

HERBS . . . Their Culture and Uses

A. E. HUTCHINS and L. SANDO

Division of Horticulture, Agricultural Experiment Station
University of Minnesota

UNIVERSITY OF MINNESOTA
DOCUMENTS
SEP 17 1936
ST. P. - CAMPUS LIBRARY



UNIVERSITY FARM, ST. PAUL, MINNESOTA

Published in furtherance of Agricultural Extension, Acts of May 8 and June 30, 1914. F. W. Peck, Director, Agricultural Extension Division, Department of Agriculture, University of Minnesota, Coöperating with U. S. Department of Agriculture.

This archival publication may not reflect current scientific knowledge or recommendations.
Current information available from University of Minnesota Extension: <http://www.extension.umn.edu>.

Herbs... Their Culture and Uses*

By A. E. HUTCHINS and L. SANDO,
Division of Horticulture¹

IN the gardens of our ancestors, herbs played a much more important part than they do in the gardens of today. Many say that the herb garden is a thing of the past, belonging to a more romantic period in which people could devote more time to the esthetic side of life than they are willing to in this more materialistic age. Let us hope that this is not so and, if we can not find the time to plant and care for a real herb garden, let us attempt to become familiar with and enjoy some of the more pleasing and attractive herbs by allocating some portions of the flower and vegetable garden to their use.

Herbs have not played a very important part in recent American gardening although the early settlers undoubtedly brought many of them with them from Europe where a wide variety of herbs have an important place in nearly every garden. Within the last decade, however, the culinary herbs have been receiving increased attention and popularity. Many inquiries are received in regard to their habits, uses, and culture and it is the purpose of this article to attempt to answer some of the questions most frequently asked.

What Is An Herb?

From a technical standpoint, an herb is a seed plant whose stem does not develop woody tissue, as that of a shrub or tree, but persists only long enough for the development of flowers and seeds. It may be an annual, biennial, or perennial. But this definition is confusing, since practically all of our vege-



Fig. 2. *Archangelica Officinalis*. Angelica.

tables and garden flowers answer this description. Therefore, we shall define herbs, for the purpose of this article, as those plants which, because of their aromatic and healing properties, are useful for medicinal, perfuming, or flavoring purposes and which, in some cases, may also have a definite ornamental value as well.

Uses

Having this definition in mind, herbs may be classified, according to their uses, as medicinal, culinary, aromatic, and ornamental. Some of them confine themselves strictly to one group; others may fall into two groups; while still others may be useful for all four purposes.

Medicinal

If we look through some of the earlier botanies and herbals, we find that many herbs and other plants were said to have wonderful cura-

tive properties. Many amazing and gruesome concoctions were prepared which, if we can believe the literature, could cure, or at least alleviate, practically all of the ills of mankind. With our present more enlightened knowledge of medicine, we know that, while many plants do have a real medicinal value, many of them do not, and the healing powers ascribed to them were, to say the least, highly exaggerated. Care should be exercised in the medicinal use of herbs. Some herbs are harmless while others may be very dangerous. For the proper use of medicinal herbs, one should be well trained in their preparation and curative properties. With the exception of some of the harmless, commonly used home preparations which may be refreshing and stimulating, it is best not to resort to herb doctoring unless one knows exactly what to expect from every herb used. To be on the safe side, it is best to leave the prescribing of herbs to the skilled physician and their preparation to the herb specialist and pharmacist.

Culinary

It is in the culinary art, perhaps, that gardeners should find the most use for herbs. It is to be regretted that the culinary herbs do not play the important part in American cookery that they do in European. The English housewife uses many herbs; the French and German many more; but the American is well acquainted with only a few although, as previously mentioned, the demand is increasing. The use of herbs opens the way to the preparation of an infinite number of distinctive and appetizing dishes; the number depending, to a large extent, upon the ingenuity and resourcefulness of the cook. Herbs have the power to render insipid dishes appealing even to the epicure; to give a delightful cooling

*The material presented in this pamphlet originally appeared in a series of articles in Volume 64, The Minnesota Horticulturist.

¹The authors gratefully acknowledge the courtesy of Professor E. B. Fischer, College of Pharmacy, University of Minnesota, for permission to use photographs for all illustrations except numbers 1, 8 and 13.

and stimulating flavor to drinks of various kinds; to give a new and distinctive flavor to warmed over dishes; and, in many other ways, to lighten the tedious task of preparing the never-ending menus which falls to the lot of the housewife. Many a chef is famous rather than mediocre due largely to the fact that he understands and puts into practice the use of herbs.

Culinary herbs, due to their pungent distinctive flavors, are used only in small quantities as a rule to lend flavor or aroma to the culinary product. For this reason only a few of the most commonly used are grown to any extent commercially. Parsley, popular as a garnish as well, is most extensively grown; sage, universally used in flavoring pork sausage, probably is next in commercial importance; chives are grown to a limited extent by most gardeners; thyme, savory, and marjoram meet a smaller but steady demand; spearmint, fennel, basil, balm, and tarragon are grown to a limited extent in the vicinity of large cities. Some few other herbs are grown by individual commercial growers but for a large number of kinds one

has to depend largely on the home garden for a supply.

Aromatic

NOT the least of the virtues of certain of the herbs are the pleasing and enticing odors emitted by them either naturally or through the crushing of their floral or foliage parts. One can usually tell the presence of herbs in the garden by the clean, crisp, spicy odor which permeates the air near them. Many of them are used for making perfumes, toilet water, and scents of various kinds. While the home gardener usually does not have the facilities necessary for pressing out, purifying, and blending the essential oils responsible for their distinctive odors, many of the herbs will retain their aromatic properties for a considerable period when dried. The flowers or foliage of such herbs may be dried and used in sachet bags for perfuming linens or garments, giving the same results and satisfaction as the more expensive commercially prepared perfumes.

