed in outside storage mounds. For details study:

- (1) B-111, "Home Storage of Vegetables and Fruits"
- (2) Blueprint 5511, "Evaporated cooler for milk, eggs and vegetables"
- (3) MS-133, "Log Houses for Sweet Potato Storage"
- (4) U.S.D.A., Leaflet No. 106, "Prevent Storage Rot in Sweet Potatoes"
- (5) F.B. 1442, "Storage of Sweet Potatoes"

7. Pumpkin and Winter Squash

Keep pumpkins and winter squash in a dry, frost-proof place. Put them in rows on shelves so that they don't touch each other. The best temperature is about 50 to 60 degrees F. Sometimes it helps to hold the pumpkins and squash at about 80 to 85 degrees F. for about two weeks before storing them. This "cures" them and helps harden the rind of immature ones. It will also heal injuries received in handling.

8. Apples and Pears

Apples need a cold, moist place for storage. If the cellar is

too warm, apples could be stored in straw in an outdoor pit, or kept covered on an outdoor porch or in an unheated garage until heavy freezing. Apples probably keep better in boxes or bushel baskets because they need moisture. They absorb an unpleasant flavor from potatoes or other vegetables if they are stored nearby. If apples must be stored along with vegetables, their flavor can be protected to some extent by wrapping them in heavy paper.

Pears keep better wrapped in paper and spread out on shelves, each one separated from its neighbor. Pick pears for storage when they are mature but still hard. Wrap them in paper (news-paper is all right). Let them ripen slowly in a cool, dark place. Pears and apples are the only fruits that should be allowed to ripen off the tree.

9. Citrus Fruit

Commercial fruit has already been treated. These instructions apply to home grown or gathered fruit.

Select well matured, firm fruit as nearly perfect as possible. The fruit should be tree-ripened and free from bruises. Make a mixture of 2 ounces or 4 level tablespoons or borax with one gallon of warm water. Heat the mixture to 117 degrees F., (lukewarm). It will have a milky appearance. Place the fruit in the mixture for one minute. Take fruit from the mixture and let it dry, taking care not to wipe off the borax. When the fruit is dry, wrap it in paper or place in layers of clean dry sand. Store

in a clean, dry, cool, well-ventilated store room or bank.

