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The Farmer's Home Garden

Arthur L. Dacy

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WEST VIRGINIA UNIVERSITY
AGRICULTURAL EXPERIMENT STATION
MORGANTOWN, W. VA.

BULLETIN 122

MAY, 1909

The Farmer's
HOME GARDEN

BY A. L. DACY

[The Bulletins and reports of this Station will be mailed free to any citizen of West Virginia upon written application. Address Director of Agricultural Experiment Station, Morgantown, W. Va.]

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The last session of the Legislature appropriated money for the promotion of horticultural and trucking industries of the State. This is a very commendable undertaking by the Legislature and the duties of carrying out the work have been imposed upon the Director of the Experiment Station. Among other things, in pursuance of the Act of the Legislature, a series of bulletins upon practical subjects bearing upon horticulture and trucking will be published from time to time and this bulletin is the third of the series.

In carrying out the work the hearty co-operation of all persons engaged in trucking and in horticulture is cordially invited.

Yours truly,

J. H. STEWART.

PLANTING TABLE

Quantity of seeds or number of plants required for 100ft. of row, with distance to plant, times of planting and period required for the production of the crops. Brackets indicate that a late or second crop may be planted the same season.

Kind of Vegetable	Seeds, plants required for 100 ftr of row	Distance for Plants to Stand			Depth of Plan'g	Time of Planting in Open Ground	Ready use aft plantin
		Rows Apart		Plants A-part in rows			
		Horse cul.	Hand cul.				
Asparagus; Seed	1 ounce-----	21-2 3 ft.	1-2 ft.---	3 to 5 in.	1-2 in.	Autumn,EarlySprig	3to4 ye
Asparagus plants	60-80 plants	3 or 4 ft.	1-2 ft.---	15to20 in.	4-5 in.	Autumn,EarlySprig	1 to 3
Beans, bush----	1 pint-----	21-2 3 ft.	11-2 2 ft.	4 in.-----	1-2 2 in	Ap- May, July Aug	40to65
Beans, pole----	1-2 pint-----	3 or 4 ft.	3 to 4 ft.	3 ft.-----	1 1 1-2 in	Late Spring-----	50to80
Beets-----	2 ounces-----	1 or 3 ft.	1 11-2 ft.	3to4 in.	1-2 in	Apr-May, July,Aug	60to80
Brussels, sprouts	1-4 ounce-----	2 1-2 3 ft	11-2 2 ft.	1 1-2 2 ft.	1-2 in.	June July-----	90to12
Cabbage, early---	1-4 ounce-----	21-2 3 ft.	2 21-2 ft.	2 21-2 ft.	1-2 in.	Apr st't seed h b,Fe	90to13
Cabbage, late---	1-4 ounce-----	3 ft.-----	2 1-2 ft.	2 21-2 ft.	1-2 in.	June-----	90to13
Carrot-----	1 ounce-----	21-2 3 ft.	16-18 in.	3 to 4 in.	1-2 in.	Apr May, July----	75to11
Cauliflower-----	1-4 ounce-----	21-2 3 ft.	2 2 1-2 ft.	1 1-2 2 ft.	1-2 in.	AprJly st s'd hb F J	100to1
Celery-----	1-4 ounce-----	3 to 5 ft.	1 1-2 3 ft.	6 in.-----	1-8 in.	AprJly st s'd hb FA	120to1
Corn, sweet-----	1-4 pint-----	3 ft.-----	2 1-2 8 ft.	12 in.	1-2 in.	May July-----	60to10
Cucumbers-----	1-2 ounce-----	4 ft.	4 ft.	4 ft.	1 in.	May July-----	60to80
Egg Plant-----	1-3 ounce-----	21-2 3 ft.	2 2 1-2 ft.	1 1-2 2 ft.	1-2 in	May June-----	100to1
Kale or Barecole	1-4 ounce-----	21-2 3 ft.	1 1-2 2 ft.	1 to 2 ft.	1-2 in.	April May, AugSept	90to12
Kohl-rabi-----	1-4 ounce-----	21-2 3 ft.	1 1-2 2 ft.	6 in.-----	1-2 in.	April May, June Jly	60to80
Lettuce-----	1-2 ounce-----	21-2 ft.	1 11-2 ft.	Los 4-6 in	1-2 in.	April June, AugSept	60to90
Melon, Musk.---	1-2 ounce-----	5 to 6 ft.	5 to 6 ft.	H 9-12 in	1 in.	May June-----	120to1
Melon, Water---	1 ounce-----	7 to 9 ft.	6 to 8 ft.	Hills 6 ft.	1 in.	May June-----	100to1
Onion, seeds----	1 ounce-----	2 to 3 ft.	1 11-2 ft.	21-2 3 in.	12 1 in	April May-----	130to1
Onion, sets,----	1 qt. sets-----	2 to 3 ft.	1 11-2 ft.	2 21-2 in.	1 11-2 in	April-----	90to12
Parsley-----	1-4 ounce-----	2 to 3 ft.	1 11-2 ft.	2 to 4 in.	1-8 in.	April May-----	90to12
Parsnip-----	1-2 ounce-----	21-2 3 ft.	1 1-2 2 ft.	3 to 4 in.	1-2 in	April May-----	125to1
Peas-----	1-2 pint-----	3 to 4 ft.	21-2 3 ft.	2 in.-----	2to3 in	April May, JulyAug	50to80
Pepper,-----	1-8 ounce-----	21-2 3 ft.	1 1-2 2 ft.	15to 18 in	1-2 in.	May June-----	100to1
Potato, Irish---	5 pounds-----	21-2 3 ft.	2 to 3 ft.	12 to 15 in.	4to6 in	March May-----	80to14
Potato, Sweet---	3 pounds-----	3 to 5 ft.	3 to 5 ft.	14 in.	3 in.	April May-----	140to1
Pumpkin-----	1-2 ounce-----	6 to 8 ft.	6 to 8 ft.	Hills 6-8 ft	1 11-2 in	April May-----	100to14
Radish-----	1 ounce-----	2 to 3 ft.	1 11-2 ft.	11-2 2 in.	1-2 in.	March September--	20to40
Rhubarb, plants	33 plants-----	3 to 5 ft.	3 to 5 ft.	3 teet----	2to3 in	AutumnEarly Sprig	1to3 ye
Salsify-----	1 ounce-----	21-2 3 ft.	11-2 2 ft.	2 to 4 in.	1 2 in.	April May-----	120to18
Spinach-----	1 ounce-----	21-2 3 ft.	1 11-2 ft.	2 to 4 in.	1 in---	March September--	30to60
Squash, summer	1-2 ounce-----	3 to 4 ft.	3 to 4 ft.	Hill 3-4 ft.	1 1-2 in	April May-----	60to80
Squash, winter	1-2 ounce-----	7 to 9 ft.	7 to 9 ft.	Hill 7-9 ft.	1 1-2 in	May June-----	120to16
Tomato-----	1-8 ounce-----	3 to 5 ft.	3 to 5 ft.	21-2 3 ft.	1-2 in.	MayJ'est pts hb FM	100to14
Turnip-----	1-2 ounce-----	2 tn 3 ft.	2 to 3 ft.	3 to 4 in.	1-4 1-2	April July-----	60to80

