VIRGINIA

Horticulture

LANDSCAPE GARDENING ANNUAL REPORT 1935

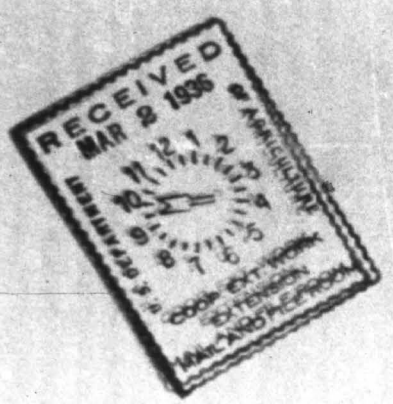
Index		Page
6 h 3.71	Adult result demonstrations	4-6
13 b 3	Landscaping home grounds	1-6
13 b 5	Landscaping public buildings	6
FCL- 3		

REPORT FILES
OFFICE COOPERATIVE
EXTENSION WORK

ANNUAL REPORT

of

Mary C. McBryde
Specialist in Landscape Gardening
1936



Days in field	133
Days in office	163
Days leave	18
Days sick leave	5
Counties visited	40
Visits to counties	63
Visits for home demonstration agents	46
Visits for farm agents	10
Visits for schools and clubs	7
Clubs and committees met	34
Meetings	105
Attendance at meetings	1911
Community demonstrations	87
Other demonstrations, lectures and home visits	411
News articles and radio talks	9
Miles traveled	16343
Letters sent	578
Bulletins and circulars sent	2755
Plans sketched in field	274

This work employs one specialist full time. The specialist is Mrs. Mary Comfort McBryde. The project is a minor in horticulture. It is used chiefly with women's groups as a home making project. It is also used by farm agents, and by garden or civic groups cooperating with extension workers. Subject matter is under supervision of the horticultural department. Field work is under direction of the Extension Home Demonstration Agency.

As a project in landscape gardening, the work is based on proper use of land as related to human needs. Underlying the teaching are principles of proper uses, treatment, and care of land, with proper emphasis on beauty and recreational values as well as on utility and production on commercial values. Attention is drawn to errors of:

Waste of soil, water, plant food and materials.

Misuse of plants; destruction of wild life.

Neglect or defacement of outdoor beauty.

Failure to relate to homes and their surroundings the normal needs of light, air, sunshine, open space and genuine outdoor interest.

As extension work, the goal is improved conditions for rural homes, and rural living, especially for average homes.

The project emphasizes ornamental horticulture only as it relates to landscape gardening and home making.

Each specialist must use his best assets of training and experience in his work. In this case, training in design and its application to simple every day uses, and long experience in gardens rather than in

nurseries and laboratories, are the assets.

Perhaps the best use of the specialist, therefore, is for quick analysis of garden needs, and insight into ways and means of meeting such needs in simple, practical, attractive ways. As landscape gardening has its "art" side, it is best taught through seeing. The best way to show it is by developing projects according to a proper plan. When the project has been followed as it grew, and when it is successful, it is a convincing and a persuasive demonstration. It is evidence that good results can come at minimum cost.

1. One goal for the year was to start more community demonstrations in counties. It is a return to goal with which this project began, namely to develop a number of suitably improved yards where the home demonstration agency wanted to place them. Reasons for this return may be a growing appreciation of landscape service as a public, as well as a private benefit, and a belief in the prediction of leisure time ahead. Experience in field work brings the specialist to it better prepared for dealing with larger numbers of projects. Other goals were:

2. To work out a simple outline that could be used to start any demonstration, guide a group in scoring, planning and judging, and offer a series of topics to be studied and discussed at following meetings as a project developed as new ones were taken.

3. To assist when possible projects using emergency funds for improving public properties.

4. To cooperate with the conservation committee of the garden club of Virginia in their movement to conserve holly as a marketable farm crop.

5. To contribute six articles to the Extension News on flowers and on care of ornamentals.

6. To respond as far as possible to any agents' calls for assistance at meetings or on landscape projects.

7. To colloborate as far as possible with garden, civic and school groups, especially those working with extension agents.

8. To keep notes on what landscape and horticultural authorities recommended the current year as popular teaching.

Some extra tasks, done largely in extra time, were worth while as experience, and, incidentally, as a means of calling attention to advantages of home demonstration work. Some of this work was: Reviewing landscape section of a thesis, for the Director of Vocational Agriculture, preparing the landscape section of an article on Virginia gardening, compiled by Director of Experiment Station; Taking part in garden club programs; judging flower shows and flower arrangements; assisting garden and civic committees with plans for village parks, and other public improvements, taking part in the College meeting of the out of school youth training groups.

Community demonstrations were started in counties Alleghany, Henry, Albemarle, Nottoway, Powhatan, Henrico, Essex and Spotsylvania. There were eighty-seven demonstrations, about half of which were completed as had made good progress, nearly all of which had achieved something worth while. These demonstrations have the following features:

1. A community yard as a project.
2. Meeting of home makers group to score and plan.
3. Use of a simple method of scoring and planning.
4. Sketch plans to illustrate at meeting, to leave with the demonstrator.
5. Follow up work during the year.
6. Meeting to judge and appreciate the achievement.

Successful achievement gave pleasure to both owner and group, and was understood as well as enjoyed. Some trained assistance has been given for benefit of both person and group.

Even projects partly finished or fairly successful are efforts in the right direction and are usually acceptable. For the demonstration suggests prevention as well as cure, and so helps to avoid several kinds of disappointing results. And whatever else the result, the group has had a practical lesson in landscape gardening, of a kind to prepare for other lessons that may be related to it. A copy of the outline that is used to start, guide, and follow up a demonstration is here included on page 7. Improvements are often satisfactorily made by those getting ideas and advice at the meetings. Some demonstrators were using loans from Federal Housing or Home Owners Corporations.

Improvements noted are: Better entrances and better planned driveways, better turns and parking for guest cars, suitable walks, wider, better trenched planting beds, better fencing, roof and ground gutters, lattices for doorway vines, hand rails for doorway steps, quick foliage screens enclosing back door yards, new and improved lawns, rock lined pools for surplus water, enlarged living yards, suitable seats and tables, stone edgings for trim, stone walks, suitable painting and repairs, effective use of local and waste materials, propagated boxwood and other valuable planting material, good color effects in flower borders, better arrangement of flowers "on hand", into color and season effects, better flowers and shrubs chosen for planned uses, better provision for parking and turning guest cars, provision for children's play and pleasure, better management of soil, wire grass smothered with old tar roofing, removal of old shacks, junk, useless objects, and dead trees and stumps. As a whole, yards are brought into better relation with houses. Young home makers have

taken pleasure in working out the best plans for making the most of ground space in new yards. By taking advantage of existing conditions instead of changing them, by doing simple things well instead of pretentious things poorly, by using what is at hand, by exchanging and propagating plants, and by using family labor or cheap labor, results have been realized at remarkably small expense. At meetings where both interior and exterior improvement was judged, flowers were a beautiful feature in the decoration of rooms, as well as yards.

Public projects were served in 21 counties. These were schools, churches, cemeteries, community centers. Village parks, courthouse greens, Problems were mainly of grading and building, sometimes badly handled and causing trouble. There is greater need and demand for this type of service than Extension Agents can meet. But it is worth while. Plans for ground work made for properties lacking funds to develop them, have been brought out and used when emergency funds were available. A good example is Fairfield school in Rockbridge county, where the specialist met with a group to discuss the landscape plan. When relief funds were spent there, results were quite satisfactory. The meeting used one evening of spare time, but it has been a demonstration, judging by requests for "help like Fairfield had", that have come from other school committees.

Holly-crop-information was broadcast during the marketing season, and mimeographs and bulletins sent to holly counties. The need in this conservation work is to find markets for the crop, and plans are made to find them the coming year. The cooperation of others in the department is promised. Pruning, propagating, standardizing and specializing products and finding commercial and special markets are to have attention. Farmers' Bulletin No. 1693, was the one sent out.

Six Extension News articles were contributed. Literature reviewed for popular teaching points emphasized:

Planning before Planting.

Planning House and garden together

Planning for site and exposure

Preparing soil for planting.

Better understanding of plant life

Conserving soil and water

Birds in gardens.

The beauty of organization.

Simple methods of planning flower borders

New or improved flowers

Design in remodeling structures

Homes in relation to community planning and conservation

Land values and land prices.

The specialist would profit by learning: How other specialists plan demonstrations, what landscape phases or features they emphasize, what training is required of them, what results are expected, what is the best contribution landscape gardening can make to extension home or community work; also, where are short courses in photography offered in summer; also, what are good ways of encouraging nature study. Can a landscape leader be trained otherwise than on a project? Are there any outstanding landscape methods and programs in extension work recommended for study by specialists?

Respectively submitted

Mary C McBryde

(Mrs.) Mary C. McBryde
Landscape Gardening Specialist

OUTLINE FOR DEMONSTRATIONS

The four things to plan for landscape improvements:

1. Layout - the floor plan of the yard.
2. Construction - Work on ground, structures, repairs.
3. Planting - Placing greenery or flowers for use and beauty.
4. Upkeep, care of the yard, reckoned in terms of time, strength, skill and cost.

Items to consider in planning Layout:

a. Buildings - Position on lot
Set back
Footing
Air
Sunshine
Views
Architecture

B. Main yards

Front yard, approach
Back yard, service
Living yard, garden

c. Main spaces

Traffic space
Lawn space
Play space
Planting beds

d. How areas connect

By walks
By views

e. How areas separate

By ground work
By structures
By planting.

f. Important view points

Public road
Entrances to farm and yard
Entrances to areas and spaces
Doors and windows
Porches, terraces, etc.

g. Important lines

Property lines
Building lines
Traffic lines
View lines

h. Important points

Where lines start, end, cross
Where lines center or turn
Centers of balance in areas and structures.

i. Open spaces

Traffic
Lawn
Openings for views, distant
Blank wall space
Still water space

j. Filled spaces

Tree groups and shrub masses
Borders or gardens
Built on or furnished spaces
Planted walk or water space
Gates and doors (closed)
Enframed garden views, near

Items to consider in planning <u>Construction:</u>

a. Ground work

Grades, levels
Traffic spaces
Gutters, drains
Paving, surfacing
Rock work, water work
Soil preparation.

b. Structures

Buildings and outbuildings
Gates and fences
Shelters
Furniture
Ornaments
Interests

c. Repairs

Painting
Remodeling
Mending

Items to consider in Planning Planting:

a. Service planting

Shade, wind break
Hedge, screen
Ground cover, soil binder
Household uses

b. Greenery

Lawns, foregrounds
Hedges, borders, backgrounds
Leafy masses, filling, screen, frame
Green lines, edges, rows
Green slopes, decorative groups, specimens
Green mats, ground cover
Evergreens, winter effect

c. Flowers

For seasons
For color
For continuous bloom
~~With shrubbery~~
In flower borders and gardens
In cutting gardens.

d. Handling Plants

Transplanting
Congenial grouping
Exposure
Arrangement
Spacing

Items to consider in planning Upkeep

a. Exacting work in growing Season

Cutting grass, clipping hedges
Trimming edges of lines
Pruning and training
clearing away litter

b. Seasonal work

Spring: Clearing
Spraying
Pruning
Planting
Feeding
Weeding
Summer: Weeding
Podding
Watering
Spraying
Fall: Transplanting
Trenching
Mulching
Spraying
Clearning
Winter: Protection

c. For easier Upkeep

Open lawns
Simple lines
Borders, not beds
Clipping and shearing
Direct routes
Ample traffic space
Use of fillers, covers, borders
Restricted traffic
Plants permanent and hardy
Plants suitable size and growth
Plants of tidy habits
A schedule of work
Tasks allotted
Proper tools and tool house
A simple orderly arrangement

d. Avoid

Too much variety
Too much crowding

Landscape work is a permanent type of improvement. It takes time, thought, strength, skill, materials, and taste. Orderly methods are needed to save from waste and disappointment.

Land has values for production, conveniences, and recreation. Landscape gardening plans to use and conserve them all.

17,634 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
State of Virginia, Va. A&M College & Poly. Inst. & U.S.D.A. Cooperating.
EXTENSION SERVICE

This is the outline of a talk on Holly Harvesting broadcast from V.P.I., November 30, 1934, in cooperation with a movement of conservationists to save the supply of holly in Virginia. Holly conservation offers a means of adding considerably to farm incomes. The measure of tagging holly deserves approval and support of everyone in the state.

1. Holly is a marketable crop, and a profitable crop. The Groonenbergs of Lynnhaven River, have harvested holly 27 years from trees that are still in prime condition and productiveness. Holly trees live several times as long as people; therefore, the Croonenbergs have a permanent source of income. Since the demand for holly is increasing and the supply is decreasing, their trees are growing in value and their crop will bring higher prices as Christmas greens and as cuttings for propagation. One of their trees is already leased to a nurseryman for taking cuttings.

2. Destructive harvesting is eliminating the natural growth of holly, especially in areas near large cities. From Massachusetts to central New Jersey the holly is gone except on protected properties. The center of Holly production is moving south as the supply is being destroyed in northern areas; it is now in Delaware and Maryland; it is coming into Virginia.

3. No figures are available to show cash income from holly in Virginia, but there are authentic figures to show that in Delaware holly brings in $400,000, of which $100,000 goes to small farm families; and that in Maryland in eight counties on the Eastern Shore, holly brings $150,000, an average of over $18,000 to a county.

Carloads of holly from Virginia are sold by people who do not own it, but take it from farm lands. Having no interest of ownership, they cut down trees whole, or bark and strip them until their value is ruined. Injured trees recover slowly, if at all. Young trees take from 12 to 20 years to reach harvesting size. The natural planting from seeds (in the berries) is reduced as the berry-bearing trees are destroyed. Hence, the supply is diminishing, though the demand is increasing.

If farmers are losing their holly crops they are losing money. It will pay them to save their trees, and to propagate more for future profits.

4. For information on "Growing Holly on the Farm", see U.S.D.A. Farmers' Bulletin 1693. For information on "Deterioration of Christmas Holly in Transit and Storage", see U.S.D.A. Circular 207. For scientific information on holly culture, write for bulletins and information to Boyce Thompson Institute for Plant Research, 1086 North Broadway, Yonkers, New York.

5. Foresters and garden club members are just now sponsoring the practice of tagging holly sent to markets, to certify that it is harvested in keeping with state laws and forestry principles. They issue tags for owners to use on their products. For information on "Tagging Holly This Christmas in Virginia", write immediately to Mrs. Henry H. Little, Secretary, Conservation Committee, Garden Club of Virginia, North Shore Point, Norfolk, Virginia.