Ornamental Value of Herbs

The group of garden plants under discussion will doubtless remind every one of at least part of an age-old expression, "as the green herb." From this phrase, perhaps the majority of home gardeners have conceived the idea that all herbs are green and that most of them have more or less insignificant flowers. On the contrary, a number of herbs are among the most colorful plants we can grow; some are noted for the brightness of their flowers, such as Valerian, whose crimson blossoms would delight any lover of flowers; Borage; the small blue Woodruff; Bergamot, or Monarda; Chicory, which has the purest blue of any flower known; and Chives, which would surely be grown as a border plant in the flower garden were it not for its long association with the vegetable garden.

Others again have decided value for their foliage; Hyssop, which reminds one of a small evergreen; Lavender Cotton; Variegated Thyme; White Woolly Mint; and many others not excluding Parsley, which also would be grown as an edging plant in the perennial border were it not that, like the Chives, association has relegated it to the vegetable garden instead of using it as a fit companion for the

Lavender Cotton which, by the way, is an herb.

Culture in General

FORTUNATELY for the gardener, the culture of most herbs is not very difficult. In their ability to take care of themselves and survive under adverse conditions, they compare well with many of our weed enemies. However, do not let this weed-like characteristic be misleading. Like all other plants, they will be the most attractive and give the best results if given the proper cultural attention and if planted under conditions most favorable to their development. In the following discussion, only those points which are of general application will be discussed. Special cultural features will be taken up under discussions of the individual herbs.

One of the factors most important in the growing of herbs is a sunny location. While many of them may produce a more luxuriant growth in less open locations, plenty of sunshine appears to be necessary to bring the volatile oils, which are responsible for the odors and flavors of the various herbs, to their maximum development. For this reason, a west, south or southwest slope is desirable although any location receiving a reasonable amount of sunshine will produce plants of fairly good culinary quality.



Fig. 3. *Inula Helenium*. Elecampane.



Fig. 4. *Levisticum Officinale*. Lovage.

Any good garden soil will prove satisfactory for most herbs, although many of them seem to prefer a rather meager, poor soil. If the soil is too rich, their growth is often too rank and the quality of the aromatic oils is poor. Only a few of them, particularly those cut frequently such as parsley, chives, basil, and a few others require applications of manure or other plant foods. With the exception of such herbs as the mints, cress, lovage, pennyroyal, and angelica, which like a fairly moist location, they do best on a rather dry, well-drained soil.

Although most of the herbs produce the best specimens with the most desirable culinary and aromatic properties when grown under what would be considered rather poor conditions for most crops, the soil should be well prepared before planting. Best results can be obtained by loosening the soil to a depth of 18 inches to 2 feet. This aids in deep penetration of the roots. If the herbs are planted in the vegetable garden, fair results can be obtained by plowing to the same depth as for the garden vegetables. All clods should be well broken up. Since many herb seeds are very small, the surface of the seed bed should be very finely pulverized and special care should be taken to see that this is done if the seeds are to be sown in the open field.

Fortunately, herbs require little attention after they have once become established. Cultivate only often enough to kill the weeds and provide a fine dust mulch. Watering is necessary only in periods of severe drouth. In general, they are remarkably free from insects and diseases. Fertilizing is necessary with only a few.

With the exception of tarragon, chives, pennyroyal, and the mints which are always propagated by cuttings or divisions, practically all the herbs may be propagated from seed. Since the seed are often very small and many of them are slow germinating, it is usually well to sow them early in flats or shallow boxes, transplant into pots or flats when the plants are small, and set in the garden as soon as outdoor growing conditions are favorable. This also provides a longer season for the slower growing kinds. Sow shallow in the flats and cover with finely pulverized soil or sand. When planted directly in the field, radishes are often sown in the same row with slow

germinating or very small seed to mark the row until the herbs come up.

Perennial herbs, in most cases, can be propagated by means of cuttings of the roots or tops. Top cuttings, a few inches long, usually root readily if placed in moist, shaded, light soil. As soon as they start growing, they may be transplanted to their location in the garden. Plants may be taken up in the fall, kept in the house or greenhouse during the winter and cuttings made early enough in the spring so that they will be well rooted and ready for setting in the garden as soon as conditions are favorable. To be most successful, hardy perennial herbs should be lifted and transplanted every three or four years. If this cannot be done, a top dressing of rich soil around them each fall will do much toward keeping them in a healthy, vigorous state.

Such herbs as sage, thyme, and savory are often propagated by means of layers. All that it is necessary to do is to lay certain branches, still connected with the plant, down on the ground, peg them down, and cover the joints with an inch of dirt. Under favorable growing conditions, roots will be formed in 3 or 4 weeks at the covered joints. The layered branches may be severed from the plant then and planted whole or cut up into as many pieces as there are rooted joints.

Mints can be divided with little permanent damage by thrusting a sharp spade through the clump and

transplanting the divided parts. Other perennial herbs may be divided in the same manner but the practice is not to be recommended since the plants receive a severe check and are apt to be unsymmetrical. Chives are divided by pulling the plants, which grow in a clump, apart and planting the individual plants separately.

In this region, it is usually necessary to give the perennial and biennial herbs a covering of some material such as straw, marsh hay or leaves for winter protection. Many of them will survive the rigors of our severe winters if so protected; others such as chives, monardas, and mints usually survive without any protection; and still others winter kill regularly and must be replanted each spring. To be on the safe side, it is recommended that all perennial and biennial herbs be winter protected unless the grower is sure that certain ones will survive the winters in his locality without protection.

POPULAR HERBS DESCRIBED

THE following descriptive list contains a brief history of each herb together with a short discussion of its cultural features and uses. No attempt is made to describe all the known herbs. Those presented include most of the herbs commonly used for culinary purposes, a few not so commonly employed and some used chiefly for ornamental purposes.



Fig. 5. *Melissa Officinalis*. BALM.

They are arranged alphabetically according to their botanical names. A more comprehensive list is given in a table on page 14.

Allium schoenoprasum, L.

THE Chive is a hardy perennial plant, indigenous to Europe and Asia. It is closely related to the common onion but has a much milder flavor. This herb should be used more than it is, being at home in the herb, vegetable, or perennial flower garden.

Since chives rarely produce seed, they are propagated almost entirely by division. Take up the old clumps, divide them, and replant the individual division or plant in either the fall or early spring. As a rule, they grow well in any good garden soil. They do best in a sunny location but will grow fairly well in partial shade. If they are cut heavily, a small supply of manure or commercial fertilizer will aid in keeping the plants in good condition.