THE FARMER'S HOME GARDEN

That the majority of the farmers of West Virginia are not getting the largest possible return from their home garden is apparent to anyone who has the opportunity to observe the results obtained at present, who is acquainted with the possibilities of profit in cultivating an acre of ground, or who knows the present condition of the markets in our cities and towns with regard to the supply of fresh fruits and vegetables.

The limit to the possible income from an acre of ground, is as yet an undetermined quantity, but in a large measure it is proportionate to the amount of skill and labor bestowed upon it. It is easily possible, however, for any farmer to make his home garden the best paying area on his farm.

In the spring of 1900 the Agricultural Experiment Station of Illinois set apart one-half an acre of land and for five years treated it as a "farmer's vegetable garden." "The object of maintaining this garden was to secure data regarding the cost of such a garden and the value of its products, and to demonstrate the feasibility of securing a large assortment and continuous supply of vegetables throughout the year by a proper selection of varieties, timely planting and judicious tillage."

"Each year an accurate record was kept of all labor involved in the planting and care of the garden as well as the cost of the seeds, etc., so that the cost of the garden for each year could be determined. No charge was made for the rent of the land, nor for the manure, except the hauling. Neither was any charge made for the time spent in gathering the vegetables, for in prac-

tic they would be gathered from one to three times a day, as needed for the table, and usually by those doing the kitchen work, rather than by the farmer himself. In all cases an accurate account was kept of everything gathered from the garden. At the end of the season the garden was credited with these products at a fair, average price. The prices were based upon those ruling in the local market at the time the different vegetables were gathered."

"The average value of the products per year for the five years was \$105.23, and the average net profits \$74.85."*

"From careful observation the statement can safely be made that a well kept garden will yield a return ten to fifteen times greater than would the same area if devoted to general farm crops. A half acre devoted to the various kinds of garden crops will easily supply a family with \$100 worth of vegetables during the year, while the average return for farm crops is considerably less than one-tenth of this amount."**

With the keen demand for fresh fruits and vegetables which exists in our home markets, a demand which to a large degree is supplied from sources outside of the state, the home gardens of West Virginia should not only supply their owners with the best of a living, for a large portion of the year, but should be a source of considerable revenue as well.

LOCATION OF THE GARDEN.

In choosing the location of the home garden it is well to keep in mind the fact that from force of circumstances, much of the work in the garden will be done in spare moments, and by the women and children of the household. It should therefore be as convenient to the house as possible. Best results will be obtained from a fairly level, well drained, light, sandy loam, with a southerly exposure. The ideal soil or exposure is not always at hand, however. Choose the best site possible and by correct management its defects may be remedied.

*Illinois Agricultural Experiment Station Bulletin 105.

**Farmers Bulletin 255, U. S. Dept. Agr., Page 5.

PREPARATION OF THE SOIL.

If the soil of the garden is a clay which is wet in the spring and bakes in the summer, tile drainage will benefit it greatly. If this is not done, it should receive a liberal application of strawy barnyard manure and be plowed deeply in the fall, exposing the furrows to the beneficial action of the freezing and thawing of the winter months. Subsoiling will be found advantageous in most cases. If a sandy loam, it is well to manure the garden in the fall or winter months, but the plowing may be left until spring. The judicious use of lime will be a help in improving defects of soil in the garden. It will correct acidity, render more compact, soils that are too sandy and make clay soils more open and friable. The garden should be plowed as early in the spring as the ground is dry enough, and should be put into condition for planting by being thoroughly pulverized with the harrow and leveled, with a plank drag.

FERTILIZERS.

There is probably no better fertilizer for use in the home garden than well-rotted barnyard manure. There is not much danger of using it too freely. If the home supply is not abundant enough, it may be supplemented by using a high grade commercial fertilizer with a guaranteed analysis of three per cent nitrogen, eight per cent phosphoric acid and ten per cent potash. This may be used as a top dressing after plowing, at the rate of one thousand pounds to the acre, to be harrowed in, or it may be mixed with the soil in the furrow or hill just before planting. The manure from the fowls of the farm is especially adapted for use in the hill or furrow where it will be quickly available to the plants. Nitrate of soda is a valuable aid in hastening the growth of asparagus, rhubarb, lettuce, spinach and other early crops, as it supplies nitrogen in a quickly available form. It is best to use it in two or three applications at the rate of one hundred pounds to the acre.

PLANNING THE GARDEN.

It is grave mistake to wait until the rush of spring work is on before giving thought to the management of the garden. The comparative leisure of the winter months should be improved by planning the garden for the coming season. If a diagram is made of the garden showing the location of the prospective crops and the succession plantings it will bring to mind many important details which might otherwise be forgotten, and will save time when it counts for the most.

SUCCESSION OF CROPS.

It is the purpose of every good gardener to make his land produce as much as possible. As soon as one crop is matured he plans either to plant the seed of another crop in its place or to have the plants partly grown to succeed the first crop. By judicious management even three crops may be taken from the same piece of ground in a season. The following are suggestive: The old strawberry bed may be manured and plowed up after fruiting and set with cabbage, cauliflower or celery plants which have been started in a hot-bed or cold frame. Early peas may be followed by seeds of beets, carrots or beans, or by plants of celery or tomatoes; radish or bunch onions, by cabbage or celery. Early lettuce, beets, carrots or beans, may be followed by later crops of the same; early potatoes by late cabbage, cauliflower or celery; and early cabbage by spinach or late beans.

LOCATION OF CROPS.

In determining the location of the various crops in the garden the following considerations are suggested.

The small fruits and perennial vegetables should be placed in a part by themselves, where they are to remain from year to year.

A new strawberry bed should be started each year and after fruiting two years, be discarded.

The rows of vegetables should be made long and far enough apart to permit of horse cultivation except in the case of such va-

rieties as can and should receive better care, and yield larger returns, from a smaller area if cultivated by hand.