As a conservation measure of value to farmers and to the state, owners, buyers and especially dealers who handle holly in quantity are urged to recognize tagging as the best means of saving holly and of forcing "boot-legged" holly from the market, at least in wholesale lots.

Minor Projects - Outdoor interests for girls doing garden work or home improvement.

Such projects develop skill and taste in handling flowers; appreciation of landscape work; interest in conservation. They are suggestive of garden club work, which is one of the well organized useful activities in which modern women engage.

Literature available to those wishing to use it exists in: Farmers' Bulletins and Circulars; Circulars from the U. S. Bureau of Plant Industry; and in free or low cost publications from other public and private sources.

Projects suggested are especially suited to girls.

I. Herb Growing: An old, thrifty, garden custom recently come into fashion. Plants grown in herb gardens are: 1. Savory Herbs for seasonings: 2. Sweet Herbs for perfumes and for moth repellants; 3. Simples for home made lotions. dyes and medicines.

A. Grow a few useful herbs in vegetable gardens for home use, fresh or cured. B. Make a separate herb garden including appropriate flowers. C. Collect recipes for using herbs and try out some of the best. D. Use for sale or for gifts: Fresh herbs in "Soup Bouquets", Packets of fresh, cured herbs; small pots of parsley, dwarf sweet basil, mint-geramum, lemon verbena, etc., sprays of sweet herbs in organdie envelopes, small pillows of sweet herbs. E. Make some herb products for home use like: Tarragon vinegar, mint vinegar, celery salt, nasturtium-seed capers, gumbo file powder, mint jelly, candied mint leaves, incense, radiator bags, rose honey, rose vinegar, dyes, etc. G. Feature a small attractive exhibit of herbs at a meeting. H. Collect some stories of the quaint uses of herbs in former times, and thequeer beliefs once held about them.

II. Flower Growing

Flower growing and flower arrangement are arts in which girls can learn to excel. Flowers are always in demand for daily cheer, for ceremonies and celebrations, for gifts and remembrances. There are markets for quality blooms of choice species and varieties and for blooms in seasons when flowers are scarce in gardens. Flower shows are a popular social form of education designed to teach beauty, quality, and decorative value in flowers and foliage for use in house and garden.

A. Grow some choice flowers and study how to use them most effectively in house or garden. B. Organize a small group to stage and judge a junior flower show. (This show would be an attractive feature at a meeting). C. Sell some choice flowers on an Extension market to make pen-money. D. Grow some flowers in house or in garden for gifts. (Potted bulbs make gifts from Thanksgiving to Easter). E. Collect information on flowers by: Visiting gardens, nurseries, flower shops several times in the season; collect catalogs from the best nurseries; make a collection of clippings on flowers, their culture, arrangement, etc.; organize a flower club to study some phase of flower work. F. Keep a garden record of personal experience.

III. Landscape Appreciation

It is landscape work to create or preserve intelligently whatever is useful or beautiful in the out-of-doors. It may be done in behalf of home, community, or natural surroundings. Its object is to give people benefits and pleasures out of doors.

A. Discuss some things that have landscape value. B. Find some of these values at a familiar home, street, school, or natural place. C. Discuss landscape values for a home. D. Score some homes for these values. E. Discuss out of doors pleasurs in; Games, lawn parties, picnics, cooking, gardening, birds, wild flowers, hikes, drives, etc. F. Build an out door fireplace and use it. G. Collect means and recipes for out door meals. H. Collect some specimens of native plants for VPI Botony Department. I. Learn what wild life needs protection in Virginia. J. Study holly as a farm crop. K. Make a wild flower terrarium. L. Make a herborium of leaves from native trees. M. Get information about these trees. N. Collect articles and illustrations about some bird, butterfly or flower. O. Learn how wild life should be protected. P. Discuss views and what they mean to people. Take pictures or write descriptions of familiar views, good ones or bad ones. Q. Press specimens of a few of the leaves or flowers you like, mount and frame the best for a picture. R. List things you can observe about the roads you travel, and discuss whether or not they are useful or beautiful landscape values.

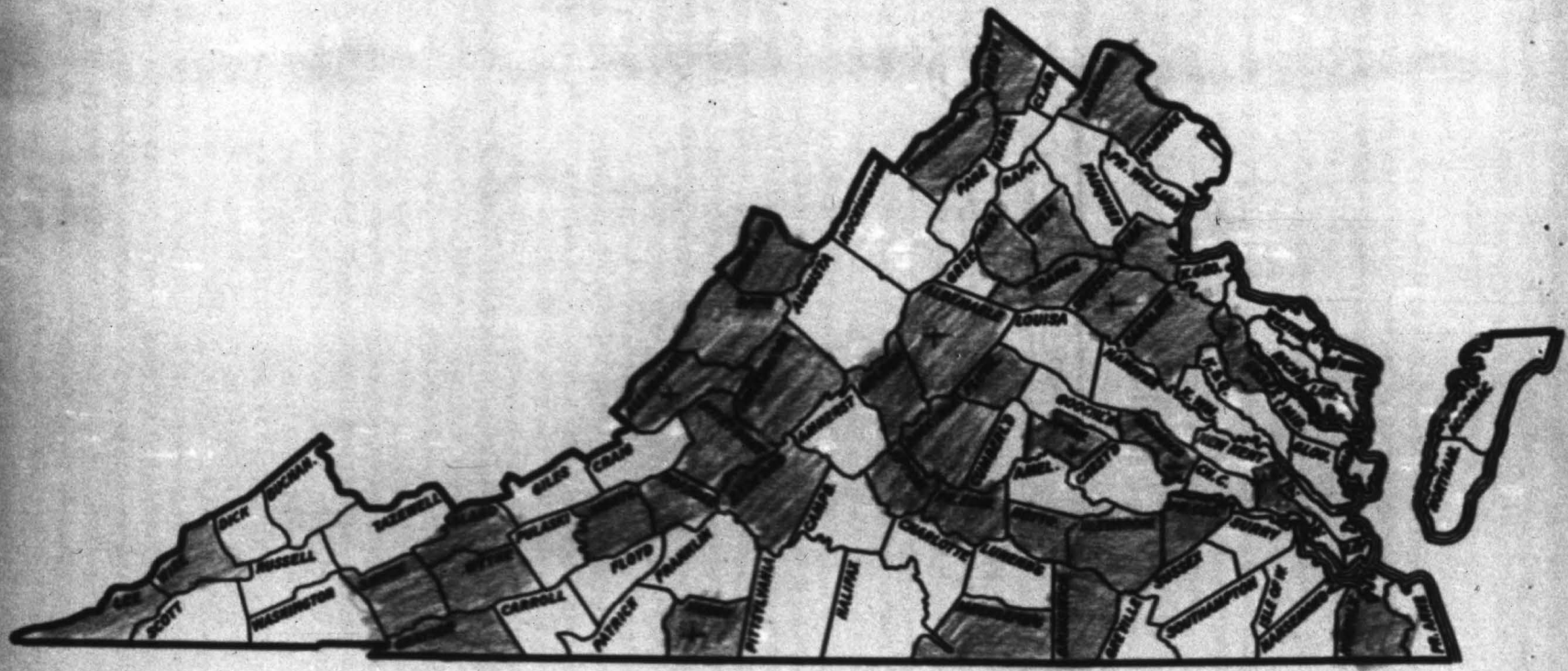
Yard Work: Care of grounds is fine work that everyone is not trained to do. The best gardeners work with knowledge, skill, and good taste. They not only trim grass and cut hedges, they do it at proper times in the right way. They know the needs of grass and shrubs. They understand garden beauty, and tend it like good craftsmen. The landscape gardener is next to the landscape planner. Good gardeners begin young. Boys and girls can learn to garden by taking care of their own yards, and making them pleasant places to live in and bring their friends to.

Some Yard Duties:

Cut the grass and trim the edges once a week. Clip hedges three or four times a season. Pick up trash and litter frequently. Cut off seed pods as soon as they form. Pick off brigs and worms when they first come. Take out weeds while they are small. Take out dead stuff in early spring. Stake dahlias and gladiolus before they fall. Keep gates and fences neat. Smooth up driveway after rains. Clean the walks of dirt or weeds. (Do it all so well you like it).

Some other things to do with skill and taste: Make a garden seat and table. Make houses and feeding stations for birds. Make a stone path to edge a flower border. Make stone or grass gutters. Make something your mother likes for the garden. Make an out door fire place. (Put all in suitable places).

Some things to Learn: Care of lawns: Care of shrubs and vines. Care of trees. The best grass for your soil. The best hardy plants for your locality. What native evergreens you can transplant. How to make good looking concrete walks. The best looking way to paint your house or fence.


SCOTT
RUSSELL
WASHINGTON
CARROLL
PATRICK
FLOYD
FRANKLIN
PULASKI
GILES
CRAIG
BUCHANAN
DICKENSON
SOUTHAMPTON

BETTER YARDS IN SPOTSYLVANIA

Mary C. McBryde, Landscape Specialist

Last March Mrs. Paul Harris of Spotsylvania county entered a yard improvement contest in which members of the Belmont home demonstration club were given a chance to have their yards scored to show what improvement was needed most, and to plan and make that improvement.

Some needed the layout changed to bring yard and house into better relation; some needed construction work in repairs to buildings and fences, and in grading and drainage; some were ready to improve their plantings; others needed better care of property. In the six months of growing weather after March, a good deal had been accomplished, as a second scoring showed.

Mrs. Harris' work, however, had achieved the most evident results. This is true partly because her yard needed things which, when added, make the most noticeable improvement in appearance: namely, lawn, better approach, driveway and walk, better grades for drainage, a better back yard. But it is also true largely because the whole family worked to plan and achieve as much as possible in the spring and summer months. Every member can point to his contribution in ideas or work. Money has not yet been a problem, for so far, expense has come to less than three dollars.

A picture of the Harris home in March would have recorded a prim, frugally proportioned old house, weathered a silvery grey, its blinds a faded green; standing rather too stiff and tall under its gabled roof and over its half story brick base; tall chimneys at each end accenting its height; front steps leading severely to the front door and independent of doorstep or handrail; all around, forest trees, and under them the bare earth floor with criss-cross marks of vehicles; everything beautifully neat and clean, but with no design for open air living.

Now the picture is changing. A green lawn spreads under the trees, flattering the old house, and lending a homey, permanent air to the place. From the driveway, which has found its place at a slightly lower level than the lawn, a step leads to a walk; the walk leads to the front steps, is of suitable width and of local stone, has good design and workmanship, and is justly the pride of the youngest son, who made it. Grading and ground gutters of stone are stopping washes in the soft soil; and the back yard, on which the kitchen opens at ground level, is enclosed with a promising growth of Amoor River privet, already beginning to count as a screen to break the view of the wood pile and other utilities from the house.

It is worth mentioning, by the way, that these privets were grown from cuttings taken from stout branches, several seasons old, instead of from little sprigs, and have been watered to give them a good start: they were a gift from a neighbor. They have made a remarkably fine growth in height and spread. The plan is to let them grow into natural shape, and to use them as background for a flowering shrub border.

On each side of the step to the front walk large stones are placed in which Rock S (Cotoneaster horizontalis) will flatten its branches of evergreen foliage and red berries. Along the driveway as it goes to the rear, shrubbery is planted; along its low bank at the front, Vinca minor is planted to bind the soil. The driveway, incidentally, has turning room and parking space for guests at one side of the front lawn, thus allowing some seclusion for the back premises. Along the edges of a stone gutter laid to catch the drip from the front eaves, ivy will trail to make a green border and hold the soil. (This is on the shady side of the house.)

This is the extent of improvement done in six months. The plan is to go right on with handrails for front steps; simple lattice to carry a bitter-sweet vine over the front door; plantings of azalea, laurel, deerberry, at front house corners and foot of steps; benches by the kitchen door; completed grading, walk, and planting in border for back yard; a climbing rose over the high back porch; ground covers of plants with soil-binding roots, like violet, creeping phlox, hepatica, galax, veronica, to grow beyond the lawn and fill in bare places in the grove.

On the east side, along the path to the spring, a wild garden is to grow and a pool is to be made just below the yard level to hold water the gutters carry through tiles from roof and yard. Seats and tables will be an invitation to enjoy all this by seeing it close by.

Some repairs are needed to the tops of chimneys; the back porch needs new steps; and possibly the house needs painting, though the grey of the boards is more attractive than any paint could be, if they are seasoned to resist the weather. If the house is painted, shall it be white? There would be no objection to white for a house of Colonial type, placed where shadows fall across it from the trees. But probably white would seem to set this house too high on its brick foundation, by reason of the strong tone contrast. Grey, lightish, with a yellowish warmth would blend better with brick red and with the winter color of bittersweet berries. In any case, the blinds would be painted a color close to their present dullish green.

These last mentioned improvements will take time, but meanwhile this home is growing from the ground up in landscape beauty suitable for a simple, old house tucked away in the trees. As the individual needs, economies, and possibilities of the place are considered, the gardening becomes distinctive. Mrs. Harris is trying to make each detail accomplished count in the effect of the whole, which means that she is trying to make everything "go together." Success in this brings beauty.

If improvements are done as planned at all homes entered in this contest, careful judging will be required to award the prizes which are to be given at the end of another summer.

POULTRY

CHECKING UP ON THE BREEDING FLOCK'S VITALITY FOR 1935

During the coming year much of your success with your poultry flock will depend on what kind of breeders you use as parents for your 1935 crop of birds. This will hold true not only for egg production, but also for the production of broilers, baby chicks, pullets, table fowl, fryers, breeding cockerels, etc. It also holds true in the turkey flock where turkey eggs are being produced for hatcheries, or poults for the trade, or perhaps market turkeys for the holiday trade.

Remember, when you select your breeders, pick your super-birds, choose a nice, clear, sunshiny day; otherwise your birds will not appear as well as they should, nor will you feel as much like staying out in your poultry house long enough to make your final choice.

This choice or selection should be based on vitality first, for vitality or constitutional vigor implies physical fitness. For the sake of clearness, let me say that the term constitutional vigor means that a bird is endowed with such health and physical fitness as to be able to withstand unfavorable environmental conditions, to resist disease, to produce offspring most efficiently and to be capable of living a relatively long life.

When you look your flock over for your final choice, look for the visible evidences of constitutional vigor. Before a bird can be abundantly vigorous, it must have good health. A bright eye and glossy plumage or feather coat are indicative of health; and the body must be of good proportions, and show strength. Watch each bird for its general behavior as action is the physical expression of energy in all bird life. They show their physical vigor by their courage, in their running, flying, foraging, scratching, as well as fighting. Birds of low vitality are slow of motion, inactive, and seem to be tired during the daytime.