Chives, with their delicate flavor which, one might say, is so mild as to merely suggest onion, are very useful in the seasoning of nearly everything from soups to cheese with the exception of pastries and desserts. The green leaves are used for this purpose. The plant is attractive with its slender, pencil-shaped leaves and its rather persistent rose-purple flowers borne in small globose heads. Not only is it used as a border plant in the vegetable garden, but it is well adapted and should be of value as a border or specimen plant in the perennial flower garden or as another member of the fast increasing group of plants that may be used for rock gardening. If one does not object to the mild onion-like odor, it can be transplanted to pots in the fall and grown as a house plant. As such it is decorative and the tops can be used for seasoning throughout a large part of the winter.

Anethum graveolens, L.

DILL is a hardy annual which has been used as a culinary and medicinal plant for many centuries. It was early introduced into this country from Europe and has become naturalized in some sections.

The plants are propagated from seed sown about one-fourth inch deep early in the spring in a sunny location. If wanted for use in dill pickles, plant about two months before the cucumbers will be ready. The plants should be thinned to stand about 9 inches apart in rows 15 to 18 inches apart. Dill prefers a sandy soil which is medium fertile. While the soil should be well-drained, addition of water in dry periods is advisable.

The young leaves and stems of dill are often used for seasoning sauces and salads, for flavoring vinegar, and in the making of pickles. The seeds are sometimes used in pastries, soups, and stews, but more often in the manufacture of dill pickles. In the past, dill seeds were recommended for those who had a tendency to sleep in church, since nibbling on them was supposed to dispel drowsiness.

Anthriscus cerefolium, Hoffm.

SALAD CHERVIL, an old-fashioned pot-herb, is a hardy annual and is said to be a native of Europe. In some coun-

tries, it is commonly used as a substitute for parsley. Fern-leaved and parsley-leaved forms are available. Turnip-rooted chervil, *Chaerophyllum bulbosum*, belongs to a different genus but has much the same uses and cultural requirements.

The herb is propagated by seed sown in the location in which the plants are to remain. The seed should be sown one-eighth inch deep and the plants thinned to stand three inches apart in rows 18 inches apart. It grows well in an average well-drained garden soil in partial shade. Maintain the supply by frequent sowings.

The flavor of chervil is milder than that of parsley and the young leaves are excellent in soups, stews, and salads. The curled-leaved forms are much used for garnishing. The roots of the turnip-rooted form are often cooked and eaten much like parsnips.

Aralia cordata, Thunb.

UDO is a stout, hardy, perennial introduced from Japan where the young blanched shoots were eaten in spring either as a cooked vegetable or as a salad. Its use in this country is rather limited, although it is grown commercially in some localities.

It is readily propagated by seed or cuttings. Seeds are sown in March or April, indoors. The plants, when three to four inches high, are set in the garden about four feet apart. If it is desired to propagate a particular strain, cuttings may be taken from green shoots about three-eighths inch in diameter and five or more inches long, cutting just below a joint and rooting in moist sand. In the home garden, the shoots may be blanched by placing a large drain tile or deep box over them just as they emerge from the ground. To obtain the most robust and least branched shoots,

fill this container with light sand or sifted coal ashes. Properly grown shoots from three-year-old plants should be 12 to 18 inches long and one to one and one-half inches in diameter at the base. After the shoots are harvested in the spring, remove the covering and allow the plant to grow normally through the summer except that flower buds should be pinched off unless seed is desired.

In using, boil the shoots in salt water for 10 minutes or so and change the water to remove the turpentine flavor. Then finish cooking and serve like asparagus or creamed celery. An hour's stay in ice water will remove the resin from the shoots, if they are cut into thin slices or shavings. The slices may then be used in salads without cooking. It is also used on toast and in soups. In addition to its culinary qualities, it is a valuable ornamental, many regarding it most highly for this purpose.

Archangelica officinalis, Hoffm.

ANGELICA is a large tropical looking plant although it is a hardy biennial native of Northern Europe, Siberia, Alaska, and the Himalayan regions. The plant is little known in this country, although it is offered by some American seedsmen.

This aromatic plant is propagated by seeds sown in the open ground as soon as they are ripe in the fall or the following spring. The seeds are slow to germinate and are often started under glass and transplanted to the field. When sown in the field, the seed should be planted from one-quarter to one-half inch deep and the plants thinned to stand about three feet apart in rows three feet apart in a sunny location. For best growth, the plants require a medium rich, light, moist loam that is well drained but retentive of moisture.

The leaf stalks may be blanched and eaten like celery or the leaves and stalks may be boiled or roasted. In some places the leaves and outer skin of the stalk are stripped off and the internal part is eaten raw like an apple. Confectioners make an excellent sweetmeat of the tender stems and ribs of the leaves which are also used to decorate pastries. The seeds are used in custards and cakes. Oil, distilled from the leaves, seeds, and roots is often used in flavoring liquors, wines, and custards. The plant, stately in habit, four to six feet in height, stem and leaves covered with a plume-like bloom, and with rather prolific umbelliferous flowers, is attractive, ornamental, and should be of value in the perennial garden. (See Figure 2.)

Armoracia rusticana, Gaertn.

HORSERADISH is a hardy perennial herb, indigenous to Europe and Asia. Both the leaves and roots of the wild plant were eaten in Germany during the Middle Ages, but it is not known just when it came into culture as a garden plant.

The plant grows best in a cool, humid climate and in a deep, rich, mellow soil that is retentive of moisture. It is propagated by root cuttings one-quarter to one-half inches in diameter and four to eight inches long. The cuttings are planted slightly slanting with the top three to four inches below the soil surface. Plant as early as possible in the spring, one foot apart in rows three feet apart and give the bed a heavy coating of well-rotted manure.



Fig. 6. *Mentha piperita*.
PEPPERMINT

Horseradish has little, if any, ornamental value and should be relegated to the perennial part of the vegetable garden. Its chief use is for an early spring relish or condiment for serving with meats. For this purpose, the roots are ground and preserved in vinegar. It is also mixed with mustard and used for the same purpose.