Varieties which mature at about the same time, should be planted near together, so that their place may be taken by a succession crop. The different varieties should also be arranged as nearly as possible in the order of their planting so that the unplanted portion of the garden may be kept stirred to prevent weeds from growing and to conserve the moisture until ready for planting.

A sample plan for a home garden of one-half an acre is given on pages 386 and 387. This plan embodies the suggestions mentioned above.

SEEDS FOR THE GARDEN.

Seedsman's catalogues should be consulted, and orders should be placed for seeds, tools and fertilizers needed, a good while before planting time arrives so as to avoid annoying delays. Buy only the best seeds from a reliable seedsman. By so doing a stock of superior strains will be secured, free from weed seeds, and of strong vitality, which will insure a full stand of plants. It is poor economy to invest in cheap seeds. To aid in ordering seeds for the garden, the amounts of seeds needed to sow one hundred feet of row are given in the planting table, on page 372. A list of suitable varieties of small fruits and vegetables follows. This list is merely suggestive, but it contains varieties which have been tested and found satisfactory:

Currants—Wilder, Perfection, Fays Prolific, White Imperial; *Gooseberries*—Downing; *Red Raspberries*—Marlboro, Cuthbert; *Black Raspberries*—Kansas, Cumberland; *Blackberries*—Early Harvest, Snyder, Eldorado; *Strawberries*—Clyde, (Per.) Haverland, (Imp.) Parson's Beauty, (Per.) Glen Mary, (Per.) Senator Dunlap, (Per.) Brandywine, (Per.) Dornan, (Per.) Sample, (Imp.) (Varieties marked "Imp." are pistillate and should be planted between varieties marked "Per."); *Asparagus*—Palmetto, Conover's Colossal; *Bush Beans*—Giant Stringless, Refugee, Wardwell's Kidney Wax, Early Carmine Podded Hort.

Bush Lima Beans—Henderson's, Dreer's, or Burpee's; *Beets*—Eclipse, Crosby's Egyptian, Detroit Dark Red or Edmand's Blood; *Early Cabbage*—Early Spring, Early Jersey Wakefield, Henderson's Early Summer; *Late Cabbage*—Stone Mason, All Seasons, American Savoy; *Carrots*—Early Scarlet Horn, Danvers, Chantenay; *Cauliflower*—Snowball, Erfurt; *Celery*—Paris Golden, Giant Pascal; *Sweet Corn*—Cory, Lackey, Early Crosby, Potter's Excelsior, Quincy Market, Country Gentleman, Stowell's Evergreen; *Cucumbers*—White Spine, Emerald; *Egg Plant*—N. Y. Imp. Purple; *Kale*—Scotch Curled; *Kohl Rabi*—Early White Vienna; *Lettuce*—(Forming heads), Black Seeded Tennis Ball, Hanson; (Loose Leaved,) Early Curled Simpson, Grand Rapids; *Muskmelons*—Netted Gem or Rocky Ford; *Onions*—Yellow Danvers, Prizetaker; *Parsnips*—Abbott's Hollow Crown, Imp. Guernsey; *Peas*—Alaska, American Wonder, Gradus, Telephone; *Peppers*—Ruby King, Sweet Mountain, Large Bell; *Potatoes, Irish*—Noroton Beauty, Early Ohio, Early Rose, Delaware, Green Mountain; *Potatoes, Sweet*—(Dry Mealy Fleshed,) Yellow Jersey, (Moist Fleshed), Georgia, Florida and Red Bermuda; *Pumpkin*—Sugar; *Radishes*—Early Scarlet Globe, French Breakfast, Early Frame; *Spinach*—Early Giant Thick Leaved; *Squash*—(Summer) Strickler's Crookneck; (Fall) Boston Marrow; (Winter), Essex Hybrid, Delicious, Hubbard; *Tomatoes*—Earliana, Stone, Perfection; *Turnip*—Early White Milan, White Egg, Early Am. Red Top; *Watermelons*—Dark Icing, Dixie, Florida Favorite, Kolb Gem. As far as possible the above varieties are arranged in the order in which they mature.

PLANTS FOR THE GARDEN.

The season for enjoying fresh vegetables may be lengthened at both ends, and the garden area made to produce a larger profit if hot-beds or cold frames are used for starting plants of such vegetables as radish, lettuce, cabbage, cauliflower, tomato, celery, egg plant, pepper, etc. The latest sowing of radish and lettuce may be matured in the frames. Hot-bed sash should not cost more than two dollars apiece, and the farm wood lot should furnish the material for the frames. They should be placed in the

lee of a building or other sheltered place and the glass should face the south.

CONSTRUCTION OF HOT-BEDS AND COLD FRAMES.

To construct a hot-bed, excavate the soil, making a pit about two and one-half feet deep, six feet wide and long enough to accommodate the number of sash to be used. Standard hot-bed sash are made three feet wide by six feet long. Line the sides and ends of the pit with one and one-half or two inch plank, nailed to chestnut or locust stakes. If the ground is level the frame should extend twelve inches above the ground on the upper side and six inches on the lower side, to allow the water to drain from the glass. Cross bars of two by three inch material should be placed at intervals near enough to insure proper stiffness of the frame.

Some time before the hot-bed is to be used, fresh horse manure containing a liberal amount of straw should be spread evenly in the bed, tramping it compactly until the pit is full to within about six inches of the top on the lower side of the frame. The manure will settle several inches before it is time to sow the seed. Put the sash on the frame after filling and allow the manure to heat for a few days. The temperature will rise quite high but should be allowed to fall to about 80° F., when about four inches of good garden loam should be spread evenly on top of the

manure. The outside of the frame should be banked with soil or strawy manure to help retain the heat in the frame. Fig. 1 gives a cross section of the hot-bed when it is ready for use.

A cold frame is similar to the hot-bed except that the only heat obtained is that furnished by the rays of the sun through the glass sash. It is constructed of lighter material, one inch boards being stout enough. A twelve inch board is used in back and an eight inch board in front, and the frame is placed on top of the ground. In the northern part of the state the cold frame may be used for hardening off plants which have been started in the hot-bed, previous to setting them in the field. In the southern part of the state it may take the place of the hot-bed. Which ever style of frame is used, it is well to have at hand some old blankets, burlap bags, or straw, which may be thrown over the frame at night to protect it from the cold.

PLANTING AND CARE OF HOT-BEDS .