Males, if vigorous, will be found to mate often, crow loud and often, and will act gallant while with their mates. They will seldom eat while with the hens, but will constantly call their mates for food which they may expose while they scratch in the litter or soil. The vigorous female will be one in which the character of "coquetry" is well developed. That is, these birds seem to attract the sire; they remain by their side and obtain much of the food found by the male. Such birds are generally producers of a large percentage of fertile eggs from which early-hatched large, livable chicks may usually be obtained.

Early rising and late retiring are good signs of vigor. If you find hens which persist in roosting throughout the day, it is safe to say they are low in vigor. Generally the poor layer is a persistent daytime rooster, or, when let out of doors, hovers under some such place as the bay window or other protected spot.

Birds which are physically strong and active have good appetites. They digest their food normally during the night and at the first sign of dawn are down onto the floor or out in the field eagerly searching for food. You might say, action waits on appetite, and good appetite waits on good digestion. High producers will be found most frequently at the mash hoppers. A good bird, when released from a trapnest, goes directly to eat and drink.

Fullness or the amount of food found in the crop of the bird after it has gone on the perch at night is a very reliable guide to the health and productive condition of the fowl.

To the characteristics already given may be added a bright, blood-red face, comb and wattles, and a lustrous coat of feathers held close to the body.

In nearly every case the best birds will be up to standard weight as is required by the American Standard of Perfection.

Last, but not least, a healthy fowl, no matter whether chicken or turkey, will be found to stand upright on well developed legs. The legs will be closely scaled and rather warm to the touch. Seldom will a healthy, vigorous specimen stand with the hocks close together. Generally they are far apart and straight. Breast bones of healthy birds are generally straight, long and well meated.

COOPERATION IN VIRGINIA

Halifax Terracing Association

The control of soil erosion by terracing according to the methods employed in the erosion control demonstrations in Pittsylvania county has aroused great interest among the progressive farmers in the surrounding counties. The alert members of the men's social clubs in Halifax quickly recognized the great need for terracing in their county and promptly started a program which has resulted in the organization of the Halifax Terracing Association, which is already terracing land at a charge between $2.50 and $3.00 per hour.

Through the county agent and the agricultural extension engineer, the leaders of the clubs arranged for demonstrations of terracing by a powerful caterpillar tractor and heavy duty scraper. This outfit does the work much more efficiently and effectively than the horse-drawn home made terracers. The demonstrations aroused such interest that it was decided to form a terracing club and make arrangements for a terracing outfit. In a short while over 2000 acres were signed up for terracing.

Careful study was made of different methods of financing the purchase of an outfit, which costs between $4,200 and $4,500. The machinery company offered to lease an outfit at a monthly rental of $250 to $275, with an option to buy and apply the full amount of rental payments to the purchase price. Interest would be charged on the purchase price of 6 percent per year and interest would be allowed at the same rate on the rental payments previously made. This arrangement was contingent upon some guarantee that the rental payments would be made. In response to popular demand from the farmers over the county, the Halifax board of supervisors agreed to underwrite the project for the current fiscal year to the extent of $1,000, the amount they had appropriated for agricultural purposes.

The possibility of financing the terracing outfit through one of the Farm Credit Administration lending agencies was also studied. Under the act the Production Credit Association can loan only to farmers. The only way the project could be financed thru a P. C. A. would be for the members to borrow about $100 each to invest in the capital fund of the terracing association. The cost of such small loans is too high to make this method practicable. The Baltimore Bank for Cooperatives can lend only to cooperative marketing and cooperative purchasing associations and so cannot lend to a terracing association. However, this bank agreed to give careful consideration to an application from the Halifax Purchasing Association for a loan to finance the purchasing of the equipment for the terracing association. However, such a loan would not exceed 60 percent of the value of the outfit and the Purchasing Association would have to charge 6 percent interest in order to cover the risk involved.

Early in December representatives from the men's clubs in the different districts of Halifax county met to consider the problems and voted to incorporate the Halifax Terracing Association. Incorporating limits the financial liability of the members to only what each may owe the association and enables the association to make legal contracts for equipment and operating purposes. Directors were elected to represent each district of the county and a form of agreement between the association and the individual was adopted. This agreement sets forth what the Association agrees to do in terracing the land of the member and what the member agrees to do in carrying out the program, including paying for the work as done.

The directors elected officers and arranged to lease a terracing outfit with an option to buy. They also made plans for an agricultural engineer to manage the terracing operations under the direction and supervision of the county agent and agricultural extension engineer. This assures that the terraces will be laid off correctly and properly constructed. In order to keep the cost down, it was decided to start operations in the section of the county where the most land had been signed up for terracing and to secure additional members on adjoining farms, so that the tractor could move from one farm to the next and avoid long, expensive moves. If farmers in other sections sign up sufficient acreage to keep another outfit busy, the directors indicated their willingness to provide an additional outfit.

Interest in terracing is growing in other Southside counties, particularly Charlotte, Mecklenburg and Nottoway. Farmers in these or other counties who want their land terraced by one of these outfits should see their county agent about organizing a terracing association. It is feasible to start operating an association with one of these expensive outfits when 2,000 acres are signed up. The charges amount to from $2.50 to $3.00 per hour that the outfit is working; this covers depreciation and paying for the outfit in less than two years time. The cost per acre averages around $1.00 per acre for land that is not steeper than a 10 percent slope.

Fertilizer Association Improves Service

Heretofore the Halifax Purchasing Association has been unable to provide its members with fertilizer for their plant beds and other early spring requirements because it has made a contract with a fertilizer manufacturer to make up the fertilizer after taking competitive bids. The Association joined the Farmers Cooperative Fertilizer Purchasers in the spring of 1934 and secures its fertilizer direct from the mixing plant of the cooperative at Kenbridge. This arrangement made it possible to pay the members a cash patronage dividend of $2 per ton on 1934 purchases, which is about twice as great as any previous patronage dividends. By continuing membership in the Kenbridge cooperative, the Halifax Purchasing Association is able to maintain a small supply of fertilizer at points throughout the county from which the members can secure their requirements during the late winter and early spring, prior to the time for securing the main supply delivered direct to their farms from the co-op plant.

Audit Time

The fiscal year of many cooperative associations runs with the calendar year. Many by-laws call for an annual audit with a report to be given the members at the annual meeting early in the new year. Some by-laws call for an audit by an outside accountant; other by-laws call for an audit by an auditing committee.

The members should always insist upon an audit by a qualified outside party to insure a thorough and accurate review of the year's business. The cost of such an audit is good insurance that the business is being properly run. In order to help keep down the expense of such audits the Division of Markets of the State Department of Agriculture is offering a special audit service to cooperatives. Small organizations that feel unable to stand even this moderate audit expense may communicate with the V. P. I. Extension Division regarding an audit.

The Virginia Agricultural Situation

WHAT TO PRODUCE—HOW MUCH TO PRODUCE—WHEN TO SELL

Foresight springs from intimate knowledge of the past

Prices on Virginia farms, as reported by the Virginia and the United States Departments of Agriculture, show 6 increases and 1 decrease during the month. During the year the largest increase was in apples, while the greatest drop was in potatoes.

	VIRGINIA PRICE				RELATIVE PRICE Compared with av. of 100 during 1910-1914		
	Dec. 15 1934 (now)	Nov. 15 1934 (mo. ago)	Dec. 15 1933 (yr. ago)	Average 5 years 1910 to 1914	Dec. (now)	Nov. (mo. ago)	Dec. (yr. ago)
Farmers' purchases (U. S. retail)						126	116
LIVESTOCK:							
Hogs, per 100 pounds	$5.50	$5.50	$4.00	$7.38	74	74	54
Beef cattle, per 100 pounds	5.90	5.80	5.05	5.21	75	73	58
Lambs, per 100 pounds	5.70	5.50	5.30	6.19	92	89	86
LIVESTOCK PRODUCTS:							
Farm butter, per pound	.21	.21	.16	.24	88	88	67
Butterfat, per pound	.23	.23					
Wool, per pound	.24	.24	.27	.22	109	109	123
Eggs, per dozen	.29	.30	.25	.20	145	150	125
Chickens, per pound	.14	.14	.11	.14	100	100	78
CROPS:							
Wheat, per bushel	.99	.98	.88	1.00	99	98	88
Cotton, per pound	.124	.122	.096	.115	108	106	83
Potatoes, per bushel	.70	.70	.95	.83	84	84	114
Sweet potatoes, per bushel	.65	.55	.60	.77	84	71	78
Apples, per bushel	.85	.75	.65	.62	137	121	105

FAITH

So long as there are homes to which men turn
At close of day;
So long as there are homes where children are,
Where women stay,
If love and loyalty and faith be found
Across those sills,
A stricken nation can recover from
Its gravest ills.

So long as there are homes where lamps are lit,
And prayers are said;
Although a people falter through the dark,
And nations grope,
With God himself back of these little homes,
We have sure hope.

—Florida Agricultural News Service

HORTICULTURE

PRUNING BEARING APPLE TREES

Another pruning season is under way. Present economic and marketing conditions give added importance to this operation because of the effect it has upon cost and returns. Pruning adds considerably to the cost of production. It can make money for the grower or it can be the cause of heavy losses.

Apple growers know that consumers do not want and will not pay high prices for scabby or wormy fruit. No matter how many sprays are applied or what materials are used in spraying, if the trees are so tall and thick that the fruit in all parts of the tree cannot be covered properly, insect and disease control measures will not be effective. The right kind of pruning will bring the tall trees down to the proper height and will open the thick and brushy trees to admit spray materials.

This does not mean opening up great gaps or holes by removing a few large limbs, but it means taking out a larger number of smaller, interfering and parallel limbs, making a large number of small openings through which spray materials and light may penetrate to all parts inside of the tree.

There are two important reasons for guarding against the cutting or removal of large limbs in the tops of bearing trees. First, in removing large limbs too much strong fruiting wood is destroyed. It has taken a lot of moisture and plant food to produce this strong bearing wood. Why waste it? Furthermore, the removal of a large portion of strong fruiting wood well exposed to the light will reduce the yields of well colored fruit of good size not only for that year, but for several years to come. Second, large cuts may expose other scaffold limbs to sunscald, which in time may mean a permanent loss of bearing surface.

The tops of trees in most Virginia orchards are too thick and brushy. The result is a dwarfing effect upon the lower parts of the tree. A moderate amount of thinning out of smaller branches will give lower limbs a better chance to compete for food and moisture, with the result that good growth can be secured throughout the tree. High color, good size, and better quality are now absolutely important in securing markets and satisfactory prices.

Pruning done properly may not materially affect the size of the fruit, for soil and fertility are limiting factors. The right kind of pruning, however, can be expected to reduce materially the amount of small and poorly colored fruit that results from overcrowding and weak fruiting wood in many of our commercial orchards.

Every grower will agree that small apples and those with poor color come from the thick, brushy, over-loaded trees, and from the inside and the drooping underside branches of the secondary and main scaffold limbs. By weak fruit wood is meant, not dead or dying wood, but wood which, because of its position and location, has remained slender and produces small spurs with small, pointed, weak buds, brittle and of dull color. This weak wood not only has fewer leaves but the leaves are smaller and pale in color and, like a piece of worn out machinery, are not capable of manufacturing a supply of food that will produce fruit of good size and color.

Let us go into the average commercial orchard and examine the type of pruning that has been done and see how it compares with the kind which would result in producing the largest amount of fruit with high color and good size. In other words, has the pruning been such as to preserve the strong fruiting wood? Has the weak worn out wood been removed? Has a condition for maximum production in the future been maintained?

In the average orchard we are at once struck with the bareness on the upper side of the main scaffold limbs. In many cases this has been carried over even to the secondary branches. On the underside we find that few if any of the downward growing branches have been removed. In removing this large number of strong upright-growing branches with only muletails on the ends, the best fruiting wood has been cut away. This type of pruning exposes the tops of the large limbs to sunscald, which in turn affords entrance to blight, perennial canker and other fungous diseases, eventually resulting in breakage and dying of such large limbs and permanently reducing the bearing surface of the tree. The upright-growing wood is always the stronger, more vigorous wood, produces more and larger leaves, is better exposed to sunlight and air, and protects the upper side of the larger limbs against sunscald.

Removing the top branches and leaving a thick mass of downward-growing branches results in the production of a higher percentage of small and poorly colored fruit. The reason is obvious. Other things being equal, downward and drooping branches, especially as the distance from the outside to the center of the tree is increased, are less vigorous, produce smaller and fewer leaves. The apples borne on such fruiting wood do not receive the necessary amount of light and food, and therefore do not develop high color, good size, and quality.

Before starting your crew out on pruning this year, go out into your orchard and examine and compare branches growing in an upright position on top of the main limbs with those of the same age growing on the under side and downward. If you have never made such a comparison you will find a surprise awaiting you. What will you see? First, the top branches will have greater diameter, longer terminal growth, strong spurs of good length with cabbage-head-like buds. Let this be your guide in removing wood in your pruning operations. Cut out as little of the strong, fruiting wood as possible; remove the weak wood and cut under instead of on top. Make your pruning a profitable operation.

CARE OF ORNAMENTALS

Begin pruning in February by cutting away dead or worthless branches from trees and shrubs and cutting and burning parts too badly infested to treat otherwise. Prune altheas and hardy hydrangeas now. Hydrangeas especially do better if severely pruned before their dormant stage is over. Cut snowball hydrangeas to the ground. (Tender hydrangeas are never pruned in winter or spring; pruning time for them is just after blooming.)

Spray in February for scale insects while plants are dormant and before young leaves appear on evergreens.

Lilac, snowberry, Japanese quince, mountain ash, dogwood, flowering peach, hawthorns, crabapples, roses and other ornamentals are subject to San Jose or to scurfy scale; Japanese magnolias have oystershell scale; euonymus (evergreen and deciduous) is subject to euonymus scale like a small scurfy scale); roses sometimes have a white rose-scale.

For San Jose, scurfy scale and rose scale, use lime-sulphur (begin in fall and repeat now); or use lubricating oil emulsion, 1 part emulsion to 33 parts water.

For oystershell scale, spray now with 10 percent kerosene emulsion, and again between May 20 and June 15, to kill the young scales, using spray of fish oil soap (1 lb), 40 percent nicotine sulphate (1 fluid ounce), and water (4 gallons).