Artemisia spp.

THE ARTEMISIA genus contains a number of useful species which are perennial in moderate climates but need to be winter protected in colder regions or treated as annuals. They are bitter-aromatic herbs or low shrubs several of which are grown for ornamental, medicinal, or culinary qualities. Among the most commonly cultivated forms are: *A. dracunculus* L., Tarragon or Estragon; *A. abrotanum* L., Southernwood or Old Man; *A. stelleriana* Bess., Dusty Miller or Old Woman; *A. absinthium*, Wormwood; *A. lactiflora* or *vulgaris*, Mugwort.

With the exception of tarragon which does not produce seed, these artemisias may be propagated from seed. However, they are readily propagated from cuttings which is the usual method and they also may be propagated by division. In general, they do well on an average, well-drained garden soil but will withstand drier, lighter soils than most garden plants. The plants should stand 12 to 18 inches apart.

The artemisias, in general, are attractive ornamentals, being used extensively for accent plants and foliage backgrounds. *A. abrotanum* has long been known in gardens and is used also as a hedge plant. Several examples of its use for this purpose may be seen in the Twin Cities. Careful pruning aids in keeping the hedge in good shape. For the sake of its densely woolly and deeply cut foliage, *A. stelleriana* is often grown in the flower garden for contrast and as a border plant. *A. lactiflora* is a tall-growing plant of fine foliage suitable for background planting. Some varieties have variegated and golden leaves. Its graceful sprays make it useful for cutting. *A. absinthium*, in addition to its ornamental value, is much used to flavor cordials and bitters. In France, whole fields of it are grown for use as an ingredient of the famous or infamous absinthe liquor. While all the artemisias are used to some extent for making bitters, teas, and bitter beers, *A. dracunculus* is the only one to enjoy much popularity in the culinary arts. Tarragon has a fragrant smell and an aromatic taste for which it is greatly esteemed. The young tops are cooked with other herbs for greens. Those who have it in their gardens can have homemade Vinaigre d'Estragon. The young leaves and tips are used in salads, for flavoring salad dressings, and in fish and meat sauces. Use sparingly since the taste is strong and peculiar. A little enhances and deepens the flavor of the dish while too much may spoil it entirely.

Asperula odorata, L.

SWEET WOODRUFF or WALDMEISTER is a fragrant perennial herb indigenous to Europe and Asia. It is a woodland plant six to eight inches high, with whorls of pointed leaves and tiny white flowers.

This herb is propagated either from seed or by division. Seed should be



Fig. 7. *Origanum majorana*.
ANNUAL MARJORAM

sown about one-eighth inch deep and the plants thinned to stand eight to twelve inches apart. It thrives in partial shade and in all kinds of garden soil.

The dried leaves of woodruff are fragrant with the odor of new mown hay and retain this fragrance for a long time. In Germany some of the Rhine wines are flavored with woodruff and the English use for flavoring cooling drinks. In the flower garden, it has a tendency to become too weedy, but it is an excellent plant for the rock garden if confined in some manner which prevents its too rapid spread.

Borago officinalis, L.

BORAGE is a coarse, annual herb, one and one-half to two feet tall, indigenous to Mediterranean region, and has been cultivated for a long time. The Greeks called it euphrosynon for, when put in a cup of wine, it made those who drank it merry.

The seed of borage may be sown in the open in the spring about one-quarter inch deep. The plants should be thinned to stand about 12 by 15 inches apart and develop best on a poor, light, dry soil in a sunny location. Borage very often reseeds itself, producing a voluntary crop of plants each year.

Borage has clusters of very pretty light blue flowers which, blooming all summer, add much to the attractiveness of the garden. The flowers are very attractive to bees and also are desirable for cutting. The flowers are candied, made into borage tea, and used for flavoring drinks. The young leaves and leafy tips are used in mixed salads, for garnishing, and in beverages. In Italy, the older leaves are gathered, cooked, and eaten like spinach.

Calendula officinalis, L.

POT MARIGOLD, a native of Southern Europe, is an annual herb which has long been used in the garden. At present, it is grown more for its decorative than for its culinary qualities.

Seed are sown about one-eighth inch

deep, outdoors, early in the spring, or indoors for later transplanting. The plants are spaced about 12 to 18 inches apart. They prefer a sunny location and will do well on a poor, sandy soil that is well-drained. The plant reseeds itself frequently, providing a volunteer crop the next season which, with proper thinning, often gives satisfactory results.

The petals either fresh or dried in the shade are used in broths, soups, stews, and sometimes in puddings and custards to which they impart a deep and unusual richness if used sparingly. Its bright yellow flowers lend a cheerful aspect to the flower garden where it is commonly found and it is also grown under glass for winter bloom. Pinching off the side buds will increase the length of stem and the size of the remaining flowers improving their value for cut flowers.

Campanula Rapunculus, L.

RAMPION is a biennial herb, native to Europe. It is an attractive flowering plant, bearing erect, narrow racemes of bell-like, lilac flowers the second season after planting. The root is sometimes eaten raw in salads or boiled. Occasionally the leaves are eaten in mixed salads and it is said that they are good when cooked and eaten like spinach. Rampion should be sown thinly in early spring in deep, rich, well-worked soil. The plants are thinned to stand six to eight inches apart. Roots may be harvested in the fall, stored, and used during the winter as well as being utilized directly from the field.

Carum carvi, L.

CARAWAY is probably a native of Europe and eastern Asia but it has spread over nearly all the earth. It has been cultivated from ancient times. Seeds of caraway were found in the debris of the lake habitations in Switzerland. It is a biennial; developing little more than a low rosette of finely divided leaves the first year. Slender, erect stems are produced bearing umbels of small white flowers in June and July of the second year.

Since caraway produces seed the second year after sowing and the seed is the part utilized most extensively, seed should be sown in the spring or summer for the next year's crop. Sow in the open ground about 1/8 inch deep and thin the plants to 6 or 8 inches apart in rows 12 inches apart. Caraway does best in a medium fertile, light, dry soil in a sunny location. It is very hardy and usually will reseed itself in the garden after it is once established.