The seeds may be sown directly in the soil over the manure or in boxes, called "flats". These can be made from the various sized packing cases which may be obtained from the grocery store. Boxes twelve to fifteen inches wide by fifteen to eighteen inches long are a convenient size to handle. The box should be sawed into horizontal sections about three inches deep, the cover of the box or any thin boards being used for the bottom of the sections other than the lower one of the box. The advantage of using the boxes is in the fact that the seed sowing and transplanting may be done in the house or any other shelter, when the weather would not permit of their being done in the frame.

In either case the seed bed should be made firm and level, and the seed sown in straight lines, about two inches apart, made by pressing the edge of a narrow stick such as a lath, into the soil to the required depth. Scatter the seeds fairly thickly in the depression thus made. Then level and compact the soil with a smooth board and water the bed or box. If boxes are used they should be placed on top of the soil in the frame, taking care that the surface of the soil is level.

After the seeds come up, the frame will need ventilation on bright, sunny days. This is done by raising the sash a few inches on the opposite side from the wind, and holding it in place with a block of wood. The sash should be lowered again in time to allow the frame to become warm enough to carry it safely through the night. Watering should be done only on bright days, and early in the day. The sash should be raised to allow the foliage and the surface of the ground to dry off. If the soil is allowed to become too wet, the young plants are apt to be lost through the attack of the "damping off" fungus.

The young plants should not be allowed to grow too thickly and become "leggy," but should be thinned out enough to produce strong, stocky plants. An occasional stirring of the soil will be a great help in hastening their growth.

HANDLING THE PLANTS.

Before setting in the open field, plants which have been grown in the hot-bed or cold frame will need to be "hardened off." That is, they should become gradually accustomed to the effect of sun and wind, so they will stand the change of transplanting to the open ground. To do this the amount of ventilation given should be gradually increased until the frames can be left uncovered during the entire day and upon warm nights. The amount of water given should be decreased to just enough to keep the plants from wilting.

TRANSPLANTING.

When the seedlings begin to show the third or fourth leaves of fair size, they should be transplanted to about two inches apart each way, either in the beds or in the "flats." When they begin to crowd again they should be ready to set in the garden. Such plants as cucumbers, melons and beans, which do not transplant readily from seed bed to garden, may be grown in soiled strawberry baskets, or on inverted pieces of sod, planting enough seed for one hill in each sod or box.

Before transplanting to the open ground, the soil containing the plants should be thoroughly soaked, so that in lifting them,

a portion of the soil will adhere to the roots. The soil of the garden should have been previously prepared to receive the plants so that the work of transplanting may be quickly done. It is best to choose a cloudy day, or one when rain seems likely to come soon. If in a dry time, it is best to set the plants at evening. The soil should be thoroughly compacted about the roots of the plants when set and the soil on top left loose around the plants to prevent the escape of moisture.

PLANTING OF THE SEEDS.

The time for planting seeds in the garden, also the depth and distance apart at which they should be placed, is given in the planting table on page 372. The time given is approximate, as it will vary with different seasons and in different parts of the state. The ground for the garden having been thoroughly fitted, the rows may be laid out in straight lines by means of a home-made sled marker, which will mark two or three rows at a time. If a seed drill is used, it is only necessary to get the first line straight, as the marker attached to the drill indicates each succeeding row.

CULTIVATING THE GARDEN.

If the rows are marked, cultivation may begin before the plants appear. It should be kept up at frequent intervals throughout the growing season, not only to destroy weeds, but to conserve the moisture in the soil by maintaining a dust mulch and to liberate plant food by breaking up the soil particles. The crust which is formed by heavy rains should be broken as soon as the soil is dry enough to work.

TOOLS FOR THE GARDEN.

Money spent for the proper kind of tools for the garden is well invested since they reduce the cost of its care and enable the farmer to grow larger and more profitable crops. Aside from the plow, harrow and drag, which are needed in fitting the land for any farm crop, some of the tools most useful in the garden are :

seed drill, a horse cultivator, a spading fork, trowel, steel rake, wooden lawn rake, hand weeder, scuffle hoe, common hoe, watering can, wheelbarrow and wheel hoe. A good outfit of tools for the garden should be bought for from \$25.00 to \$35.00.

INSECTS AND DISEASES.

The discussion of insects and plant diseases which attack garden crops will be left for future bulletins. It is well to remember, however, that prevention is in many cases easier than cure. A great deal may be accomplished in controlling these pests by clean cultivation, by burning all rubbish and diseased plants, and by a rotation of crops, whereby the relative position of the different crops in the garden is changed from year to year.

MARKETING THE SURPLUS.

As was intimated at the beginning of this bulletin, the markets of our cities and towns are obliged to buy a large share of their produce from sources outside of the state. With very little extra effort the farmers of West Virginia could supply a large share of this trade. Each farmer should study the condition of his nearest market, find out the kinds of vegetables and fruits most in demand and plant heavier of these varieties than he needs for his own use. He should find out the way in which his market demands they should be prepared for sale, and be sure that his products reach their destination in a clean, fresh and attractive condition. Attention to these points will insure a ready sale at remunerative prices.

CANNING THE SURPLUS.

With the several excellent makes of low-priced canning outfits now on the market there need be no waste of the products of the farm garden. Any surplus of berries and of almost all kinds of vegetables may be canned, for use at home during the winter or for sale in this form. Receipts for preserving fruits may be obtained by sending for Farmers' Bulletin 203—Canned Fruits, Preserves, and Jellies. Directions for canning the various vegetables are furnished by the manufacturers of canning outfits, such as the Modern Canner Co., Chattanooga, Tenn., the Farm Canning Machine Co., of Meridian, Miss., and E. G. Mendenhall, Kinmundy, Ill., agent for the Ranney Canner Co.

STORING VEGETABLES FOR WINTER USE.

Many of the vegetables of the home garden may be kept in their natural state till well along toward spring if given the proper amount of care. A good cool cellar affords an excellent means for storing most varieties of garden crops. The method of treatment best suited to each crop will be discussed in the following pages.