For euonymus scale, spray several times during winter with the same fish oil solution, or with kerosene emulsion, or with lubricating oil emulsion. Be sure to cut away and burn badly infested parts. When spraying, be thorough; spray from every angle and spray with force.

Pests that winter over in some form can be reduced now.

Pick bag worms and burn them. They hang like small, pointed cones an inch long, covered with small sticks. They are found on arborvitaes and other similar evergreens and on trees.

Burn weeds and trash that may be harboring eggs of the iris borer. Other borers attack rose stems, clematis roots, rhododendron and dogwood stems and ash tree stems; gather and burn infested parts and all litter that harbors their eggs during winter. Giant ragweed and other large weeds harbor borers that attack the garden in summer.

Burning trash and weeds early also destroys such pests as fruit borers, tree crickets, leaf miners, thrips, mealy bugs, plant bugs, spider mites, gall makers, termines, slugs and snails.

FLOWERS FOR FEBRUARY

(Mary C. McBryde, Landscape Specialist)

One class of flowers can be counted on to bloom outdoors in February. Lenten Roses (Helleborus, Niger and others) are true winter flowers, all of them blooming before spring arrives. There are twelve species, native of Europe and Asia; they are related to buttercups. They have attractive foliage and flowers about the size of a wild rose, some white, some purple, some greenish white.

Lenten roses bloom in the shade of trees and shrubs, and make an interesting collection to grow in ferny rock gardens. They can also be potted and forced into bloom anytime during winter. They dislike intensely to be moved, however, and strong plants must be used for potting. Though they do not always ripen seed, when they do, they can be sown in the ground or in pots, where they should grow very well and bloom the third year.

Requirements for growing Lenten Roses are rich moist soil, well drained, containing humus and coarse sand; shade or part shade; shelter from harsh winds; manure for fertilizer, used dry-mixed with leaf mold, and put on as a loose top dressing in fall.

Plants forced must be changed very gradually from cold to warmer temperature. They are best grown from root division, but will grow from seed if sown in soil rich with well rotted manure.

The species usually grown in pots and gardens is Helleborus Niger or Christmas Rose, which has large white flowers and evergreen leaves and blooms early. Others are also desirable, especially in collections for rockeries and wild gardens among ferns. Time of flowering varies with location, sometimes beginning in December in mild sections in sheltered places like cool hollows or banks protected from sharp winds. The flowering, however, never lingers into spring.

Other flowers that sometimes bloom outdoors late in February are Byzantine Giant Snowdrop (Galanthus Byzontinus), Dutch Crocus "Imperati," and Winter Aconite (Eranthis Hyemalis).

FARM MANAGEMENT **AGRONOMY** SOILS CROPS

Use Better Seed—It Means Larger Yields, Better Quality Crops, and More Profits

SOME FACTS ABOUT THE SEED SUPPLY

(Editor's note: In this article the writer calls attention to the impending shortage of field seed this year and attempts to make some suggestions as to the best ways of meeting the situation.)

With seed prices high because of the drought last summer, farmers are confronted with a serious problem, the gravity of which they may not yet fully realize. As the year advances it becomes apparent that the 1934 production of many kinds of farm seeds is the shortest in many years. This situation is further aggravated by an unusually small carryover of seeds from the previous years. Alfalfa, alsike clover, red clover, sweet clover and timothy are especially hard hit and are seed vitally necessary to the well being of Virginia farms. The alfalfa seed crop is four-fifths normal; sweet clover is about one-half normal.

The 1934 crop of red clover, alsike clover and timothy is only about one-half our normal crop and is the smallest on record for these three kinds of seed. Many other kinds of farm seeds will not be available in normal amounts this year.

With this in mind it seems highly advisable for farmers to check up on their seed needs and secure them before the stocks are exhausted. It is always advisable to provide for seed requirements before the best stocks are gone and in time to have seed tested before they are sown. Just now the latter precaution is particularly advisable.

It is a regrettable fact that most people consider the price rather than the quality of the seed they buy. Bargain-counter seed are usually expensive seed in the final analysis. Usually when seed are offered below the established market price one has good reason to begin to look for the "nigger in the woodpile." Seed should never be bought from anyone, regardless of price, who is not known to be honest and reliable. With such a shortage of seed as we are facing, we may expect to have many seeds finding their way into market channels that would not normally be offered for sale. For this reason, purchases should be made with more than usual care to avoid serious crop losses. Since a whole year's work may be lost because of bad seed, this situation should not be passed over lightly.

The scarcity of seeds will this year cause the saving of more home-grown seed than usual. This may be desirable or dangerous, according to the presence or absence of noxious weeds and disease organisms. Usually such seeds are adapted to the soil and climatic conditions of their locality. This is exemplified by the resistance shown by Virginia-grown red clover seed to anthracnose. However, much home grown seed is not cleaned, or at best improperly cleaned. Sometimes seeds with a high purity analysis have many undesirable weed seeds still in them.

A sample of Korean lespedeza seed taken in Virginia and showing 99.53 percent purity, had the following weed seed per ounce: Yellow foxtail 12, bracted plantain 6, ragweed 6, nightshade 6, blue bottle 6, and most important of all, Johnson grass 2.

With a 20-pound per acre seeding of this lespedeza, one would have put on his land 3820 yellow foxtail, 1920 bracted plantain, 1920 ragweed, 1920 nightshade, 1920 blue bottle, and 640 Johnson grass seed to each acre. The above figures speak for themselves so strongly that no further discussion of them is necessary.

It is of vital importance to use seed that one knows to be well adapted to soil and climatic conditions where the crop is to be grown. With these factors as varied as they are throughout the nation, U. S. grown or domestic seed may be no better adapted to some localities than foreign or imported seed.

Whatever the source of origin of seed, it should be free of noxious weeds and should not carry a high percentage of common weed seed. One may consider the presence of common weed seed a trivial matter. However, if they are present in the amounts often found in local seed, they do make a difference.

A bulk of seed carrying 20 percent weed seed is 25 percent more expensive than one carrying no weed seed. The increased amount is due to the smaller amount of pure seed in the uncleaned bulk. High percentages of weed seed, even if the resulting weeds are not objectionable, often make improperly cleaned local seed very expensive, because of the lowered plant producing capacity of the bulk of seed. Local seed are highly desirable because of the adaptability, but they should have the weed seed taken out of them before they are sown.

Virginia is now beginning to produce a very good poundage of lespedeza seed, considering the short time the crop has been grown in the state, but unfortunately many farmers are sowing it and selling it to others just as it comes from the thresher, or after it has been run through a wheat fan. A wheat fan will remove a lot of inert matter, it is true, but it will also leave a big lot of weed seed.

The scarcity of seed will cause many lots of old seed of all crops to be used this year. Some may be all right, but two-year old lespedeza should always be avoided. There is no general rule as to how old seeds of many crops may be before they lose their vitality. Seeds of one harvest may retain their vitality longer than those of another harvest. Seeds of the same harvest may differ sharply, depending upon the conditions under which they have been stored.

The germination test is the only sure answer to the value of seed for planting. A germination test, to be of the most value, should show the actual potential plant producing capacity of the seed.

Farm seeds can be used economically when their potential plant producing capacity is known. If 8 pounds of seed of one lot give as many normal plants as 10 pounds of another lot, it is not good economy to sow the two lots at the same rate. It is clear that the higher plant producing capacity a lot of seed has, the fewer of them need be sown. Variation in the plant producing ability of different lots of seed is surprisingly great in terms of the amount of seed required to give the same number of plants on a given area of land.

Mr. F. S. Holmes, of the University of Maryland, offers the following pertinent facts relative to the varying viability of red clover seed.

A preliminary study of 566 samples of red clover seed sold in Maryland during the period from 1928 to 1933 shows, for example, that in order to secure the number of red clover plants required for a good stand, these samples would have had to be used at rates of from 6 pounds per acre to 45 pounds per acre. Planting such a group of seed at the usual rate, 10 pounds per acre, would be uneconomical; some would give more than enough plants needed per acre, while some would give a very sparse stand. Thus it is apparent that buying seed of doubtful or unknown purity and germination is very decidedly "buying a pig in a poke." In times like these it is worse than that.

IMPORTED RED OATS NOT GOOD SEED

Red Oats from South America, now being imported into the United States for feed, may look like good seed, but the U. S. Department of Agriculture is issuing warnings both to farmers and to dealers. Dealers are warned not to sell these oats for seed. Farmers are warned that, although the South American oats look very much like the well-known Red Rustproof Oats, they are in fact Red Algerian seed.

Red Algerian is a late-maturing oat and lacks winter resistance. Red Algerian strains tested by the Department in the last two winters have survived from fall seeding only in the extreme South where there is no winter-killing of any varieties. It is a late oat and not desirable in the South on that account, and should not be used for seed.

CUTTING THE PORK CARCASSES

Pork carcasses should be cut in the manner that will provide the family with the cuts of meat that it can use to best advantage, says G. C. Herring, animal husbandman, Virginia extension division.

Hams that are to be held throughout the summer should be cut reasonably long and the protecting covering of fat should not be trimmed off. Where a good quality of sliced bacon is desired the ribs should be removed and the pieces given a smooth trim. Whether used fresh, frozen, cured, or canned, loins should be cut rather short and most of the back fat removed from them. Loin roasts carrying a smooth, even covering of fat will cook more quickly and satisfactorily than those that have been trimmed so as to expose the lean. Most of the fat should be removed from loins that are to be boned and canned. If large quantities of lard are needed, all the cuts should be trimmed rather closely.

Centersplitting the hog carcasses—which is sawing down the center of the backbone—makes it possible to use the loin in any of several ways. Where the backbone is chopped out, the remainder of the loin muscle is usually available only for sausage. If the backbone is a much-demanded delicacy it is often desirable to split one or two hogs that way but to centersplit the other carcasses so as to produce a maximum amount of curing meat.

All curing cuts should be smoothly trimmed as the ragged edges become oversalted in cure and provide pockets for the growth of mold.

This information is based on recommendations of the Extension Division, Virginia Polytechnic Institute, and the U. S. Department of Agriculture.

V.P.I. AGRONOMIST GETS IMPORTANT POST

Dr. N. A. Pettinger, associate agronomist of the Virginia agricultural experiment station at Virginia Polytechnic Institute, has been appointed chairman of a national committee on soil testing by the American Society of Agronomy. He also has been placed on the program committee of the society to help prepare a program for the 1935 meetings to be held in Chicago next November.

The national committee on soil testing of the American Society of Agronomy, of which Dr. Pettinger has been named chairman, is to carry on co-ordinated research at the various experiment stations on methods of testing soils for their fertilizer needs.

HORTICULTURE

PRIZE CONTEST FOR NATIVE NUTS

Although the nut industry of Virginia is in its infancy, the annual income to the people from this source runs into hundreds of thousands of dollars. There are many marginal acres of land within the state that are suitable for the growing of black walnuts, hickory nuts and pecans. Virginia should be especially interested in the Better Variety Contest that is being sponsored by the Northern Nut Growers Association, since she is in a position to profit greatly from the results of such a contest.

There are millions of black walnut and hickory nut trees growing wild in Virginia. Without a question there are many people who know of trees producing nuts of superior quality. These superior nuts should be entered in the contest. They may be winners of a prize.

First prize	$10.00
Second prize	5.00
Third prize	3.00
Fourth prize	2.00
Fifth prize	1.00

The nuts for which prizes are offered are (1) black walnut and (2) hickory nuts, including northern pecans and hickory hybrids. The prizes will apply to each group separately.

Send two pounds of nuts, if possible, from each tree entered in the contest, keeping the nuts from each tree separate. Each sample should have a name or number, and the tree from which the sample was taken should be correspondingly marked for future identification. Nuts should be husked and dried as soon as they fall from the trees. Failure to do this means a poor sample. Do not crack the nuts. A strong canvas bag with good tag strongly attached makes the best package, but any box will do if it is well wrapped and tied. The sender's name and address should be written very plainly in ink on the package and also enclosed in the package.

Information concerning the tree, its age, location, size of crop, and whether an annual bearer or not, will be appreciated, but it is not essential.

Prize winners are expected to furnish the association on request with a sufficient number of scions for experimental purposes. For this a suitable mailing case with prepaid postage will be sent to the prize winners at the proper time. Prize winners will also find opportunities to sell scions at the usual rate of 10 cents a foot.

Prize winning nuts will be named for the person who sends them in and the name goes on permanent record.

All entries should be sent in before February 1, 1935, and their receipt will be acknowledged.

Send all packages and letters regarding entries to C. A. Reed, Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C.

WHEN TO SPRAY FOR PEACH LEAF CURL

It is always good business to grow peaches of good size, color and quality at the lowest possible cost. It is doubtful whether it would be considered good business for our peach growers to omit the peach leaf curl spray. In fact, many a peach grower has known the paradox of actually increasing his production costs for peaches by omitting the leaf curl spray or by failing to get the spray on at the proper time.

Peach leaf curl has been on the increase during recent years. In some orchards it has caused heavy defoliation, has reduced yields and weakened trees. Weak trees are more susceptible to drouth and winter injury. In the past, late winter and early spring spraying have been generally recommended in controlling leaf curl. The results have not always been satisfactory. This is not because leaf curl is a difficult disease to control; on the contrary, it is one fruit trouble that can be controlled with one application, if the spraying is done on time and in a thorough manner. In Virginia, however, high winds during the late winter and early spring spraying season often make conditions unfavorable for thorough coverage.

Perhaps the main reason for variations in the control of peach leaf curl is that the spray is not applied in time. The spores of the leaf curl fungus winter over around the bud scales and are ready to penetrate the tissues of the young leaf with the first swelling of the buds during periods of mild weather which often occur in January and February. Consequently, the buds are infected before the grower has an opportunity to apply the spray.

To avoid poor coverage due to unfavorable weather and infection from periods of mild weather during the winter, peach growers are advised to apply the dormant spray to peaches as soon as the leaves have all dropped from the trees. Concentrated lime sulphur at the rate of 1 to 40 or 6-6-100 Bordeaux mixture will give good control. If scale is present or if the peaches are interplanted with apples, the concentrated lime sulphur spray of 1 to 8 should be used.

Virginia growers have had two successful peach years. If the trees are to come through with a crop next year, the trees should be kept in a good healthy condition. Nothing is more important than a good healthy leaf surface. Spray for leaf curl **now**. Spray thoroughly.

FALL CARE OF SHRUBS AND FLOWERS

Fall planting is best for most of the hardy shrubs and perennials and for some of the hardiest annuals. They must be given time to become well established before cold weather brings them to a resting period. If given time to do some growing, especially rooting, in warm autumn soil, they will be ready to make strong early growth in spring. It is now past time for fall planting in Virginia, but the above suggestions might well be kept in mind for another season.