Caraway is well known for the use of its seed in breads, cakes, and candies and is used to a lesser extent in soups, salads, stews, cottage cheese, and other dishes. In some places the roots are cooked and used like turnips or parsnips and the leaves are sometimes used for garnishing and in salads. While the flowers are small and white, the plant itself might well be used in the flower garden for its foliage.

Cichorium intybus, L.

CHICORY is also known as witloof, succory, and French endive. It is probably a native of Europe and the wild plant has been utilized as a salad plant from time immemorial although it was probably not cultivated by the ancients.

It is a perennial but is cultivated as an annual in this region.

At the present time, chicory is grown chiefly for its leaves, used in salads, and its roots used as an adulterant in coffee. It has blossoms of the purest, clearest blue known among flowers, which would make it invaluable for the flower garden were it not that they are borne in such an awkward fashion on their stems. If one expects to obtain flowers when the plants are grown as annuals in this region, they must be started indoors early in order to give them as long a growing season as possible. Chicory plants give the most pleasing and striking effect when massed.

As a salad crop in this region, it is usually grown as a forcing crop and may be forced in the home basement. The seeds are sown in the garden in spring or early summer in rows 15 to 18 inches apart and the plants thinned to about 6 inches apart in the row. A light, friable garden loam is desirable. In the fall, select long straight roots which have a single crown and have not flowered, cut leaves $1\frac{1}{2}$ inches above root, and store in a cool place where they will remain dormant until needed. At intervals, so as to provide a succession of harvests, plant the roots close together in boxes. Cover the crowns to a depth of 6 to 8 inches with fine soil, sand or peat and keep in a semi-dark or dark place. Keep moist, but not too wet, at a temperature of from 55 to 60° F. Heads are produced in 3 to 4 weeks.

Coriandrum sativum, L.

CORIANDER, a strong smelling hardy annual, is probably one of the earliest cultivated of the herbs and enjoys an extremely wide distribution. Seeds of this herb have been found in Egyptian tombs of the 21st dynasty and it is one of the herbs directed to be eaten at the Passover.

Coriander is propagated by seed sown in the open ground $\frac{3}{8}$ to $\frac{1}{2}$ inch deep. The plants should be thinned to stand about 6x15 inches apart. Any sunny, well-drained, medium fertile, light soil is suitable for its culture.

The young leaves of coriander are sometimes used in soups and salads, although some say they taste horribly and smell like bedbugs. However, the seeds are very tasty and are much used as a seasoning or spice in breads, cakes, confectionery, liquors, and curries. Coriander and dill bloom in the summer at about the same time and look well together. The plant grows to a height of 2 to 3 feet and produces attractive, delicate, almost white or pale mauve colored flowers.

Cress

GARDEN CRESS or Peppergrass (*Lepidium sativum*, Linn.) is an annual of the mustard family and a native of Europe. It is a cool weather plant whose leaves are used in salads and for garnishing. Seeds are sown as early in the spring as possible in rows 12 to 15 inches apart. Thin plants as needed for use. If the leaves are removed without injuring the crown, the plant will continue to bear. The leaves are ready for use in 6 to 8 weeks after planting. Successive plantings at 8 to 10 day intervals insures a continuous supply until hot weather, when the plants quickly go to seed. A cool rich soil is desirable to obtain rapid growth and good quality.

Barbarea verna, commonly known as winter cress, American cress, or scurvy grass is another member of the mustard family having the same culture and uses as peppergrass. While it is cultivated in this region as an annual, it is a biennial in warmer climates as is also *B. vulgaris* (rocket, winter cress, or yellow rocket). There are also some forms of the latter which are of some value as an ornamental although rather weed-like in nature.

Water Cress (*Roripa nasturtium-acquaticum*) is a perennial which is a native of Europe but has become naturalized in many sections of this country along ditches and streams. It is used chiefly as an ingredient of salads. Rooting at the joints, it is readily propagated by stem cuttings but may be grown from seed. While it is commonly grown along spring fed streams or ditches, it can be grown in cool moist soil in gardens, hotbeds or greenhouses. When grown along streams of pure, clean water, it will persist indefinitely after it becomes established if not harvested too closely.

Crocus sativus, L.

SAFFRON is a bulbous herb native to Asia Minor. It is of doubtful hardiness in Minnesota and needs winter protection. The warm purple-gray flowers of saffron with their vivid yellow stamens and orange-scarlet stigmas provide a delightful bit of bright color in the garden. While most of the crocuses blossom in early spring, this is fall blooming. The plants are usually grown from seed since the bulbs are difficult to procure.

Only very small quantities are required for culinary uses by the housewife, which is fortunate since the only parts of the plant used for this purpose are the stamens. While saffron is commonly used for its vivid color, rather than its taste, it does develop a deep rich flavor in the dish to which it is added through some affinity with the other ingredients. In the kitchen, the housewife cuts the dried stamens into small pieces in a cup into which boiling water is poured and stirred to extract the yellow coloring. The extract is then used for coloring sauces, creams, biscuits, cakes, preserves, liquors, butter, and cheese.

In England, saffron is grown by the acre so great is the demand, while large quantities are sent abroad every year to former residents of that country. According to Sir Francis Bacon, it was a most useful herb, since he says, "What made the English people sprightly was the liberal use of saffron in their broths and sweetmeats." He further states that "saffron conveys medicine to the heart, cures its palpitations, removes melancholy and uneasiness, revives the brain, renders the mind cheerful, and generates boldness." Truly, a most liberal statement of its virtues.

Cuminum cyminum, L.

CUMIN is a small annual herb which has been cultivated from very ancient times although rarely at present. It is a native of the Mediterranean region. If you are worried about the constancy of your loved ones, grow cumin. As a love potion, it is said to have the rare and valuable quality of preventing fickleness.

Cumin is propagated by seed sown in the open field about $\frac{1}{8}$ to $\frac{1}{4}$ inch deep. The plants should be thinned to stand

about 18 inches apart and grow well in a sunny location. An average, medium fertile, well-drained soil is suitable.

The seeds have a delicious flavor and are used in liquors, cheeses, breads, and curries. While the plant is low and untidy looking, it has some ornamental value as an edging plant due to the small, delicate, lilac flowers borne at the tips of the branches in late spring, each umbel containing 15 to 20 flowers.