Explanation of The Diagram

Row	Kind of Fruit or Vegetable	Row	Kind of Fruit or Vegetable
1	Currants	20	One-half row Kale, one half row Brussels
2	Goosberries	21	Bush Beans, Green, Wax Lima and Horticultural
3	Rhubarb	22	Sweet Potatoes
4	Red Raspberries	23	Early Celery followed by fall Spinach.
5	Black Raspberries	24	Tomatoes
6	Blackberries	25	Late Cabbage
7	Asparagus	26	Pole Beans
8	Old Strawberry Bed	27	Radishes
9	New Strawberry Bed	28	Spinach
10	Sweet Corn with Field Beans between after 2nd cultivation.	29	Lettuce
11	Muskmelon	30	Early Carrots
12	Watermelon	31	Onion Sets
13	Cucumbers	32	Beets
14	Pumpkins	33	Kohl Rabi
15	Winter Squash	34	Turnip
16	Peas. 1-3 early, 1-3 med. 1-3 late. Early Peas followed by late beans	35	Summer Squash
17	Early Cabbage followed by late celery.	36	Onion Seed
18	Cauliflower. (early) fol- lowed by late Beans.	36A	Egg Plant
19	Early Potatoes followed by late Cauliflower	37	Peppers
		38	Late Carrots
		39	Parsley
		40	Salsify
		41	Parsnips

Hot Bed Cold Frame

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CULTURAL HINTS FOR FARM GARDEN CROPS

ASPARAGUS.

Every farm garden should have its asparagus bed. This vegetable is one of the earliest to be ready for use when the products of the garden are eagerly awaited. It prefers a light sandy loam, and responds readily to liberal feeding. When once planted an asparagus bed is good for fifteen or twenty years. The initial preparation should therefore be thorough. The plants may be raised from seed, but it is better to buy strong two-year old roots from a seedsman or nurseryman. They may be set either in the fall or early spring. The land where they are to be planted should be heavily manured and plowed deeply. To prepare the bed for setting, furrow out the rows about six inches deep, about four feet apart and set the plants in the bottom of the furrows, about fourteen inches apart and cover firmly with about four inches of soil. The furrows will become filled with subsequent cultivation. Apply about two inches of manure as a top dressing each fall and work it into the soil as early in the spring as possible. If two-year-old roots are planted a light cutting may be made the second season after planting, and each succeeding year should give a full crop. If the asparagus is preferred bleached, the bed should be slightly crowned in the spring and the shoots cut several inches below the ground, soon after they appear, being careful to put the knife straight down beside the shoots to avoid cutting others which cannot be seen. If to be had green, all that is necessary is to break off the tender roots at the surface of the ground as soon as they have reached the desired length. During the cutting season, which will last from one to two months, all shoots, large or small, should be removed. When the shoots become tough and stringy, cutting should cease.

The bed should then be fertilized and cultivated well until fall, as the better the growth made during this part of the year, the better will be the following spring's crop. After the tops die in the fall, remove and burn them. The surplus product of the bed will find ready sale at good prices wherever this vegetable is known. It is sold in bunches weighing about a pound. If desired the tender tips may be canned, affording a delicacy for the winter table.

BEANS.

Beans do best on a warm sandy loam, but may be grown on almost any garden soil. They may be divided into two classes, bush and pole beans, and each class may be subdivided into green, wax, lima and shell beans. They may therefore be had in a pleasing variety, and by making successive plantings a continuous supply may be enjoyed from early summer to late fall.

Beans should not be planted in quantity until the ground is thoroughly warmed, although a few bunch beans may be risked as soon as the ground can be worked.

Pole beans require somewhat richer soil than bush beans, and while the labor of preparing and setting the poles is considerable, they are superior to the bush sorts in quality.

Lima beans, both bush and pole, require a rich soil and should not be planted until later than the bush beans.

For the production of dry beans for winter use, varieties such as Red Kidney, White Kidney or White Marrow should be planted about the middle of the summer. The surplus of the later planting of snap beans may be dried by pulling the vines before frost and piling in small piles about poles.

The later plantings of bush string beans may follow an early crop of radish, lettuce, beets, carrots, etc.

BEEETS.

The garden beet will grow in any good corn land, but gives best results in a rich, sandy loam. Seeds may be sown as early as the ground can be worked, in drills twelve to eighteen inches apart and later thinned to about three or four inches in the row.

If planted in rows three feet apart, for horse cultivation, they may be sown in a double row with six inches between, leaving thirty inches for cultivation. For a supply of young, tender beets, succession sowings should be made at intervals of four or five weeks during the summer months. The crop intended for winter use should not be planted before July. Before too severe freezing weather the beets should be pulled, topped and covered with earth in piles in the field or with moist sand in the cellar.

BLACKBERRIES.

Blackberry plants may be set in the fall or early spring. They should receive frequent cultivation during the first season after planting, and the canes should be pinched back when they reach about three feet in height. The following spring the lateral branches should be shortened to about one foot in length. The plants should be kept down to a narrow hedge-row and thinned to stand about a foot apart.

BRUSSELS SPROUTS.

Require care similar to that given the cabbage except that they may be grown somewhat closer together. The parts eaten are the little cabbage-like growths which appear at the axils of the leaves. They seldom reach a diameter exceeding two inches. As the heads begin to crowd, the leaves should be broken from the stem of the plant in order to give them more room, leaving a few at the top where the new heads are being formed.

They are cooked the same as cabbage but are considered superior in flavor to the cabbage. Brussels Sprouts are very hardy and are improved by freezing. They may be left out all winter if given some protection, or may be pulled when hard freezing weather sets in, and stood upright in the cellar with some soil about the roots, or in a pit which may be covered with straw.

CABBAGE.

For the early crop of cabbage, seed may be sown in the hot-bed or cold frame about the first of February, and transplanted when the seedlings show the third or fourth leaf. They should

be hardened off and ready to transplant to the open ground about the first or middle of April. The early crop may be followed by late beans, spinach, beets or carrots.

Plants for the late crop may be secured in a similar manner by planting the seed in May or June and transplanting to the field in July. Or the field may be marked off in June, three feet each way and several seeds planted at each intersection. The plants should be thinned to the most vigorous one when a good stand is assured. The advantage of starting the plants in the bed are: It makes possible the use of the larger area they would occupy in the field, for maturing one crop to be followed by the cabbages when the ground is cleared of the first crop. It is easier to care for the young plants in the bed. It saves in the labor of cultivating, which would be necessary if set in the field. Its disadvantage lies in the fact that when the plants should be transplanted to the field, the weather is apt to be hot and dry and unless great care is taken in the operation, the plants are likely to die or receive a severe check. Cutting off one-half to two-thirds of the leaf surface at transplanting is often of great advantage—especially in a dry time. Cabbages may be left in the ground until severe freezing weather. They should then be pulled and the heads set in a trench with the roots up and covered with about six inches of soil and enough mulch to keep the cabbages from freezing.

CARROT.