Winter protection is important for fall planted shrubs and flowers. The best protection **keeps the soil cold.** Mulches put on as soon as the soil is well chilled, but before it is frozen to a depth below the roots of the plants, serve to prevent **alternate freezing and thawing** which injures plants more than steady cold. They also prevent **sudden thawing** which frequently causes winter-killing.

Perennials need protection from standing of water on their crowns in winter; this excess of wetness is often the cause of winter-killing. To quote Mr. Hottes, plants need umbrellas as well as overcoats. If, because of diseases in the garden, we must cut away the protection nature provides in the way of dried tops to shed water and catch snow, a light covering of evergreen branches will serve in their place. Leaves alone are not a good covering as they pack, stay wet, and smother plants. If they must be used, lay cornstalks or twigs across the soil and strew leaves over them; better still, strew manure that is dry and strawy.

In severe weather boxwoods and other leafy evergreens can be saved from the serious injury of hard freezing if covered immediately after they are frozen in such a way as to allow them to thaw very gradually. Many plants will endure the bitterest weather if they do not thaw too suddenly.

Some shrubs for which **fall planting is not recommended** are:

Azalea, Benzoin, Butterfly Bush, Sweet Shrub, Dogwood (White Flowering), Hawthorn, Althea, Mountain Laurel, Magnolia, Rhododendron, Sumac, Stephanandra, Tamarisk, and Japanese Snowball.

Some perennials **not** to plant in the fall are:

Japanese Anemone, Aster, Plumbago, Shasta Daisy, Helenium, Monarda, and Late Flowering Chrysanthemums.

Experience seems to prove that these are exceptions to the rule of fall planting for hardy shrubs and flowers.

If the soil contains the disease of leaf spot and stem rot so harmful to delphiniums, do not use manure even for fall mulch, and substitute bone meal for it as a fertilizer at any season.

If slugs and cutworms attack the crowns of delphiniums and other plants, cover the crowns as soon as cold weather sets in with a shovelful of coal ashes; mix in a little dry bordeaux. Follow this very early in spring with poison bait (molasses, wheat bran and arsenate of lead) placed about among the plants before nightfall; cover the bait with boards, else birds and pets may get the poison.

REVEAL WIDESPREAD UNDERCONSUMPTION OF MILK IN SURVEY

Widespread underconsumption of milk is revealed in a preliminary report issued by Dr. Fred C. Howe, Consumers' Counsel of the Agricultural Adjustment Administration. The report is based upon the most extensive survey of its kind ever undertaken, through which information was obtained from 29, 485 families in 59 cities and 46 states.

More than 14 percent of the families represented in the survey reported that they bought no fresh milk at all. Average purchases of fresh milk for the entire group amounted to less than six-tenths of a pint per person daily. The average purchase of evaporated milk, 18 pounds per year per person, was high compared to the national per capita consumption but total purchases of both fresh and evaporated milk were low.

Average per capita purchases of fresh and evaporated milk combined were more than 27 percent below the point which is safe from a health standpoint and 64 percent below the liberal diet level, according to standards of the Bureau of Home Economics, United States Department of Agriculture.

The survey was limited to families with children in school and with incomes ranging from average to low. The average number of persons in the families surveyed was 5.44 and the average number of children per family was 2.69. The average income per family was $21.29 per week.

Hutcheson Appointed Assistant Agent

Henry E. Hutcheson, Jr., has been appointed assistant farm agent in Isle of Wight county and began work there November 1. Hutcheson is a graduate of V. P. I. in agronomy, class of 1933, and has been with the Southern States Cooperative in Baltimore since graduation.

FARM MANAGEMENT **AGRONOMY** SOILS CROPS

Use Better Seed—It Means Larger Yields, Better Quality Crops, and More Profits

GOOD SEED AS A FACTOR IN ECONOMICAL CROP PRODUCTION

To consider agriculture today as the one vocation to which men may turn, after failing in other businesses, and make a go of it, is a farce, misconception or sure sign of ignorance, whichever you choose to call it. With the present day competition, surpluses, marketing conditions and "what nots," farming becomes both a science and an art; and requires more brain than brawn, which is the reverse of the one-time opinion of agriculture or farming.

There is far more to successful farming than plowing the land, planting the seed, cultivating a few times, harvesting and then hauling to market. This is only a part of the game and a minor part at that. There is probably no other industry known to man that has so great a number of varied problems to be faced and solved in some way as does the industry of agriculture.

Some of the factors that must be reckoned with are beyond the control of man, while others, and some very vital ones, are controllable by him. Such factors as can be controlled deserve the serious attention and forethought of every farmer who expects to reap a reward for his effort.

Never before have conditions so greatly demanded that crops be produced more economically, and that the product be of superior quality.

Of the many factors that go to make up the scheme of economical and quality production, seed is really the starting point. There is a lot of talk about good seed but still far too little of it results in action.

Too much emphasis cannot be placed upon the use of good seed. First, however, what are good seed? Briefly good seed must be (1) of an adapted variety, (2) pure, that is, free from mixture, foreign material and weed seed, (3) of strong germination, (4) free from disease, and (5) of proper size and development.

For best results a variety must be adapted not only to soil, but to climatic conditions. Varieties which utilize as much of the growing season as possible give best results. To illustrate: a series of tests with corn at the Appomattox experiment station shows Silver King, which requires 110 days to mature, yielded 22.50 bushels per acre. Casey's Purebred, which matures in 135 days, yielded 30.33 bushels per acre. In other words, there was an increase of 8 bushels due to varietal adaptation.

To illustrate further, red clover gives a striking example. The yield of hay from Tennessee seed was 2.67 tons and that from Italian seed 0.36 tons. Why this difference? Draw your own conclusion. Many other examples could be cited, but these will suffice to illustrate the point.

"As a man soweth, so shall he reap." One cannot expect to seed a mixture of varieties, or of crops, and harvest a crop free of mixtures. The same applies to weeds in the seed. Do oats really turn to cheat or is it one of the many weeds that we seed not knowing it?

The weed problem has become so serious that it is receiving probably more than its share of attention by experiment stations over the country. It is estimated that weeds cost the farmers of the United States three million dollars per year. Virginia is still in the United States and bears its part of this loss. Is it not time that more attention be paid to the purity of seed used? Would you pay the same price for seed wheat which contains a high percent of onion and cockle, as you would for clean wheat?

Then comes the question of germination. Why should one desire seed having a strong germination? A good stand of uniform plants is the desire of every farmer. This cannot be secured unless viable seed, that will germinate, are used. Do not buy solely by the looks of seed, but rather by the analysis tag.

How much do farmers lose every year from diseased crops? I cannot give you the facts but all agree that it is entirely too much. Much of this loss can be reduced by a little careful attention to the seed used. Many of the seed borne diseases can be eliminated, if a little extra care is given to getting disease-free seed. Disease not only reduces crop yields but also the quality of the crop, and this in turn materially reduces the selling price. For instance, you take your wheat to the mill and get docked because it is smutty. A little later on you go to market with tobacco which is diseased, and what do you get?

We are told to use seed of proper size and development. Why should this be necessary? It is because of the nutritional effect. The young plant just beginning its growth has to have food to carry on at this stage, and since its root system is not sufficiently developed to gather the necessary food from the soil, it is dependent upon the stored food of the seed to keep it alive.

If the seed is under-sized and shriveled it does not contain enough food to properly develop the young plant. Williams of Ohio (1916) found from tests with hand selected wheat, over a period of six years, that heavy seed produced on the average 48 percent more established plants than did light seed.

Conservative agronomists estimate the yields from pure, well developed, disease-free seed to be from 10 to 20 percent greater than those from the ordinary run of seed.

The experiment station is developing varieties of crops which are superior to other varieties under certain conditions. These varieties are put out over the state to be increased and made available to farmers. Then comes the question, how are we to know that it is kept pure and in a high state of productivity?

It was for this purpose that the Virginia Crop Improvement Association was organized and seed certification started. The primary object is to make available to the farmers of the state a source of good seed that meet the requirements already discussed.

Crop varieties which have proved their superiority for the different conditions of the state are the ones certified. This work is carried on under a rigid system of inspections. It is required that seed reach certain high standards before it can be certified.

The varieties are kept pure by growing them sufficiently far from other varieties to prevent crossing. In addition, breeding work is carried on from time to time to keep up the yield and vigor. This can be illustrated by the **head selection** work of small grain, **ear-to-row** test for corn, **stalk selection** of cotton, etc.

Certified seed are quality seed and are worth the small difference in cost. Rather than look solely at the cost per bushel of good seed and ordinary seed, figure the difference in cost of seeding an acre and see just how small an increase in yield it will take to more than pay the difference in seeding cost.

It is interesting to note that the certified seed growers, for the period of 1924-27, inclusive, averaged 12.5 bushels more corn per acre than is reported for the state average. The increased yield of certified wheat for the same period was 6.8 bushels. Are these increases sufficient to offset the small premium paid for certified seed?

At the present time the best source of good seed is Certified seed, because of the standard it must reach before it can be certified. It deserves more consideration by farmers. It is doubtful if any money spent on the farm gives greater returns than that spent in securing good seed. If we figure on the unit basis, we must see that it is wasteful to use anything but good seed, even though its price looks a little higher in the catalogue.

HOW EXTENSION WORKERS HAVE HELPED IN THE ADJUSTMENT PROGRAM

H. W. Hochbaum
Extension Service, U. S. D. A.

Success in meeting any crisis, as you know, depends very largely on the everlasting team work of the people affected and the forces which are called to aid. The farmers of America last year faced a terrible situation. Ruinous prices for their farm products had many of them down if not out. The task was that of raising farm prices to parity levels, to restore the purchasing power of the farmer. The Agricultural Adjustment Administration proposed that this could be done if the farmers would adjust their production of certain basic commodities to existing market situations.

The success which marks the country-wide campaigns to adjust production, the progress made in helping farmers to overcome a crisis are due in a very large measure to the team work of the Agricultural Adjustment Administration, the farmers themselves and the extension service.

The extension service is a national co-operative system of rural education which works from the grass roots up. In nearly 2,700 counties of the nation, county agricultural agents serve as local key men of that system in meeting those agricultural problems which are most significant locally. These agents draw to the work thousands of local farm leaders. These leaders help the agents in organizing and planning and in interesting their neighbors in adopting the various recommendations. In times of emergency this widespread and well organized system is ready to serve the Federal government as a means by which the rural people may be quickly informed and prepared to meet emergencies which confront them and the nation as a whole. Consequently, the extension service was charged by the Administration to aid the government in the herculean efforts to meet the agricultural crisis, to improve and stabilize the rural economic situations.

This Agricultural Adjustment Administration was set up in 1933 to carry out the provisions of the adjustment act. This organization drew upon the best resources in the Department of Agriculture, the State Colleges and counseled with leading farmers all over the country in developing the now-familiar wheat, tobacco, cotton, corn-hog, and other adjustment programs. The Agricultural Adjustment Administration developed the plans, outlined the campaigns, prepared the necessary legal documents, drafted the educational material and organized the machinery necessary in the general administration of these different projects.

The administration of these adjustment programs in each county was entrusted to

HORTICULTURE

FEEDING THE ORCHARD

The season is again at hand when fruit trees will come out of their winter rest and start into active growth. Orchard owners are anxiously examining buds and speculating on crop prospects. It is a critical period for both the fruit trees and their owners.

Too much should not be expected from weak, hungry and thirsty trees. A good supply of plant food and an adequate supply of soil moisture are necessary for satisfactory yields and for high color, good size and good quality of apples. Applying nitrogen fertilizers to apple trees has become a general practice with most commercial growers; but only one rich meal a year is not sufficient.

A constant supply of plant food and a uniform supply of moisture throughout the growing season are necessary for best results. In this connection organic matter plays the important part. The higher the organic content the more moisture, the more favorable are the conditions for the activity of soil bacteria, and the greater is the supply of nitrogen and other plant foods for tree use. Cover crops not only provide the orchardist with the cheapest source of plant foods, but also they are invaluable as conservers of plant foods in that they prevent washing and loss through leaching.

The fertilizing of cover crops is an important part of an economical orchard feeding program. However, applications of fertilizers, especially those carrying nitrogen, directly to the trees will be just as important as ever. Apple trees require large amounts of nitrogen during the bloom and fruit-setting period. It is also important to provide the trees with a good leaf surface early in the season. During this late winter and early spring period, the soil temperature is too low for the activity of soil bacteria and nitrates are produced in very small amounts. In order to provide nitrogen for this early growth and to get it into the tree when it is needed, nitrogen applications to the trees should be made considerably in advance of the blooming period. Where orchards are in sod, this application should be made at about the time the buds begin to swell in order that more of it may reach the tree roots. Better still, break up the sod with a disc or harrow. This will also allow the water to get into the soil and reduce run-off. Orchards in sod, especially those on thirsty thin soils and those grown up to broom sedge, will benefit materially by an application of from 200 to 300 pounds of acid phosphate per acre.

VEGETABLE GARDEN NOTES FOR MARCH

Plowing. Is your garden still unplowed? The longer you delay this important operation, the less it will profit you. Plow now and give your soil the advantage of early plowing. Why delay when you pay?

Manuring. Give your soil a chance to grow good vegetables. Just before plowing, apply a liberal amount of manure to your garden. It will help to put your land in good shape for working. An application of 20 tons per acre annually is none too much.

Harrowing. Harrow or work the garden several times before planting. The soil is the home of the growing vegetable. You cannot prepare the seedbed too thoroughly.

Fertilization. Purchase a 5-8-5 or a 4-12-4 fertilizer for your garden. Apply at the rate of 1000 pounds per acre (approximately 25 pounds per 1000 square feet). If your garden has been well manured yearly, the fertilizer may be broadcast and worked into the soil. If little manure has been used, half of the fertilizer should be placed in the row and mixed thoroughly with the soil.

Seed. Order your seed at once from some reliable seed concern. Cheap seed is costly seed in the long run. Do not delay. Have your seed on hand when needed.

Selection of Vegetables. Is your garden a corn-potato-beans-cabbage garden? It should contain a good selection of vegetables available throughout every month of the year. It should contain at least five or six of the green or leafy vegetables, five or six root vegetables, and a like number of fruit vegetables. Below is a list of some of these vegetables. Those followed by an asterisk should be in every garden.