Foeniculum spp.

FENNEL is a semi-hardy perennial of short duration which is cultivated usually as an annual. It is a native of Southern Europe and flowers in summer and autumn. Fennel was held in high esteem by the Romans. If early virtues ascribed to it are true, it should be a boon to many since it is said that fat people ate it to make them thin and blind people to restore their sight.

There are three kinds of fennel: the wild fennel, *F. vulgare*; sweet fennel, *F. vulgare var. piperitum*; Florence fennel, *F. vulgare var. dulce*. All three are used in cooking. Wild fennel is a tall, carrot-like plant which is not grown in gardens to any great extent. Sweet fennel is most commonly used as a garden plant and grows to a height of 3 to 4 feet. Florence fennel or finocchio grows about two feet high and has much thickened overlapping leaf bases.

Fennel grows best on a sunny, poor to medium-fertile, well-drained soil that has plenty of lime. It is propagated from seed sown from $\frac{1}{8}$ to $\frac{1}{4}$ inch deep in the open ground in early spring. Wild and sweet fennel plants should be thinned to stand about 18 inches apart in rows 24 inches apart and, if the plants are to be used like endive or celery, the flower stalks should be cut and utilized when about to bloom except for a few to be used for seed production. Florence fennel plants should be spaced about 6 by 12 inches apart. When the thickened overlapping leaf bases of this type form a swelling (called the "apple") about the size of an egg, a little earth should be heaped half way up the base. Cutting can usually begin about 10 days later.

Fennel has a distinctive flavor which is very attractive to many. The stems are often blanched and eaten like celery or endive. "Carosella," a famous delicacy of Naples, is made from the stems of the sweet fennel cut before flowering and served with an oil or vinegar sauce. The leaves are used for garnishing; also in salads, soups, and puddings, and are especially appreciated with fish dishes. Seeds are used in cakes, candies and soups and the oil from them in liquors and soaps. Florence fennel is usually boiled and served with a butter or cream sauce. While the plant is rather large and ragged in appearance and should in general be relegated to the herb or vegetable garden, its finely divided foliage and large umbels of small yellow flowers might warrant a few plants in the background of the perennial border.

Gaultheria procumbens, L.

This is a hardy species of aromatic wintergreen known also as checkerberry, boxberry, partridge berry, or teaberry. It is a creeping prostrate plant with evergreen foliage and red berries and is well adapted for borders, rockeries, and ground cover. The berries are pleasantly aromatic and are relished by children. The leaves are sometimes made

into a tea. Oil distilled from the plant is used for flavoring, perfumery, and medicine.

Wintergreen may be propagated by seeds, layers, suckers, divisions, and by cuttings of half-ripened wood. Cuttings are usually rooted under glass. The plants thrive best in a sandy or peaty, moist soil in partly shaded locations.

Hyssopus officinalis, L.

HYSSOP is a hardy perennial herb or sub-shrub and native of Europe and temperate Asia. While it is often mentioned as a sacred herb in the Bible, it is not known whether that was the same plant which is known as hyssop today.

While hyssop may be propagated by divisions or cuttings, it is usually grown from seeds planted in the early spring in the field about $\frac{1}{8}$ inch deep. The plants should be thinned to stand about 6 by 18 inches apart. Hyssop varies from many of the herbs in that it does best in partial shade. The soil may be lacking in fertility and should be well-drained but retentive of moisture.

The leaves of hyssop are used sparingly to enrich soups and stews and, to a lesser extent, in mixed salads. It is a handsome, shrub-like plant, with purple-blue or mauve flowers borne in loose spikes about 6 inches long throughout the summer. It is said to be rather effective in the perennial border, particularly in conjunction with catnip whose flowers blend well with its own flowers.

Inula helenium, L.

ELCAMPANE is a tall, hardy, perennial herb which is indigenous to Europe and Asia. The flowers are yellow or orange, about two inches across, and borne in summer.

This herb is of easiest culture and of rather coarse habit (See Figure 3). The plants like a sunny location, grow vigorously in any moist well-drained garden soil, are propagated by seed or divisions and should stand about 18 inches apart in the garden.

If color is wished in the herb garden, one may easily secure it with the yellow Elcampane, the bright blue Anchusa, the Crimson Bergamot and the whitish or grey-green foliage of Wormwood. The roots of Elcampane are thick and carrot-like and are used medicinally.

Levisticum officinale, Koch.

LOVAGE is a glabrous, aromatic, hardy, perennial herb. It grows wild in the mountains of Southern Europe and is cultivated in gardens. The plant is tall with leaves somewhat like celery and produces umbels of greenish-yellow flowers in summer. The leaf stalks are blanched and eaten like Angelica or Fennel and the aromatic seeds are used to flavor confectionery.

Lovage is propagated by seed or division. Seeds are sown in a sunny location about $\frac{1}{8}$ to $\frac{1}{4}$ inch deep and the plants thinned to stand 2 to 2½ feet apart. Contrary to most of the herbs, it prefers a rich garden soil that is moist but well drained. (See Figure 4.)

Lavandula spp.

LAVENDERS are semi-hardy perennial herbs indigenous to the Mediterranean region. They are common plants of the old-fashioned and modern garden. There are a number of species and varie-

ties which vary somewhat in their growth habit. Among the most commonly used are *L. spica* and *L. vera*. They are of equal value as herbs but the latter, with its erect, numerous violet- or silvery-blue flowers, is the most decorative.

The lavenders can be propagated by seed, divisions, layers, or cuttings. If seeds are used, they should be sown under glass in early spring and the plants transplanted to the garden about 18 by 24 inches apart. To retain good strains, it is best to propagate by cuttings or division. The plants do best in a sunny location on a rather poor, well-drained, sandy loam.

The different forms of lavender differ in size from 8 inch dwarfs to sub-shrubs 3 feet in height and in flower color from white to violet-blue. They are all ornamental and the dwarf types make excellent rock garden or edging plants.