By planting seeds of the Early Scarlet Horn variety in the frame, and again in the open ground as soon as it is fit to be worked and by following this variety with Danvers and Chantenay, a long season of this vegetable may be enjoyed. For the winter crop it is best to sow the seed not earlier than the first of July. Carrots should be left in the ground until severe freezing weather, when they should be dug, topped and covered with moist sand in the cellar or covered with soil in piles in the field.

CAULIFLOWER.

Like the cabbage, the cauliflower is grown as an early spring crop and as a fall crop. It is more delicate than the cabbage and is somewhat more difficult to grow successfully. The best seed obtainable should be used, as much depends upon the quality. The plants for the early crops should be started as for cabbage, transplanting once and taking care that they receive no check in their growth at any time. They may be set somewhat closer than the cabbage. When the heads begin to form, the leaves should be drawn together in order to secure a white even color. Exposure to the sun for any length of time spoils the heads for market. If successfully grown the cauliflower is a delicious vegetable and almost always sells readily for a good price. It will not stand freezing like the cabbage, but should be pulled and stored in the barn cellar by standing upright in some soil.

CELERY.

This crop is produced to perfection in the deep alluvial soils of certain sections of the country where swamp or lowlands have been drained. It can be grown of fine quality, however, in any deep, rich garden soil. There are glade lands in many parts of this state which when once drained would be admirably adapted to the culture of this crop. Celery seed is very small and rather difficult to germinate. Fresh seed should be obtained each season as it soon loses its vitality. The seed-bed should be made very fine and the seed should be covered very lightly—not more than an eighth of an inch. To prevent the soil from drying out (which should not be allowed) the seed-bed should be shaded with newspaper or cheese cloth. This covering should be removed as soon as the plants come through the soil. Avoid watering the young plants so freely as to cause them to damp off. Celery is benefitted by transplanting at least once before the final change to the field. When the seedlings are about a month old they should be transplanted to about one and a half inches apart. When transplanting to the field it is generally advisable to shear off part of the tops. They are set about six inches apart

in rows from three to four feet apart, usually on ground which has produced a crop of early potatoes, radishes, beets, etc. It is necessary to blanch this crop. In the case of the early, or self-blanching varieties this is usually done by placing two boards, one on either side of the row, close to the plants. But few leaves are allowed to come above the tops of the boards, which are held in place by cleats nailed across the row at intervals. The bleaching may be done by "handling" the plants, as the operation is termed. When the plants have attained a good size the stalks are drawn closely together with the hands and soil is placed against either side of the plant. Another and final handling is given about two weeks before the celery is to be dug, when the plants are banked with soil until but a few leaves are left uncovered. Care must be taken that the soil does not fall down inside the crown of the plants. The portion of the crop that is to be used during the early part of the winter may be left in the ground and covered with straw to keep it from freezing. If it is to be kept until late in the winter, however, the celery should be dug and placed close together in a well-drained trench, which can be covered with boards, which in turn should be covered with soil and mulch, to keep from freezing. It may also be kept in a cool cellar by standing the plants upright in a few inches of soil. Spaces should be left at intervals between the rows of plants to afford ventilation.

SWEET CORN.

This is a crop which may be profitably grown by almost any farmer who is within reach of a market, for any surplus which cannot be disposed of profitably there, will make excellent feed for the stock on the farm. A succession should be had either by frequent plantings or by planting at the same time several varieties which mature in different periods of time. For the latest plantings an early variety should be used. In field culture, corn is largely grown in hills, but in the farm garden, it is better to plant in drills about three feet apart, thinning to one foot apart in the row, giving level culture.

CUCUMBERS.

An early supply of this table delicacy may be had by starting a few vines in the hot-bed or cold frame, to mature there or to be transplanted to the open ground when the weather becomes warm enough. They succeed best upon a sandy loam. To combat the striped cucumber beetle, sprinkle the young vines with air slaked lime or cover with frames over which fly screen or mosquito netting has been placed. In order that the vines may be kept in good bearing condition, no fruit should be allowed to ripen on the vines. For pickling cucumbers a few vines of some such variety as Everbearing or Boston Pickling may be planted in July.

CURRANTS.

For the currant plantation, strong one or two-year-old plants should be planted in the fall or early spring. They should begin bearing in one or two years. Their care consists of cultivation during the growing season, mulching with manure in the fall, and the removal of canes which are more than three or four years old. The growth of the young shoots, which bear the best fruit, should be encouraged. The currant worm, which is apt to be troublesome, is easily controlled by spraying the bushes with Paris green, arsenate of lead or hellebore as soon as the worms appear.

EGG PLANT.

The culture of this vegetable is similar to that of the tomato. The seeds are difficult to germinate and should be sown in the soil directly over the manure of the hot-bed. They should not be planted in the field until real warm weather.

GOOSEBERRIES.

The treatment given the currant applies with equal force to gooseberry. Both of these berries succeed best in a cool, rather shaded situation, and for this reason are often planted in the rows of pear or plum trees. The currant worm also attacks the

gooseberry and is controlled in the same manner as on the currant. The fruit of the gooseberry is usually picked in the green state, as soon as the berries reach good size. The bushes will need an occasional thinning to make picking easier and to secure finer fruit.

KALE.

Kale is a vegetable of the cabbage family, the leaves of which are used as greens during the fall, winter or spring. It is very hardy. The seeds may be sown in September and the young plants protected through the winter with a covering of leaves or straw, or they may be planted in the early spring the same as cabbage. As its flavor is improved by frosts, the plants may be left in the ground through the winter with a light protection of straw.

KOHL RABI.

Kohl Rabi is not grown as extensively as its value warrants. Its culture in the seed bed is similar to that of the cabbage. It may be grown, however, without transplanting, sowing the seeds in drills as soon as the ground can be worked, and thinning to about six inches in the row. The edible part is the swollen stem which appears just above the ground. Successive sowings should be made, since it becomes hard and woody soon after it reaches a diameter of two or three inches. It is prepared for the table the same as turnip, which it resembles in flavor.

LETTUCE.

Lettuce thrives best in a rich, sandy loam containing plenty of organic matter. Many gardeners simply sow the seeds broadcast and use the leaves as soon as they become large enough. This method would hardly satisfy one who had acquired a taste for the crisp, tender product which may be obtained with a little more effort. To obtain the best results, the seed should be sown in the hot-bed or cold frame, and in about two weeks the seedlings should be transplanted to two inches apart each way. When they begin to crowd they should be transplanted again

to from ten to twelve inches apart each way, according to the variety and season of the year. The plants should be kept growing rapidly by frequent cultivation and by supplying water if necessary. During the hot summer months lettuce is apt to bolt and run to seed even if the plants are shaded. It is better, during this season of the year to grow varieties like White Paris Cos (called Romaine). During July and August, seeds of the former kinds may be sown, to mature in the cool months of the fall. The earliest and the latest crops may be matured in the hot-bed or cold frame, thus lengthening the season. Plants started in the late fall may be carried over winter if given sufficient protection.