Green or Leafy	Root	Fruit
Cabbage*	Beets*	Beans*
Kale*	Carrots*	Lima Beans
Lettuce*	Onions*	Corn*
Spinach	Parsnips*	Peas*
Swiss Chard	Potatoes*	Peppers
Turnip Salad*	Salsify	Tomatoes*
Mustard	Sweet	Okra
Spinach mustard	Potatoes	Pumpkin
Celery	Turnips*	Squash
	Radishes	Cantaloupes
	Rutabagas	Cucumber
		Eggplant

Selection of varieties. As a rule, order the old, standard varieties which have been tried and found of value. It is all right to try some new varieties each year, but do not risk your entire planting.

AN EARLY FLOWER FOR MARCH

Eranthis, or Winter Aconite, is a very early spring flower. It follows the Lenten Roses which are true winter flowers. Eranthis grows from a tiny tuber which sends up bright yellow buttercups with a frill of leaves worn like a collar. It comes two weeks before most of the crocuses and does not mind the cold. It grows best in part shade thriving in borders, under trees and shrubs, and in the grass where it is not too heavy. Eranthis seeds itself freely, and if planted in groups, soon makes little colonies that spread carpets of yellow when flowers out-of-doors are rare and precious. It is very hardy, but after blooming it dies down like other bulbs and its location should be marked to prevent its being forgotten and dug up.

Eranthis means "flower of spring." There are a number of species, natives of Asia. The commonly used one is Eranthis hyenialis. The little tubers are quite inexpensive. Eranthis cilicica is not quite as early and costs a little more. Eranthis tubergeni is a hybrid with large flowers which are sterile, but last longer than others. It is a novelty and more expensive.

Set Eranthis tubers two inches deep. They can be forced in a coldframe for very early blooming. A dozen tubers set in a bulb pan or in a shallow bark-covered box make an attractive winter decoration for table or window sill. Avoid sudden changes of temperature for forced plants. The best use for Eranthis is in garden or rockeries where its earliness is a treasure. The species is propagated by seed and rooted division.

These early flowers which brave the weather appreciate little helps like big stones, a small hollow, a low bank, to keep off the fiercest winds; and the shadows of a bare bush or an evergreen to break the first heat of sun after a freeze; or a slight covering of leaves or straw; a wind break of evergreens, walls, or fences; or the lee-side protection of a building to help them endure the cold. Garden lovers who give these little helps can have early flowers in abundance. If enough Eranthis bulbs are set and some slight advantage over the weather is given them, a bed of butter cups in early March will be the reward.

MARCH FLOWER GARDEN NOTES

March is hotbed month. For early bloom start this month in the hotbed half-hardy annuals like verbenas, petunia, cosmos, annual phlox, ageratum, sea dahlia, heliotrope, snapdragon, sea lavender, sweet williams, pinks.

Plant in the open as soon as the ground can be stirred, hardy annuals like calendula, cornflowers, poppy, California poppy, the perennial iceland poppies, sweet peas, nigella, godetia, adlumia, the perennial golega and perennial phlox. These perennials will bloom the first year from seed if planted early.

Prune and train vines, except those that bloom early. Sow grass seed, topdress lawns, and reseed bare spots. Begin to remove gradually protection from bulbs and flowers. March is planting month. Transplanting can be done now. Perennials that bloom in autumn can be divided. Some hardy perennials sown in the fall can be transplanted. Prepare planting beds for tender annuals like nasturtium, China aster and others. Be sure that woody plants are free from dead, diseased or useless wood. Prune hardy hydrangeas if this was not done in February. If spraying has not been completed, finish it before leaves appear. Get Bordeaux mixture ready to spray as early preventive of disease. Roses need it especially.

RING! BELLS OF CHANGE

By A. B. Bryan
Agricultural Editor, Clemson College, S. C.

Ring Out The Old

Ring out the high cost of ignorant, shiftless farming.

Ring out inefficiency from lack of planning, needed equipment, and careful management.

Ring out the tragic loss of soil from preventable erosion of good land.

Ring out the use of inferior seeds, cheap scrub livestock, and out-moded practices.

Ring out wasteful, destructive practices with farm fertility, farm machinery, and farm buildings.

Ring out the false ideas of "independence" which prevent farmers from seeing and seeking the common good.

Ring In The New

Ring in the reading, thinking farmer who intelligently applies scientific principles to farming.

Ring in a richer land through the use of cover crops and other soil-saving and soil-building methods.

Ring in the self-sustaining farm practice of producing first the needs of the home and farm and then the money crops.

Ring in the use of better seeds for surer yields and more and better livestock to balance the farming system.

Ring in the determination to make the farm a real home, comfortable, attractive, and satisfying, to which the family will cling.

Ring in the new spirit of cooperation with fellow farmers far and near, working for the welfare of all as well as of the individual.

THE NEED FOR COOPERATIVES

The thought is widely expressed that the most encouraging factor in the agricultural situation is the steady, sustained growth of the farm cooperative organizations. As they enlist more members, and make their influence more widely felt, their battle for stable markets and better prices automatically approaches closer to victory.

It might also be said that lesser-known phase of cooperative activity is almost as important as this kind of work, and gives equal cause for encouragement. That is the work the co-ops do in educating their members and the general public as well. They seek to be agencies of economic information, as well as buyers and sellers of commodities—and their influence in this direction, as in the other, is always widening.

Cooperative leaders have demonstrated to the thinking public that fair and profitable prices for agricultural products are an essential of recovery generally—that bringing back the farm income to a normal level would be a major step in bringing back the urban income. The American farmer constitutes the greatest single market for our factory products, and no one can profit if his buying power is dormant.

The cooperatives, in brief, are showing the nation that all our citizens—rural and urban dwellers—have the same interests and the same problems, and that better times for one means better times for all.—Lexington Gazette

THE COOPERATIVE WAY

Cooperation among farm people will not only persist but will have fundamental, advantageous effects upon rural progress and rural life, says F. W. Peck, Cooperative Bank Commissioner.

After all, while we are primarily concerned with the business side of operating cooperatives, there is more to cooperation than just doing business. There is involved the creation of attitudes of mind that vitally concern a way of living as well as a way of doing business.

We sometimes become so engrossed in the economic and commercial aspect of our everyday jobs as to forget the social values in which rural people must be vitally interested and which somehow they must obtain if there is to be a satisfying rural life. Some people say there cannot be; but there will be, and the answer lies largely in the hands of the rank and file of interested farm people.

This interest will be expressed through their chosen leadership, made effective by organization and education. The government may assist rural people to achieve for themselves many of these intangible but nevertheless fundamental values via "the cooperative way," but they will not come about because of government edict, government credit, or government control—they can only be obtained through the cooperative efforts of farm folks.—The Tobacco Grower

FARM EDITOR HONORED

Dr. Tait Butler, associate editor of Progressive Farmer and Southern Ruralist, has been awarded the American Farm Bureau Federation's annual distinguished service gold medal in recognition of his "unselfish, successful service in the interests of organized agriculture" for 1934. Dr. Butler was particularly cited for his work during the past forty years in raising the standards of agriculture in the South.

Richmond and Henrico Consumers' Council, Virginia, has embarked on an educational campaign to help housewives understand their position in relation to quality grades on the market. Information will cover the need for standard grade names, an evaluation of the grade designations now in use, and list some of the typical systems used for grading goods of a wide variety.

FARM MANAGEMENT **AGRONOMY** SOILS CROPS

Use Better Seed—It Means Larger Yields, Better Quality Crops, and More Profits

THE FOLLY OF PROMISCUOUS BURNING

At this season of the year the skies in some country sections of Virginia are clouded with a smoky haze not unlike a premature Indian summer. The smell of smoke is in the air and, if one would post himself upon any eminence, he could see smoke rising from fields and valleys in almost every direction. No, this is not smoke from secluded stills nor is it caused by moonshiners' signal fires. The fires which cause the smoke to which we refer were openly and deliberately started by farmers. A strange and anomalous fact, since they are destroying the thing that is most needed for improving Virginia soils, that is, organic matter which is the source of soil humus. Ask the farmer why the fires were started and his reply is, "I am burning the broomsedge so that the cattle can get to the early grass," or "I am burning off a field so that it will be easy to plow." Either of these replies would have been perfectly plausible one hundred years ago and the reasoning behind them would have been good. At that time our soils were relatively rich in organic matter and our forefathers were engaged in subduing a wilderness and building a republic destined to be a Nation hitherto unsurpassed in wealth and contributions to arts, science and invention.

Fertile soils were everywhere and, as they were worn out in the east, one had only to move west to find land rich in humus and fertility. This is no longer true. The once fertile soils of the west are already beginning to show the results of explorative farming and there are no more virgin soils left to which we can move. It, therefore, becomes increasingly important that farmers, particularly in the east where lands have been found longest, conserve their soil resources.

Organic matter is the only thing that distinguishes soil from mere rock fragments. It increases the water holding capacity of soils, thereby reducing losses in time of drought. It furnishes food for bacterial life in the soil and the bacteria in their time make plant food available. In fact a soil devoid or low in organic matter is almost invariably poor and unproductive. Plants which grow on the soil are the principal sources of organic matter and for this reason should be efficiently utilized.

A good rule to follow is to burn nothing on the farm that will easily decay. The practice of green manuring is based on the knowledge that organic matter improves soil. This is well understood by most farmers. Yet it is not an uncommon sight to see a farmer burning off fields on one part of his farm while on another part he is growing crops like cowpeas and soybeans for turning under. The writer has actually seen weeds burned off and the land then prepared and seeded to a crop for turning under for soil improvement. Of course, this is not sound farming; for a crop of weeds is just as valuable for soil improvement as the same quantity of rye, buckwheat or other non-legumes turned under, and is almost as valuable as the same quantity of cowpeas or soybeans. It is not necessary to burn off weeds to make land plow well, as a coulter on the plow beam or a chain attached to the beam and double-tree will drag them down, making them easy to cover.

Where clover or other vegetable matter is dragged into bunches in plowing, the trouble can be obviated by running a disk over the land ahead of the plow. Time so utilized is not lost; the disk helps to pulverize the soil and aids in mixing the vegetable matter with it. It should be borne in mind that not only is valuable organic matter lost when weeds are burned, but the plant food that these weeds took from the land is largely lost. Weeds in their growth use the same plant nutrients as do cultivated crops and, when they are burned, the light ash blows away and practically everything the weeds took out of the soil is lost.

It is true that burning over pastures kills some briars and brush, but it does not make pastures earlier as is generally assumed. Actual tests show that grass gets high enough to graze where it is protected by old grass sooner than it does where it is burned off. Briars and small undergrowth can be easily mowed at any time and it is usually much less than the fertilizing value of the organic matter destroyed by burning off the area.

In parts of the state where corn is not followed by winter small grains, the stalks are left standing in the field and only the ears are harvested. It is a common practice in some sections to burn the stalks left in the field. At the present price of fertilizers, the plant food in the corn stalks on an acre is worth from five to ten dollars and this does not include the value of the organic matter which, in some cases, is worth as much as the plant food. Of course, these stalks should be turned under. If chopped with a stalk cutter, they are easily turned under and decay readily.

Gardeners should also conserve all organic matter possible instead of burning it. In cleaning off the garden for spring planting, all weeds, stalks and other rubbish which cannot be easily plowed under should be piled in some convenient place for a compost heap. To this may be added leaves from the yard and all waste from vegetables during the summer. If one hundred pounds of ground limestone and seventy-five pounds of superphosphate is added to the heap for every ton of litter and the pile left to decay until next spring, a nice lot of compost which is good for all vegetables and flowers will be the result.

This question of adding humus to the soil becomes more and more important each year. In the older countries of the world everything on the farm that will decay readily is carefully preserved and returned to the soil. In this country our motto seems to be "if it is in the way, burn it." Such a policy, if persisted in, will eventually lead to poor land or small profits for not much profit is left from farming if all of the organic matter needed by the soil has to be purchased or furnished by crops sown for this purpose.

Spotsylvania.—The Spotsylvania home demonstration club sponsored a square dance and $21.00 was cleared for the club treasury. This club plans to assist in building up the school library as one of its community projects and $10.00 was donated for this purpose.—Mattie Puckett.

Botetourt.—Lithia home demonstration club adopted as a community project "A Community Room." The members secured a vacant room in the school building for this.—Helen M. Collins.

Carroll.—Carroll county home demonstration women have planned gardens and are making budgets for canning. Every club member will plant two new vegetables.—Mrs. C. S. Ferguson.

chimney, windows, interior walls, floors, furniture,

Recommended Methods for Carrying out this Program

When planning their own campaign each county may find several of these suggestions adaptable to their situation, and useful in getting results.

1. *CONTESTS for stimulating interest in undertaking improvements.*

(a) *Essay Contest*—for public school students

Suggested Subjects:

(1) "The Need for Better Home Sanitation in my Community"

(2) "Why and How Public Agencies are Interested in the Sanitation of My Home"

(3) "Improvements in Equipment that Would Save Work in My Home"

(4) "The Old Oaken Bucket vs A Modern Water Water System for the Farm House"

(5) "Places for Everything in a Farm House"

(6) "The Most Attractive and Comfortable Farm Home I Know"

(b) *Letter Contest*—for farm men and women, in county or district—perhaps sponsored by local or county newspaper or an interested organization.

Suggested Subjects:

(1) "The Most Worthwhile Improvement Made in Our Home"

(2) "How We Have Made Home More Attractive by Using What We Had at Hand"

(3) "Is it Worthwhile to Put Work and Money Into Making a House Comfortable and Attractive"

(4) "The Effect of Improved Home Conditions on Our Family"

(5) "Why the General Lack of Conveniences in Farm Homes—Lack of Income or Appreciation,"

2. *TRAINING SCHOOL ON STORAGE SPACES* for Carpenters and Homemakers.

3. *DEMONSTRATION HOMES*—entire house or certain parts (Small houses or poorly equipped ones preferred). One such demonstration in each community, or two or three to county.

4. *DISTRICT OR COUNTY MEETINGS ON HOME IMPROVEMENT* held in spring or during a week to be designated.

5. *HOME DEMONSTRATION CLUB MEETINGS*—regular home improvement project demonstration.

6. *COMMUNITY ORGANIZATIONS, COMMUNITY LEAGUES, GRANGES*, etc. —special programs on phases of the county better housing program.

7. *PUBLICITY—Radio,- newspapers, farm papers, etc.*

8. *ACHIEVEMENT CONTEST*—to give recognition to individuals or groups for outstanding accomplishments, judging may be based on reports submitted.

9. *ACHIEVEMENT PROGRAM* and Tour in Fall—Tours may be planned by communities, or as a county feature.