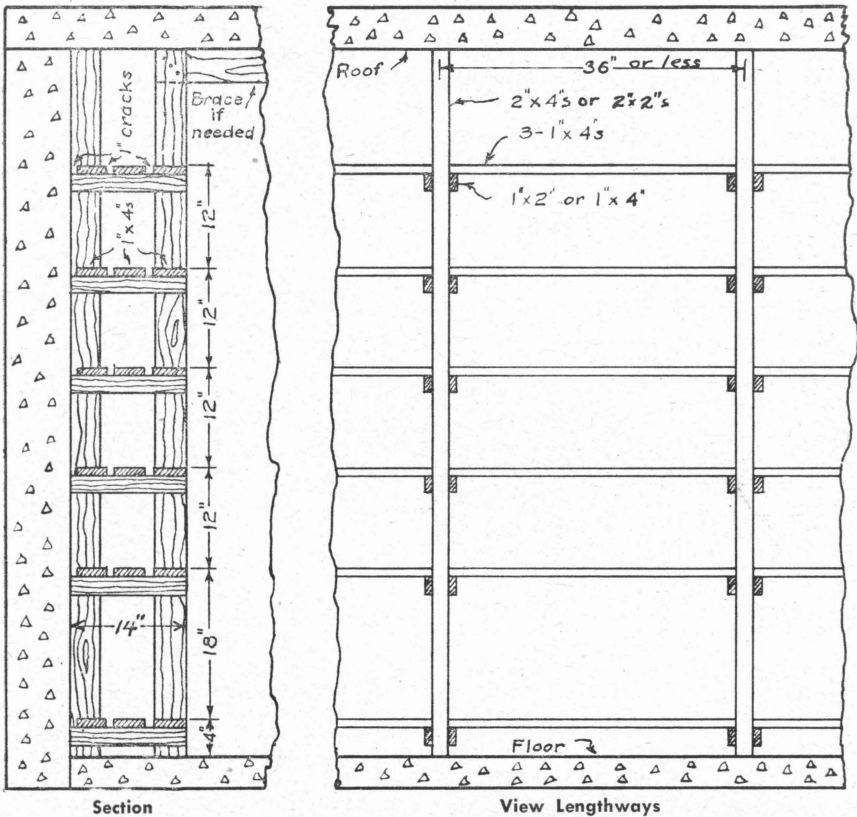
10. Green Tomatoes

A treatment has been worked out to wax the stem end and scars of tomatoes. This more than doubles the time they may be held at ordinary temperatures. The tomato skin is almost gas-tight except at this stem end and scars. Green tomatoes that are waxed over the stem end and scars with a mixture of **1 part beeswax, 1 part paraffin and 2 parts mineral oil**, have

been held at 70 degrees F. for as long as three weeks, compared with 10 days for untreated fruit. Coating the whole fruit may be better suited to commercial storage, but wax that is retained at the stem end and scars really determines the effectiveness of the treatment.

NOTE: All references given in this bulletin may be obtained at the County Home Demonstration or County Agricultural Agent's office.

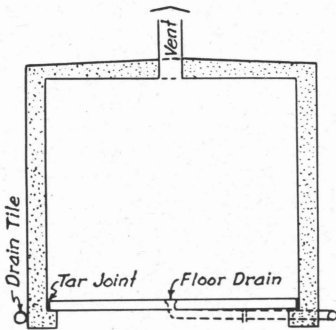
CELLAR OR PANTRY SHELVING



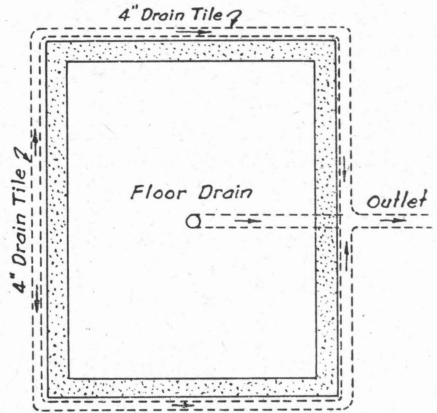
Slatted shelves for a vegetable and fruit storage room. Bottom shelf for crates and large containers. Other shelves for tin cans and jars. Omit top shelf shown in places to allow room for a few crates of such vegetables as onions.

SUGGESTIONS ON VENTILATING CELLAR AND GETTING A CELLAR DRY

Drainage as shown here is usually the most satisfactory way of preventing seepage due to porous concrete in cellar or basement.



SECTION



FLOOR PLAN

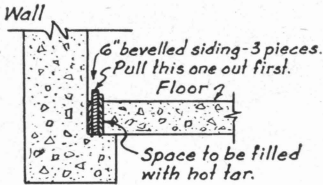


FIG. 1

The prevention of seepage by the use of drain tile outside and below the cellar walls. Applicable if cellar is in a hillside.

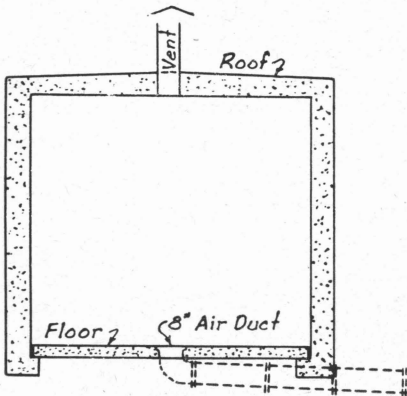
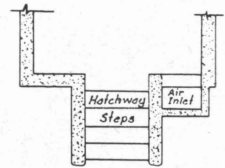


FIG. 2

Air duct entering the floor. Applicable if cellar is in a hillside. Wall drainage omitted unless necessary.