MUSKMELON AND WATERMELON.

The culture of these vegetables is similar to that given the cucumber, except that the watermelon should be planted further apart—from six to eight feet.

ONIONS.

An early crop of onions may be secured in several ways. Sets of the Multiplier or Potato onion, or bulblets of the Top or Tree onion, if planted in the fall, will give early green onions. The more common way of producing the bunch onions of early spring is to plant as early as the ground can be worked, white onion sets, which may be obtained of any seedsman. The sets are produced by sowing onion seed very thickly during the latter part of the previous summer. If desired, either white or yellow sets may be allowed to remain until they have matured, which will be earlier than the crop grown from seed. For the main crop the seed may be sown in drills one foot apart and later thinned to about two inches apart in the row. It is hardly possible to get the seed-bed in too rich or too fine a condition. In fact, "as fine as an onion bed" expresses the standard of good preparation of the soil for planting. If the onions continue growing too late in the season, maturity may be hastened by rolling a barrel over the tops, lengthwise of the rows. When the tops have become dry the onions should be carefully raked up

into narrow windrows, with a wooden rake, and allowed to **dry**. When well dried the tops should be twisted off, and the onions put into crates or bags and stored in a dry, cool place.

PARSLEY.

Parsley is grown for its leaves, which are used for garnishing meats or for flavoring soups. Its use in the home garden will perhaps be limited to a few plants, unless it is situated in the vicinity of a good-sized market. The seed may be sown in early autumn and the plants carried over winter by protecting with straw; it may be sown early in the hot-bed or cold frame and transplanted into rows one foot apart, and about six inches apart in the row; or it may be sown early in the open ground where it is to remain, and later thinned out in the row. The seed is rather slow to germinate and should be soaked in warm water for a few hours before planting, and the soil compacted firmly over it when planted.

PARSNIP.

Parsnips should be planted in a deep loamy soil in order to secure long, smooth roots. The seed should be sown in drills, about one-half an inch deep, and the plants thinned to about three inches in the row. The roots may be dug late in the fall and stored in a cellar or pit covered with sand or soil, to prevent withering, or they may be left in the ground and dug in the spring. If the roots are left in the ground over winter it is best to use a variety which does not have the depression around the crown of the plant. The hollow crowned sorts are apt to rot because of the freezing and thawing of the water which collects in the depression.

PEAS.

For the extreme early crop, smooth peas of the Alaska type may be planted just as soon as the ground can be worked in the spring. They are much inferior to the wrinkled sorts, some of which are but a few days later in maturing. By making frequent plantings, or by planting early, medium and late varieties

at the same time, a succession of this delicious vegetable may be obtained. During the hot summer months peas do not do so well as earlier, on account of the mildew which attacks the vines. Plantings may be made in July or August, however, of early maturing varieties, to furnish picking in the fall months. Dwarf varieties, such as the American Wonder, may be grown without support, but for tall varieties of the Telephone type, some kind of support should be furnished for the vines. This may be brush, which has been cut before growth starts in the spring, or it may be supplied by the use of three or four foot poultry netting.

PEPPERS.

The culture of peppers is very similar to that given the tomato. It may be grown as a succession crop, after early lettuce, radishes, turnips, etc. It may be used either in the green state for pickling, or dry for seasoning. A ready market for this vegetable in either form should be found among the foreign population of our mining towns.

POTATO, IRISH.

Space is reserved in the home garden for only the early crop of this vegetable, as a rule, since the main crop is generally grown in too large quantity to be included in its rather limited area. To obtain an extra early supply of tubers, a few seed potatoes may be sprouted. Select an early variety, such as Noroton Beauty, Early Ohio or Early Rose, and barely cover with moist sand in a shallow box, which should be placed under the glass of the frame, or in the house, where it is light and warm.. Supply moisture as needed and soon stocky, green shoots will appear and roots will be formed in the sand. As soon as the ground can be worked the potatoes may be taken from the sand and cut into pieces with one or more sprouts and planted. It will be well to cover the sprouts lightly with soil to protect them from the cold. If one is not anxious for such early results as may be obtained from the above method, the potatoes may be planted in the usual

way as early as possible. An application in the furrow of a commercial fertilizer containing about ten per cent. of potash is desirable. If troubled with scabby potatoes, the seed should be treated before cutting, by soaking the tubers for two hours in a solution made by adding one-half pint of formalin to fifteen gallons of water. Potatoes may be kept in a cool, dark cellar, or may be buried in a pit or covered with soil in a pile out of doors.

POTATO, SWEET.

While the sweet potato succeeds best in the warm sandy loams of the southern states, it may be grown in the home gardens of this state, by bedding the same as described for the Irish potato, breakin goff the sprouts and planting in rich garden loam when it becomes thoroughly warmed. It may be best to make a furrow, mix manure or fertilizer evenly in this and then plant the potatoes in the middle of the ridge formed by turning two furrows together over the first. The potatoes should be dug as soon as the vines are killed by the frost, on a bright day, when they may dry quickly. Care should be taken not to bruise them. Sweet potatoes may be cured by placing the for a few days in a warm, well-ventilated room and then should be stored in a dry, cool place.

PUMPKIN.

This crop is usually grown for home use by planting a few hills in the corn field. It will pay, however, to grow in the home garden, some of the small sugar pumpkins. These are of better quality than the ordinary field sorts.

RADISH.

A rich mellow loam in which this crop may be grown rapidly will give crisp, tender radishes. A succession of sowings should be made beginning with the earliest one in the hot-bed and continuing throughout the season, ending with a late sowing in a hot-bed, started in the fall. As a rule radish seed is of a high germinating capacity, and it will save much necessary thinning if the seed is carefully sown.

RASPBERRIES.