10. *AWARDS for contests*—essay, letter or achievement—might be secured from:

County Bankers Association
County Advisory Boards
County Federation of Home Demonstration clubs
Federation of Womens Clubs
Civic Clubs
Newspapers
Merchants or dealers in building materials

HORTICULTURE

FLOWER GARDEN NOTES FOR APRIL

It is possible to prevent plant diseases, not to cure them. Bordeaux mixture is the standard preventive for fungous diseases; have it ready to spray the first foliage of roses, phloxes and other susceptible plants. For mildew, rust, leaf spot, also for plant lice and leaf chewers, prepare a dust of one part tobacco dust, one part lead arsenate, and nine parts dusting sulphur.

Keep out infection by patrolling for diseased plants that must be removed and burned and by being sure that bulbs or plants just purchased are not infected or infested. Gladioli, dahlias, and other summer bulbs and annuals do best if planted where they did not grow last year.

Control insects; they carry diseases. Leaf hoppers, plant lice and others spread diseases like "aster yellows" and "dahlia stunt."

To keep away diseases use plants adapted to growing conditions of the site, tolerant of the soil and exposure, hardy and resistant. Others will be more susceptible to disease and spread it in the garden.

Sunlight and good circulation of air are preventives of disease. Crowding, shade, and dampness are unhealthful for most flowering plants.

Garden supplies for April include spray and dust materials, fertilizers, garden tools and reliable seeds and plants.

For early bloom, start annuals indoors or in frames. The ones that do not transplant well can be started in pots. The same annuals sown later out of doors will bring a new crop of flowers.

A FLOWER FOR APRIL

Doronicum is a yellow daisy that blooms in April. "Leopard's Bane" is its common name. It sends up flowers, one to a stalk, above the leaves which cluster at its base. Yellow daisies are always acceptable but this one is unusually early, blooming with the jonquils and tulips and continuing through May if the blossoms are not allowed to wither on the plant.

In July and August the plants become dormant and need to have their fading foliage hidden by the fresher leaves of plants that have longer lived foliage.

Doronicum once established, blooms profusely and is effective among lavender, tulips, blue hyacinths, "Lucifer" daffodils, irises and columbines and nepetas. They are also effective with flowers of low growth like violet, viola, pansy, crocus, arabis, squills, gromwell, phlox divaricata, mertensia, longheart, vinca, and creeping polemonium.

These April daisies thrive in almost any loamy garden soil and tolerate rather heavy types. They cannot stand drought, however, and need watering if weather is excessively dry during their blooming season. As they are especially effective in groups, the plants may be set in colonies, six to eight inches apart. Lifting and dividing can be done every third year. Times for planting are in fall and in early spring when tips have just begun to start.

Doronicums are good for cutting. They are also recommended for forcing. Like other early blooming flowers Doronicum does well if given a light protection in winter of loose litter and some shelter from winds by foliaged plants, bank, wall or building.

Doronicum is a native of Europe and Asia. There are numerous species some of which have tuberous roots. Commonly they grow one to two feet high and have flowers two to three inches across. Doronicum plantagineum, variety excelsum, "Harper Crewe," grows to five feet and has four-inch flowers. It has a tuberous root and needs some sand in the soil. D. caucasicum is early in flower. D. clusic is later and has larger flowers. D. Pardaliauches sometimes has flowers on a stem.

Roots or tubers of these flowers cost about thirty cents each or three dollars a dozen. If they are successfully grown, sale of flowers in April and early in May will usually pay for several dozen. In three years roots can be dug and potted for forcing.

CRAIG COUNTY RID OF SCRUB CATTLE

Back in the fall of 1922 a five-year plan for ridding Craig county of scrub and grade breeding bulls was started. Less than a dozen registered bulls could be found there. Poor local strains of Shorthorn, Hereford and other breeds had existed for years. Cross breeding of poor stock and inbreeding were showing their bad effects.

The farmers of Craig county were resting at ease, thinking that their herd sires were quite satisfactory. Not a few doubted that it would be profitable to pay the price for good registered bulls. Consequently, the campaign for better stock was slow in starting and was mostly confined to the larger breeders.

By the third year about sixty percent of the farmers had displaced grades with purebreds; but the remaining forty percent still doubted the wisdom of this practice. However, with a sixty percent majority, public opinion was against them and they, too, were induced to make the change, though many of them did so against their better judgment and only because of a willingness to try the experiment.

In November, 1927, a representative from the animal husbandry department at Washington, together with a specialist from the state extension division at Blacksburg, visited Craig county and, after a thorough investigation, declared it clear of scrub and grade breeding bulls. The last one had been butchered for beef. The question then was, "Will the farmers go back to the old way or stick to purebreds?"

"Seven years have passed," writes County Agent W. O. Martin. "Years of demoralized cattle prices; years that looked as though it would be impossible for cattlemen to survive. But Craig is still clear of scrub and grade bulls. The most surprising feature is that those who were most skeptical of the value of registered sires are now the most enthusiastic.

"Only a few weeks ago a farmer who was one of the last to purchase a purebred bull told me that he had eight cows and that the difference in the price he received for the calves from his purebred bull, as compared with prices from the grade he previously owned, would pay the difference between the cost of a grade bull and that of a purebred, in one season.

"Others make statements equally as gratifying. If there is a farmer in Craig county who has not benefited by the five-year plan for better breeding of beef cattle, I have not heard of him."

THE IMPORTANCE OF SOIL ORGANIC MATTER IN VEGETABLE CROP PRODUCTION

Jackson B. Hester, Soil Technologist
Virginia Truck Experiment Station, Norfolk

Since the net returns for vegetable crops have been so low more attention has been paid to the basic economic production of these crops. Soil management, such as maintaining high organic matter content and correct soil reaction (pH)*, occupies a prominent place in economic crop production. This article deals with some of the aspects of the soil organic content and soil reaction upon the growth of vegetable crops and the availability of certain plant nutrients.

The Coastal Plain section of Virginia represents one of the oldest farming regions in the central Atlantic states. Much of this land has been farmed for more than two hundred years and trucked for the last sixty years. Cropping systems and practices have not provided for maintaining the fertility of the soil generally and consequently crop yields have decreased regardless of large applications of fertilizer. Since the yields of truck crops have not, in all cases, been commensurate with the fertilizer used, some basic soil factor is in neglect.

Variations in Soil Organic Matter Content

The variation in the color of the soil is revealed by casual observation. This difference in color of the surface soil is due in part to the organic matter content. The nature of the variation in organic matter content of the trucking soils found in Eastern Virginia is noted in Table 1. These analyses represent the average and not the maximum variation in each case. From these figures it is evident that the average trucking soils vary considerably in organic matter content. The best trucking soils are, however, the ones within the higher limits.

TABLE 1

The Organic Matter Content of Some Trucking Soils in Eastern Virginia

Soil Series	Percent Organic Matter
Portsmouth Sandy Loam	2.0 to 8.0
Sassafras Sandy Loam	1.2 to 2.5
Norfolk Sandy Loam	1.1 to 2.2
Norfolk Fine Sand	0.8 to 1.5

Soil Organic Matter Content and Crop Growth

Several factors influence the growth of vegetable crops in the field very markedly. The soil reaction (pH) and organic matter content are probably the most pronounced. Table 2 shows the influence of the soil organic matter content on the growth of spinach at low pH values with other factors being the same.

Again in Table 3 is given the influence of organic matter at low and optimum pH values upon the yield of several vegetable crops. These figures clearly point to the advantage of organic matter in the growth of vegetable crops. Peat moss, low in plant nutrients, was used as the source of organic matter in these experiments as this limited the error of adding nutrients. However, sufficient nutrients were added to each soil to support the best growth shown, which would make the conditions comparable to the addition of cover crops in the field.

Soil Organic Matter and Phosphorus Availability

The organic matter content influences many properties of the soil. The availability of phosphorus is very pronounced. At low pH values aluminum comes into solution which is both toxic to plant growth and precipitates phosphorus from the soil solution. Therefore, when the soil is acid and the organic matter content is low very little value is realized from the phosphorus added to the soil. Even at the optimum pH value for the growth of a crop, organic matter aids in holding phosphorus in a state available to crops. Other plant nutrients are affected to a more or less extent. Several crops, like potatoes, sweet potatoes, etc., are grown in an acid soil (pH 5.0 to 5.5). Owing to the toxic effect of soluble aluminum on plant growth at these low pH

*pH 7.0, neutral; 6.0, slightly acid; 5.5, medium acid; 5.0, strongly acid.

FARM MANAGEMENT **AGRONOMY** SOILS CROPS

Use Better Seed—It Means Larger Yields, Better Quality Crops, and More Profits

SPRING SEEDING OF CLOVERS AND ALFALFA

It is poor practice and false economy not to grow legumes in the rotation. For the want of a better definition we might say that a legume is any plant which has the ability to take and utilize nitrogen from the air. This ability of deriving its nitrogen from the air is what makes the leguminous crop so valuable to the farmer, for whatever nitrogen is taken from the air is obtained at practically no cost and also reduces the amount of nitrogen that must come from the soil. If, then, the legume crop is turned under, the soil gains whatever nitrogen the plant was able to gather from the atmosphere. The nitrogen is taken in at the roots by bacteria that live in nodules attached to the roots. Therefore, it may be seen that it is important to seed legumes in the rotation in spite of the fact that the cost of seeding an acre is usually greater than when seeding some non-legume plants.

Since it is now the time of year for the seeding of certain legumes, let us discuss the cultural practices for those legumes which give best results when seeded at this time, red clover and alfalfa.

There are two main varieties of red clover: medium red, and sapling or mammoth red clover. The use for which red clover is grown, or the mixture in which it is seeded, should determine the kind to seed. If seeded alone with the intention of cutting one crop for hay and one for seed, medium red clover should be the choice, since sapling clover will not mature two crops the same year. Plants grown from foreign sources of medium red clover seed are very susceptible to a disease known as anthracnose. Regardless of the higher price of domestic seed, it is more economical to buy seed from a domestic source rather than from a foreign source. Some of the domestic sources of seed which have given excellent results are Virginia, Tennessee, Michigan and Ohio.

If the clover is seeded with timothy and red top, as is often done in a well-planned rotation, sapling or mammoth clover is recommended in place of medium red clover. This recommendation is made because of the fact that sapling clover matures for hay two weeks later than medium red clover, which, incidentally, coincides with the time of maturity of the timothy and red top. Thus a mixture of sapling clover, timothy and red top maturing at the same time will produce a greater amount of good quality hay than would a mixture the elements of which matured at different times. If the large, coarse growth of sapling clover is objectionable, the amount seeded may be reduced by three pounds per acre and an equal amount of alsike clover substituted in its place. Sapling clover being an American grown product, has the added advantage of being resistant to anthracnose. Its disadvantage of producing only one crop a year may, after all, be an advantage from a soil fertility standpoint. The second crop, while not maturing, will still make considerable growth and, if allowed to fall on the land, will greatly enrich it.

Red clover cannot compete successfully with weeds and is likely to be crowded out; therefore, it is almost always seeded with small grain as a nurse crop. It may be seeded either in the winter or early spring on fall-sown small grain or in the spring with oats. When seeded in the spring on fall sown small grain it is usually broadcast and either allowed to freeze in or is seeded a short time later and is covered by harrowing. When a drill is available even better results are secured by drilling shallow, crossing the grain drill rows. When seeded in the spring with small grain, it is usually seeded at the time of planting the small grain. Regardless of the method of seeding, whether with a broadcast seeder or with the seed attachment of a grain drill, red clover seed should be covered only shallow. Experiments have indicated that the best stands were secured with the most prompt germination. The longest rooted seedlings come from seeds planted one-fourth to three-fourths of an inch deep. Less than one-half of the seeds covered with one inch of soil develop into plants, and less than one-fifth develop when covered two inches deep.

On one of the college fields a good stand of clover is very much in evidence only on a portion of the field. That portion was harrowed last spring immediately after seeding the clover. The remainder of the field has no clover, harrowing having been discontinued in less than a day.

When seeded alone, red clover should be seeded at the rate of 10 pounds per acre. This amount may be reduced to 8 pounds when seeded in a mixture of 6 pounds of timothy and 3 pounds of red top per acre.

It has usually been recommended that alfalfa be seeded alone in August. However, during recent years summer droughts have brought about changes which make it more advisable to seed alfalfa in the spring, either alone or with a nurse crop. When seeded alone, one of the essential requirements of a good stand is a finely pulverized and well-packed seed bed. This condition may be had by preparing the seed bed in the usual manner and finishing by compacting the seed bed with a roller or cultipacker. Seeding may then be done either with the seed attachment of the ordinary grain drill or with various types of broadcasting devices such as the Cyclone seeder, the horn seeder, the endgate seeder, or by hand. When seeding with a grain drill, there is danger of covering the seed too deeply and for that reason the spouts should be kept out of the ground during this operation. Afterward, the seed should be covered lightly with a harrow. Alfalfa seed should be sown at the rate of 20 pounds per acre.

The use of a nurse crop is generally inadvisable. However, some farmers are growing successful crops of alfalfa when seeded with spring oats or on fall-seeded small grain. If seeded with oats, not more than one bushel of oats should be used, and the oats should be cut for hay at heading time. Otherwise there may not be enough moisture for both the oats and alfalfa.

The first cutting of spring-seeded alfalfa, without a nurse crop, usually contains a high percent of weeds. However, if there is a good stand of alfalfa, weeds should not continue to be troublesome.

HORTICULTURE

NOTES ON VEGETABLE CULTURE FOR MAY

Planting. May is one of the busiest months of the year for the home gardener, as far as planting is concerned.

Seed should be planted at varying depths, depending upon the size of the seed. The soil should be firmed over the seed to insure quick and better germination. For some vegetables, such as parsnips, salsify, carrots, etc., a light mulch of well rotted manure or woods mold will aid in securing a stand. Make the rows straight. Group early maturing vegetables together in order that succession crops may be planted when the early crops are used up.

Transplanting. Care should be taken in removing young plants from the plant bed to leave as much soil as possible on their roots. As soon as they have been set in the garden, they should be watered; and after the water has soaked into the ground, some dry dirt should be pulled over the moist soil and firmed.

Fertilization. Use a 5-8-5 or 4-12-4 fertilizer on your garden at the rate of 1000 pounds per acre (approximately 25 pounds per 1000 square feet.) See that this fertilizer is thoroughly mixed with the soil.