SECTION



PLAN

FIG. 3

Air duct entering by the cellar wall. Above ground surface and opening into the cellar at the floor. The air duct may be of sewer tile Aim to get 1 sq. in. of vent section per sq. ft. of floor area.

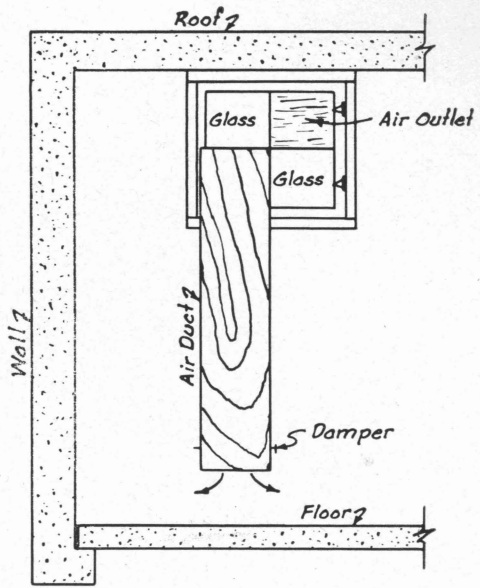
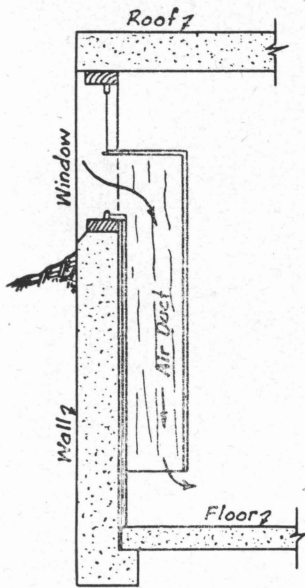


FIG. 4

Improving the cellar, or basement ventilation, where a window is available, by the use of a wooden flue extended to the floor. A sheet iron flue, as a stovepipe, may be used.

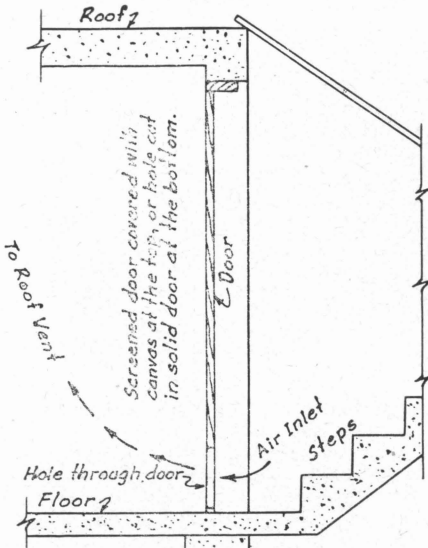


FIG. 5

Arrangement to admit air at the floor through the bottom of the door. Not usable when hatchway door is closed.

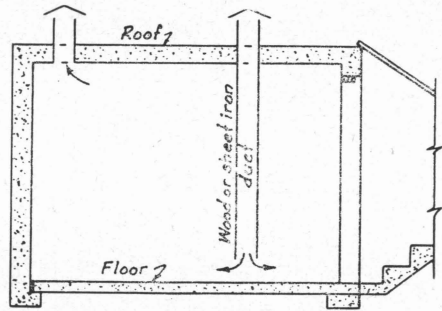


FIG. 6

If the cellar has two roof vents, one may be extended to within 6" of the floor to aid in producing better ventilation.