The initial planting of the raspberry patch is made with the young plants or suckers which come from the roots of the older plants in the case of the red raspberry. The plants used in the case of the black raspberry are produced by the ends of the old canes taking root and forming new plants, called "tips." Either kind may be set in the fall or spring, although if set in the fall it is well to supply a mulch of strawy manure to prevent the heaving of the roots by the action of frost. The plants may be set three feet apart at first and the suckers or tips allowed to fill in the intervening spaces, forming a hedgerow, in which the plants should be kept thinned to about one foot apart. The old fruiting canes should be removed each spring. The black raspberry canes should be pinched back when they have reached a height of two feet, and the laterals are shortened to about a foot in the spring. The pinching of the shoots is usually omitted with the red raspberry, the canes being headed back in the spring and the laterals shortened the same as for the black raspberry. The bushes should not be allowed to bear the first season, and only lightly the season after planting.

RHUBARB.

A few hills will produce enough of this vegetable for home use and will afford a surplus to can, or to sell. Good roots with which to start the bed may be obtained from seedsmen for a moderate price, and can be divided in the spring or fall after they have grown a few seasons, to make additional hills. Like asparagus, there is little danger of getting the soil too rich for this crop. It is advisable to apply each fall a mulch of manure which should be worked into the soil in the spring. A supply of this vegetable may be had out of season by pursuing the following method: In the fall, just before freezing weather, dig up a few hills which have grown at least three years and allow the roots to become moderately frozen. Later in the winter, (about January first) remove to a cellar or other dark place which may be kept at a temperature of 55° to 60° F. Pack some good garden

loam tightly around the roots and cover them lightly with the soil. Apply water when needed and the shoots will soon begin to appear. These may be gathered for some time, the product being of fine color and flavor. In the spring these roots may be replaced in the garden and allowed to recover from the forcing by not having any shoots removed for a season or two.

SALSIFY OR VEGETABLE OYSTER.

The culture of salsify is the same as that given the parsnip.

SPINACH.

This vegetable, which is so highly esteemed for use as greens, is of very simple culture. Several crops may be raised in a season, as it is ready for use in from thirty to sixty days from planting. It may be sown late in the fall and carried through the winter by protecting with straw. It may be grown as a companion crop between longer growing varieties. For example, as soon as the ground can be worked, two rows may be planted, one foot apart, between what will later be two rows of beans. The beans may be planted when it is warm enough, without disturbing the spinach, and the spinach will be mature and may be harvested before the beans are large enough to be injured by its presence. The spinach may also be planted before a later crop, or in the fall, after an early crop of some kind has been grown.

SQUASH.

A few hills of summer squash will furnish all that is required of this vegetable before the Boston Marrow takes its place in the early fall. The summer squash may be planted in hills four feet apart. The winter varieties should be given from six to eight feet each way. They are easily injured by frosts, so should be gathered before these occur. They should be cut from the vines and put into piles that may be covered readily, until the stems have thoroughly dried. Care should be taken not to break the stems or bruise the squash, as decay will soon take place under such circumstances. The squashes may be canned or they

may be kept until well along toward spring by storing in a cool, dry place. They are excellent boiled or for use in pies.

STRAWBERRIES.

The farmer's home garden is not complete without a strawberry bed large enough to give him a bountiful supply of this delicious fruit in its season, with a surplus to sell and to preserve for use in the winter months. Plants may be secured from a nurseryman or seedsman with which to start the bed, a few hundred being enough. A supply of plants for future needs may be grown at home, so that the initial expense is very slight. There are several systems of growing this fruit, but perhaps that best suited to the home garden is the narrow matted row. The plants are set in the spring, in rows about four feet apart and the plants about a foot and a half apart in the rows. As the summer advances, runners will be sent out from these plants. The cultivator should be run in the same direction each time. It will throw the runners in toward the original row, where they will take root, forming a bed of plants about one and a half feet wide. The plants should not be allowed to grow nearer than about six or eight inches apart. Those thinned out in the fall may be set closely in a bed and used to form a new bed in the spring. A light covering of straw should be placed over the plants after the ground freezes to prevent the tearing of the roots from the heaving caused by frost during the winter months. In the spring, if it is not put on too heavily, the plants will come up through the straw, which will keep the berries away from the ground and free from dirt. The season following the one in which the plants were set, the bed should produce a full crop. It will perhaps pay to fruit it another year, but it is best to start a new bed each spring and discard the one which has borne two crops. Strawberry blossoms are either perfect or imperfect, according to the variety. That is, the imperfect blossom has pistils but no stamens. It is therefore necessary when planting those varieties having imperfect blossoms to put them between varieties having perfect blossoms in order that they may be fer-

tilized and bear fruit. Seedsmen's catalogues generally describe this point for the different varieties.

TOMATOES.

For an early supply of tomatoes, the seed should be sown in February or March, in the hot-bed or cold frame. In about a month from planting the seedlings should be transplanted to about two inches apart. In about another month they should be transplanted again, either to four inch flower pots or into soiled berry baskets. As soon as it is warm enough they may be easily transplanted from these to the field without checking the plants. The tomato prefers a sandy or gravelly loam. Earliness of the fruit is hastened by training to one stem and tying to stakes. The plants may be set closer together when this is done, but for the main crop it will be best to set the plants on ridges made by plowing two furrows together. The green tomatoes which fail to ripen may be used for pickling, or those most advanced may be ripened by placing them under the glass of the frames.

TURNIPS.

The turnip may be grown as an early or as a late crop. For the first early, seed of Early White Milan may be sown as soon as the soil can be worked in the spring. Later, successive sowings may be made of White Egg. For the winter crop seed of White Egg or Am. Red Top may be sown in July or August. Turnips may be left in the ground until freezing weather, when they should be pulled, topped and covered with soil in piles in the field, or stored in a pit or cellar.

HELPFUL BOOKS ON GARDENING.

The following list of books, and their publishers, is given for the benefit of those who may wish to study the subject of gardening more in detail.

Principles of Vegetable Gardening—Bailey, Macmillan & Co., New York.

Bush Fruits—Card—Macmillan & Co., New York.

Vegetable Gardening—Green—Webb Pub. Co., St. Paul, Minn.

How to Make the Garden Pay—Greiner.

The following Farmers' Bulletins may be obtained free of charge by addressing the Secretary of Agriculture, U. S. Dept. of Agr., Washington, D. C.

No. 35. Potato Culture.

No. 61. Asparagus Culture.

No. 62. Marketing Farm Produce.

No. 77. The Liming of Soils.

No. 203. Canned Fruits, Preserves and Jellies .

No. 213. Raspberries.

No. 220. Tomatoes.

No. 254. Cucumbers.

No. 255. The Home Vegetable Garden.

No. 256. Preparation of Vegetables for the Table.

No. 266. Management of Soils to Conserve Moisture.

No. 282. Celery.

No. 289. Beans.

No. 324. Sweet Potatoes.