Cutworms. Tomatoes, cabbage, and pepper plants may be protected from cutworms by using paper bands around the stems. About an inch of paper should be below the surface of the ground and from 1 to 2 inches above. Cutworms may also be controlled by poison bran mash made from 5 pounds of dry bran, ¼ pound Paris green, 1 pint syrup or molasses, and sufficient water to make a crumbly mash. Keep poultry out of the garden as the mash is poisonous.

Slugs and Snails. Slugs and snails eat large ragged holes through the leaves of the plants and destroy young seedlings. Remove all rotten boards and trash from the garden. Place strips of air slaked lime, soot or sifted wood ashes around the garden. Slugs and snails coming in contact with this material throw off so much slime that death follows.

Flea Beetles. Flea beetles are small, dark colored insects which jump about when disturbed. Cleaning up grass plots near the garden will aid in control. Dusting with 1 part calcium arsenate to 15 parts hydrated lime is recommended.

Chewing Insects. Chewing insects, as the name implies, eat portions of the plant. Among the more common chewing insects are the Mexican bean beetle, potato beetle, cabbage worm and others. They may be controlled by spraying or dusting with magnesium arsenate in these proportions: Spray—magnesium arsenate 5 level tablespoonfuls to 3 gallons of water. Dust—magnesium arsenate, 1 part; hydrated lime, 3 parts. Place the poison where the insect feeds, which is usually on the undersides of the leaves. Thoroughness is essential for control. Start spraying or dusting when the insects first appear.

Sucking Insects. Sucking insects, such as aphids or plant lice, injure the plant by sucking the juice from the leaves and causing them to yellow and curl. They may be controlled by spraying with Black Leaf 40 (nicotine sulphate) in these proportions: nicotine sulphate, 1½ teaspoonfuls; soap, 1-inch cube; water, 1 gallon. Remember it is necessary that the spray hit a sucking insect to kill it. Thoroughness, as well as timeliness, is essential. A satisfactory homemade tobacco spray may be prepared by soaking a pound of tobacco stems, stalks, etc., in a gallon of water for 24 hours. Use the liquid undiluted. Fairly good results may also be secured by spraying with a soap solution made by dissolving a 1-inch cube of hard laundry soap in a quart of water.

Sweet Potato Seed. Only clean, bright sweet potato seed should be used for bedding. The grower is advised to purchase certified seed wherever possible. Before bedding treat the seed for 10 minutes in a solution of 1 ounce of corrosive sublimate dissolved in 8 gallons of water. Use wood or earthenware containers as corrosive sublimate will corrode metal. The mixture is poisonous and should be kept away from children and livestock.

SUMMER CARE OF SMALL FRUITS

To secure the best results from plantings of strawberries, raspberries, blackberries and dewberries it is necessary that they receive the proper attention during the growing season. Strong, well-grown plants will yield good crops; weak, poorly-grown plants will scarcely pay for their cost and the labor of setting them.

All blossoms on the newly-set strawberry planting should be removed. If allowed to remain they will produce a few berries but the drain on the plants will be so great that growth will be retarded and fruit production next year will be greatly reduced. The planting should be gone over several times to make sure that all the blossoms are removed.

Strawberry plants that were set this year should be thoroughly cultivated during the entire growing season. Cultivation helps to conserve moisture and prevents the growth of weeds. The latter, if permitted to grow undisturbed, will rob the strawberry plant of food and moisture and will materially reduce the crop for next year.

The usual method of growing strawberries is the matted row system. In this system the runner plants are permitted to set and form a solid, matted row. It is desirable to keep the row narrow so that picking will be made easier. It is best to keep the row about 14 inches wide. After this width has been attained all other runners should be cut off.

Most of the bush fruits, particularly black raspberries, are susceptible to anthracnose. This disease may be controlled by using the following sprays:

1. In spring just after growth begins—5¼ gals. commercial liquid lime-sulphur and ½ pound calcium caseinate in 50 gals. of water.
2. One week before bloom.—1 gal. commercial liquid lime-sulphur and ½ pound calcium caseinate in 50 gals. of water.

Leaf-spot, another serious disease, particularly on red raspberries, may be controlled by using three sprays of 4-4-50 Bordeaux applied—

1. Immediately after fruiting canes have been removed.
2. Three weeks after No. 1.
3. Three weeks after No. 2.

In the older plantings of bush fruits a light application of fertilizer may be advisable particularly if the canes have not been making good growth. Nitrate of soda, applied as a side-dressing at the rate of 50 to 75 pounds per acre, will give good results.

The new shoots of the black raspberry and blackberry should be tipped. When the shoots of the black raspberry reach a height of 2½ to 3 feet, the terminal bud should be pinched off; blackberry shoots are tipped at about 4 feet. This strengthens the stem and causes the formation of many laterals. This method usually makes it possible to eliminate staking and tying.

FLOWER GARDEN NOTES FOR MAY

As soon as the flowers begin to grow, watch for pests. Usually you can see the "chewers" that nip off and devour pieces of leaf, stem, stem pith, buds, and petals. They are the caterpillars, borers and other worms, beetles, grasshoppers, European hornets and pith-nesting bees and wasps. You cannot always see the "suckers" until you look closely. They puncture the surface of the plant and feed on the juices of root, stem, leaf, bud and flower. They leave the plant pale, yellow, weakened, and often with curled, distorted leaves and blasted, misshapen flowers.

The "suckers" are aphids, scale insects, white flies, thrips, plant bugs, spider mites, and gall makers. The "chewers" can be picked off or poisoned with arsenate of lead and Paris green applied to parts they feed on. The "suckers" must have contact poisons or repellants, for which the materials commonly used are: nicotine sulphate, soaps, miscible oils, dusts of lime and of sulphur. See directions in Farmers' Bulletin 1495 for preparing and using insecticides to combat pests in flower gardens.

A Flower For May

"Dr. Regel" is the earliest day lily to flower. It blooms in May; height, a foot and a half; color, clear, orange-yellow; fragrance, fine; as a cut flower, handsome. In the garden it is effective in colonies. Other colonies of phlox divaricata, variety "Lapham blue," are effective with it. Bulbs of "Dr. Regel" cost about 20 cents each, or $1.50 a dozen. They increase rapidly, and are easily naturalized under trees, by streams, or in open borders. Other varieties of day lilies bloom until September.

THE SOIL EROSION MENACE

To the farmer, soil erosion has been the curse of the ages. To it his annual fertilizer bill can largely be charged. When our forefathers cut the virgin forests, land was plentiful and fertile. So fertile and plentiful, in fact, that little thought and attention were given to maintaining its high state of productivity. One piece of land after another was mined by cropping, leaching and erosion, abandoned and another cleared.

Our farms have come down to us literally bled of their plant food elements necessitating the use of from four to eight million tons of commercial fertilizers annually to maintain a decent crop production level—the penalty American farmers are paying for gross negligence of their soils. There is lots of good land still available in the country, to be sure, but this in many cases is still being cropped and leached of its life giving properties at an appalling rate.

If we are to build a permanently prosperous agriculture, we must adopt a new attitude toward soil management; a policy which will abandon some 50,000,000 acres of non-productive lands that are now being tilled at a loss to their owners; prevent, by correct drainage and good cropping, soil erosion that is constantly gnawing away at the natural food supply; and, plow into arable soils plenty of legumes and good fertilizers.

Waste lands should go back to timber, and cultivated acres brought to a better state of productivity. Fertile soil makes for a happy, prosperous people and a great Nation.—Southern Planter.

RESEARCH MUST GO ON

(Continued from page 1)

is today just completing the eradication of the cattle tick—and only agricultural research taught us how. Still living is Dr. McCollum whose discoveries of vitamins have tremendously influenced the consumption of milk, vegetables, and other farm products. Dr. Charles H. Herty, whose work in timber use and conservation has made all Dixie his debtor, is another living example of the value of scientific research; this research may add $100,000,000 to the value of Southern pine forests in this generation. And there are other Babcocks, McCollums, and Hertys ready to serve us and the future if we but give them a chance!

Research in the interest of better farming and better farm life must continue. Herein lies the promise of our agricultural future. Not only must agricultural research go on, but the truths revealed must be effectively carried out to the farmers themselves. There is no doubt of the value or necessity for research. Those who would stop it or even halt it must somehow be brought to understand both the folly and the danger of their doctrines.

For all these reasons farmers and farm organizations should insist that each state government continuously provide ample funds for research. Not only is research necessary for making discoveries in science but it is necessary for another equally important purpose. It is necessary for thoroughly testing out the validity of any seemingly sound farm practice. In an old story a young physician gave pea soup to a carpenter and a blacksmith. The carpenter got well. The blacksmith died. So the young doctor wrote in his diary: "Pea soup cures carpenters but kills blacksmiths." So any one of us may reach too sweeping conclusions from our own individual experience. As The Progressive Farmer has repeatedly urged, experience is of course the only safe guide—but the limited experience of any one individual farmer is not enough. We need the experience of a thousand tests rather than one test. This is what research provides.

HOME AGENTS SUM UP 1934 PROGRAM

(Continued from page 1)

Homes Improved

Better home management and improvements, especially in kitchens, have been other outstanding phases of the program. Housewives themselves made 2,762 labor-saving articles and 1,596 saw to it that their kitchens were modernized with sinks and cupboards, by better arrangement of equipment, or in various other ways.

At least one piece of furniture, sometimes several, was reconditioned by each of 3,083 women who became interested in this type of work. The improvement of walls, woodwork and floors was the concern of 2,418 others. By such means and by more careful management of household funds, homemakers in home improvement projects saved $40,000.

Gain from Markets

The total income from markets in 1934 was $81,795, a gain of $19,360 over last year and the highest peak since the home demonstration markets idea was started in 1931, and even though the total number of markets dropped from 17 in 1933 to 13 last year.

"The market work has three distinct purposes," says Miss Wallace, "First, it raises the standards of products; second, it increases the farm income from the sale of home-raised products; and third, it encourages the use of a larger variety of products in the home.

"The women use their market money for very practical purposes, such as paying taxes and doctors' bills, meeting pressing debts, keeping the children in school; and sometimes it goes for household equipment, such as installing water systems or electric refrigerators and remodeling kitchens.

Recreational Activities

"It has become evident that social and recreational activities are of increasing importance in both the adult and junior work. Such activities were developed last year by 457 communities, 2,638 families learned a new meaning of home recreation, and 190 communities presented plays or pageants. Adults in 21 communities and 4-H club members in 10 communities established community houses. More than 18,000 people attended the 88 county achievement day programs.

"Our home demonstration program in Virginia owes much of its success to the 4,719 splendid local leaders, the 1,111 members of home demonstration advisory boards, and the 2,583 members of the 4-H county councils," Miss Wallace states in her report. "We feel that the hope of the future in extension work rests in these leaders and in others as they may be located and trained to help spread the program over the rural sections of Virginia."

Good pressing, done often, does more than anything to keep old clothes looking like new.

A baby will learn to like new foods if mother gives these new foods one at a time, in small amounts, when the baby is hungry.

FARM MANAGEMENT AGRONOMY SOILS CROPS

Use Better Seed—It Means Larger Yields, Better Quality Crops, and More Profits

THE VALUE OF CORN CULTIVATION

Do we get our money's worth when we cultivate corn? This question is often asked. Judging from the appearance of many corn fields, some farmers do not think that it is worth while. When proper cultivation is carried out in a systematic manner a larger pile of corn is harvested.

Preparing the seed bed for corn is really the first cultivation and upon this operation depends largely the future treatment of the crop.

Corn should be cultivated flat, except where the soil is wet, and then wide beds which will accommodate four or five rows should be used and these cultivated flat.

Before undertaking a discussion of the various methods of cultivating corn, it may be well to consider the reasons for cultivating any crop. If we understand why cultivation is desirable it will be much easier to decide how it may be done in the most satisfactory manner. The following data collected by the Virginia agricultural experiment station will show conclusively the value of corn cultivation:

Plat No. 1—No cultivation, weeds allowed to grow, yield 8.2 bus.

Plat No. 2—No cultivation, weeds cut with hoe, yield 49 bus.

Plat No. 3—Cultivated three times, yield 59.5 bus.

Plat No. 4—Cultivated five times, yield 58.7 bus.

In comparing these results it is easily seen that the greatest increase was secured by weed eradication. By merely keeping the corn free of weeds an increase of 41 bushels was secured. There are two big reasons why weeds are so harmful not only to corn but to any cultivated crop. When the plant is needing every drop of available moisture it can get from the soil, the weed is robbing it. Most of the soils in our state contain no more plant food than the plants can easily consume. The weed is beside the plant robbing it again. Therefore, when we remove the weeds, available plant food and water is being conserved for our crops.

When comparing the cultivated plot with that kept free of weeds but not cultivated, we have an increase of approximately 10 bushels. Here the increase is due to a greater moisture holding capacity and soil aeration made possible by cultivation. There is yet another advantage to be had from corn cultivation, which concerns the fall seeded grain which is to follow. If the corn fields are free of weeds and in good physical condition when the crop is harvested, preparing the seed bed for small grain is not a problem. It can be put into ideal shape with a minimum of work. If the field is weedy, plowing may have to be resorted to.

As mentioned above, the first cultivation the corn crop really gets is the proper preparation of the seed bed. After the corn has been seeded and begins to come up it should be cultivated with a rotary hoe, section harrow or smoothing harrow. This cultivation will remove small, shallow rooted weeds without damaging the corn whether it is up or not. Cultivation with this type of implement may be made irrespective of the rows. This method of cultivation may be safely used until the corn is four to six inches high. The subsequent cultivation should be made often enough to control the weeds and keep a loose mulch on the surface. Usually this means cultivating after each heavy rain. The cultivation should be kept up until the corn begins to tassel. After the corn has reached this stage the ground will be well shaded, thus preventing rapid weed growth and loss of moisture.

Care should always be exercised to see that corn is not cultivated too deeply. Deep cultivation, since it breaks many feeder roots, is very harmful to the corn plant. The lateral roots are within a few inches of the surface and within thirty days after planting they have overlapped the rows. It is the purpose of these roots to gather food for the plant and, therefore, they should be carefully protected. No cultivation should be more than three inches deep.

Many people seem to have the idea that it is desirable to throw a big ridge of soil to the plant, usually called "laying by," to prevent it from being blown over during rain and wind storms; but contrary to the general opinion this is not true. If the plants are to be blown over by the wind, any soil that you might throw to them with a cultivator will not prevent their falling. Our advice is to throw to the plant only enough dirt to cover the weeds that are in the row and remember to make the cultivation shallow.

The chief object in cultivating corn is to keep the land free of weeds and a mulch on top until the corn begins to tassel. Any cultivation more or less than this is not economical.