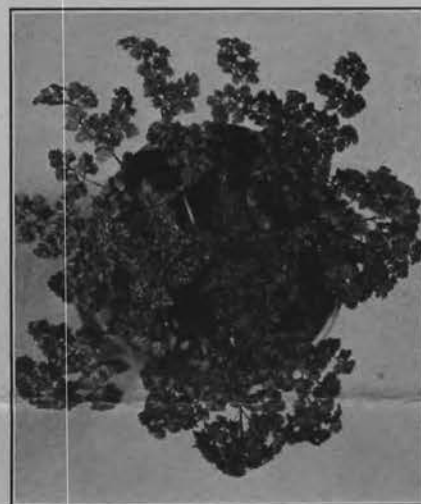


Fig. 8. *Petroselinum hortense*.
PARSLEY

They are greatly esteemed for the fragrant flowers which are dried and used for sachets and perfuming linens. The distilled oil is used in perfumery, lavender water and soaps.

Marrubium vulgare, L.

COMMON HOARHOUND is an aromatic perennial herb, 1 to 3 feet high, and native of Europe and Asia. Since it has become naturalized throughout a large part of the United States, one can expect that its culture is not particularly difficult.

The seeds should be sown in the garden in early spring in drills about 1 foot apart and the plants thinned to stand about 12 by 18 inches apart. The plants do well in a sunny location on a rather poor, fairly dry soil. While hoarhound is usually propagated by seed, it may also be grown from cuttings inserted in a shady place during the summer or grown under glass in the winter or early spring.

Hoarhound with its white-wooly stems and gray-green leaves can often be used effectively as a contrast plant in the perennial garden, although the white flowers borne in summer are not particularly attractive. It has some medicinal value, a tea being made from it for the relief of irritating coughs. The leaves, stems and roots are boiled also

with sugar to make hoarhound candy, an easily given remedy with which many are still conversant.

Melissa officinalis, L.

LEMON BALM, with its pungent lemon scent, is one of the most delightful of all the sweet smelling herbs. This perennial herb, sometimes also called bee balm, is probably native of the Mediterranean region and the Orient and was well known to the ancients since numerous instances are found in the literature of the early Greek and Latin writers recommending it be planted either as a culinary, medicinal or bee plant. (See Figure 5.)

It is propagated by seed sown inside and the plants later transplanted to the field. The seeds are small and should be covered lightly, merely pressing them into the soil. Space the plants 12x18 inches apart and grow in a sunny location on an average garden soil which is dry and lacking in fertility. In a fertile soil, the plant is apt to become a rampant, weedy grower.

The herb is cultivated in some regions as a bee plant. The leaves and young shoots are used for flavoring soups, stews, salads, summer drinks, and for making balm tea which is said to be good for feverish colds. Oil, distilled from the plant, is used in making perfumery and flavoring beverages. The yellowish or whitish flowers appear in late summer.

Mentha spp.

THE MINT genus contains a number of perennial species which are commonly cultivated for the production of the aromatic oil present in all parts of the plant. A few are used also for ornamental purposes. Among those most commonly used are the following: *M. arvensis* L., field, corn, or Japanese mint; *M. piperita* L. (See Figure 6), peppermint; *M. pulegium* L., pennyroyal; *M. citrata* Ehrh., bergamot or lemon mint; *M. spicata* L., spearmint; *M. sylvestris* L., white woolly mint.

The culture of mints is relatively simple for they propagate readily by cuttings or divisions. Since they spread fairly rapidly by runners, root-stocks and leafy stolons, many of them are apt to become rather weed-like and care should be taken to limit them so as to restrict their spread. The mints, in general, do best in a moist, rich loam in partial shade and are usually planted in beds. In autumn, the old growth should be cut close to the ground and in the spring it is well to sift rich soil over them in order to give the runners a chance to root and produce new plants. If the beds become too ragged in appearance, it is often advisable to transplant every three or four years. This not only improves the appearance but checks their spread and aids in the elimination of weeds. Clumps may be forced during the winter in hotbed, greenhouse, or in boxes in the house.

All of them contain essential oils which make the leaves and young shoots valuable in flavoring soups, stews, sauces, jellies, and beverages. Oils, extracted from them, are used in flavoring candy and gum, in scented soaps, in perfumes, and in the preparation of medicine. Among them, the white woolly mint, lemon mint, and pennyroyal are most valuable for ornamental purposes; the first two being very decorative and the

last, due to its prostrate nature, making a good ground cover.

Monarda didyma, L.

HORSE MINT is a hardy perennial often called BEE BALM, OSWEGO TEA, or FRAGRANT BALM. It is a native of North America, being found from New England to Wisconsin northward, and in the Alleghenies southward.

Monardas may be propagated either by seeds or divisions. The seed may be sown either in the open or under glass at a depth of about $\frac{1}{8}$ inch. The plants should be grown in a sunny location but will do fairly well in partial shade. They should stand 8 to 12 inches apart in rows 12 to 18 inches apart. An average, moist garden soil of medium fertility which is well drained but retentive of moisture is desirable.

One of the brightest spots in the garden is provided by the crimson flowers of this and *Monarda fistulosa* mentioned below. These two monardas, blooming in late summer and autumn, are valuable additions to the garden if only for their flowers. However, the foliage of both these species is used in flavoring beverages. Oil of bergamot is much used in perfumes and thymol is prepared from the foliage of one species.

Monarda fistulosa, L.

WILD BERGAMOT is a hardy perennial herb which blooms late in the summer or early autumn. It is a native of eastern North America and has been introduced to most parts of the United States. Crimson, lilac, and deep purple flowered forms occur.

The culture and uses of bergamot are similar to those discussed under *Monarda didyma*.

Myrrhis odorata, Scop.

SWEET CICELY is sometimes called myrrh, sweet chervil, or anise. It is a perennial herb which formerly enjoyed extensive popularity but which for some unknown reason, is not used to any great extent at the present time.

The plant is easy of culture and is usually propagated from seed. It grows well in any average garden soil that is well drained but retentive of moisture.