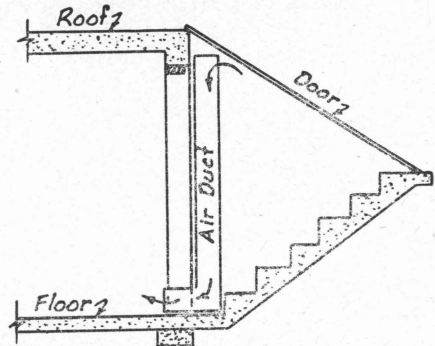
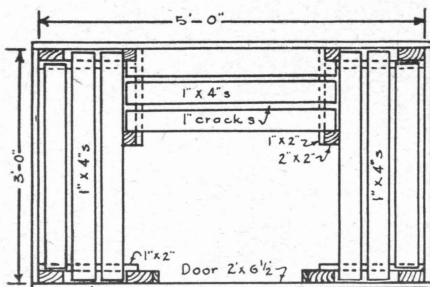


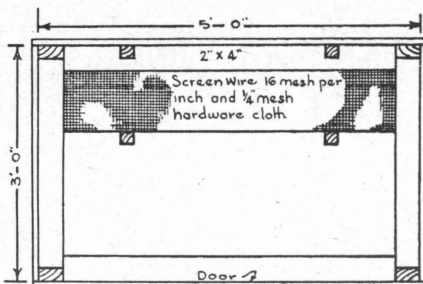
FIG. 7

Air duct of wood or sheet iron in hatchway. Air enters in side of hatchway into duct, and enters cellar at bottom of steps. Roof vent in back end of cellar.

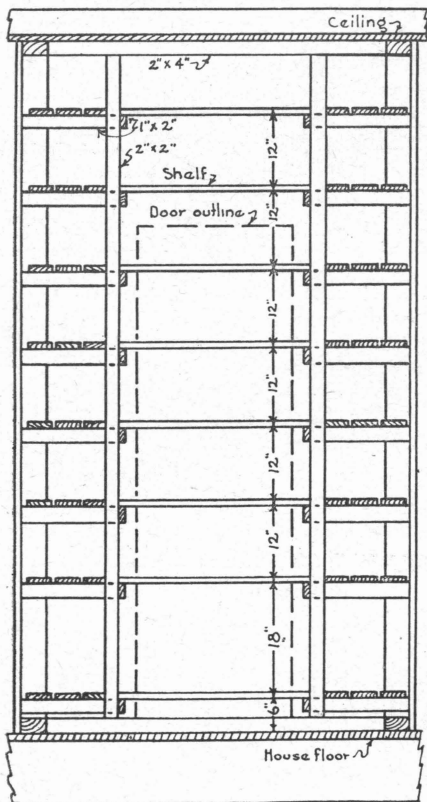
VENTILATED PANTRY



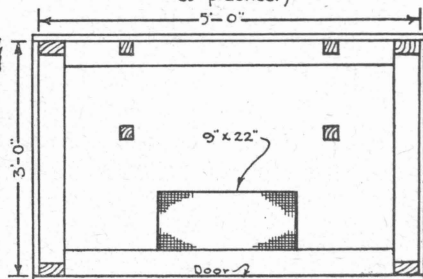
PLAN
Scale 1"=1'



SCREENED OPENING IN THE FLOOR
(Size and shape as above as nearly as practical)



SECTION AT A-A
Scale 1"=1'



SCREENED OPENING IN CEILING
(View looking upward)

MATERIAL REQUIRED (9' ceiling)

- | | |
|--------------------------------------|--|
| 170 bd. ft. tongue and groove lumber | 8—1" x 2" x 10' |
| | 1—1" x 6" x 8' |
| | 1 Pr.—4" strap hinges |
| 4—2" x 4" x 9' | 8 sq. ft.—1/4" mesh hardware cloth |
| 4—2" x 2" x 9' | 8 sq. ft.—16 mesh screen wire galvanized |
| 4—2" x 4" x 8' | |
| 18—1" x 4" x 12' | |

NOTE

Double wall preferable except for higher cost. All walls, tongue and groove lumber of 1" nominal thickness. Desirable that walls be practically airtight. Attic should be vented to the outside air.