In former times the leaves were much used for salads and in soups or stews. The green seeds are often chopped up and mixed with salads to give them an aromatic flavor. The seeds are full of an oil which has a pleasanter taste than the leaves and are sometimes used to scent furniture polish. Its finely cut, fern-like, verdant foliage makes it attractive enough to deserve a place in the flower garden. Its white flowers, blooming in the summer, appear to be very attractive to bees which visit them frequently.

Nepeta cataria, L.

CATNIP, sometimes called catmint or catnep, is an erect, hardy, branching perennial of Europe and the Orient ranging up to three feet in height, the leaves being pale green and densely downy. The flowers are whitish or pale purple with darker dots, and are borne in many flowered clusters, blooming in the summer and fall.

The herb is propagated by seed sown in the open ground about $\frac{1}{8}$ inch deep. The plants are thinned to stand 18 by 24 inches apart. The soil should be a medium fertile, light or heavy, well-drained garden soil in a sunny location.

Catnip is a familiar weed in the



Fig. 9. *Ruta graveolens*. COMMON RUE

vicinity of barns and dwellings. Cats are very fond of it, while rats avoid it. The leaves are sometimes made into a tea used as a stimulant or tonic. If one is lacking in courage, grow catnip. Legend states that the root when chewed will make the most timid person fierce and quarrelsome. Catnip, unlike the true mints, does not demand a great amount of moisture but is well adapted to sunny rockeries, where, with its blue flowers and downy foliage, it should be a welcome addition.

Nigella sativa, L.

FENNEL FLOWER is an annual plant which is native of the Mediterranean region. In various places, it is known under different common names, such as black cumin, nigella, nutmeg flower, and Roman coriander.

In the propagation of this herb, sow the seed about $\frac{1}{8}$ inch deep in a sunny, medium-fertile garden soil, which is well-drained but retentive of moisture. The plants should be thinned to stand about 12 by 18 inches apart.

A person acquainted with garden nigella should experience no difficulty in visualizing fennel flower which has a similar growth habit. The plant is small, compact, and attractive with its finely cut, gray-green leaves and pale- or gray-blue colored flowers borne at the end of the shoots. It is sometimes cultivated for the aromatic seeds which are used for seasoning, similar to dill.

Ocimum basilicum, L.

SWEET BASIL, a much branched annual one to two feet high, is indigenous to tropical Asia, Africa and the Pacific islands and has been grown as a cultivated plant for more than 2,000 years. That it is able to exist under very adverse conditions is indicated by Pliny who wrote that the Romans sowed its seeds with maledictions and ill words, believing the more it was cursed the better it would prosper; and when they wished for a crop, they trod it down with their feet and prayed to the gods that it might not vegetate. *Ocimum minimum*, bush basil, is a dwarf form of the above.

The seeds of basil are sown very shallow in the spring indoors or in a special

seed bed and the plants transplanted to the field about 12 inches apart in rows 18 inches apart. The plants do best in a light, medium-fertile, dry soil in a sunny location.

Basil has been in use for thousands of years and is a very popular herb in Italian cookery. It has a clove-like flavor and the leaves and tips of the shoots are used in the preparation of mock turtle soup, in stews, dressings, white sauces and milk gravies, in flavoring salads, and, in the dried condition, for spicing sausages and roasts. There are several horticultural varieties of basil each of which has desirable ornamental qualities in addition to its culinary value. Some of the varieties make very handsome edging plants for the herb, perennial, or vegetable garden. The green and purple bush varieties are dwarf types which are often grown in flower pots. The latter has purple leaves and white flowers. Cutting or shearing makes them grow more compact.

Origanum spp.

There are two species of MARJORAMS which are commonly cultivated in the garden. Both are perennials and indigenous to Southern Europe. These are *O. vulgare*, pot or perennial marjoram, and *O. majorana* (See Figure 7), sweet knot, or annual marjoram. Pot marjoram is coarse and spreading with attractive pink and white flowers blooming in summer. One variety has yellow foliage. Sweet marjoram is a more refined plant and is, perhaps, somewhat more aromatic and more desirable. While it is a perennial, it must be grown as an annual in this region. Both are most attractive when massed in the garden or border and both have the same culinary uses. The flowers and the young leaves and tips of the stems, both fresh and dried, are much esteemed for use in fish and meat sauces, dressings, croquettes, stews and the like. Oil from the same parts is used in scenting soaps and in perfumery.

Although the marjorams may be propagated by cuttings, layers, or divisions, they are most often grown from seed sown indoors. The seeds are very fine and should be scattered on the soil surface and pressed lightly into the soil with a board. Plants should be spaced from 12 to 18 inches apart in the garden. They prefer a medium-fertile, well drained, average garden soil and a sunny location.

Petroselinum hortense, Hoffm.

PARSLEY, a native of Europe, is the most popular of the garden herbs grown in this country. It is one of the oldest of our cultivated plants, having been grown for culinary purposes more than 2,000 years ago. The plant is a biennial but is cultivated usually as an annual. The leaves are used for flavoring and garnishing and in salads. It also makes a very good edging plant in the flower garden and may be used as a potted house plant during the winter where it is ornamental as well as useful.

Parsley seed is slow to germinate. The ancients explained this by saying that the seed went to the devil and back again nine times before germinating. The seed is usually sown about $\frac{1}{8}$ inch deep under glass and the plants transplanted to the garden so as to stand about 6 inches apart in rows 12 to 18 inches apart. If sown out-doors, some quick germinating crop, such as radishes,

should be sown with them to mark the row. It will do well in a sunny location on an average garden soil that is moderately fertile and well drained but retentive of moisture. By using the outer leaves as needed, the plants continue to produce throughout the season. In the fall, plants may be dug up and transplanted into pots. In transplanting, take a considerable part of the root system with the soil surrounding it and reduce the foliage by removing part of the outside leaves. The potted plant is then handled like any house plant. (See Figure 8.)

Pimpinella anisum, L.

ANISE is probably one of the oldest and best known herbs. It is a very fragrant annual indigenous to Asia Minor, Greece, and Egypt. It was well known to the early Greeks and Romans; Pliny, in the first century A. D., stating, "Anesum, green or dry, is desirable in all seasonings or sauces." Dioscorides tells us that the best came from Crete, the next best from Egypt.

Anise grows best in a sunny location. The seeds may be sown in the open in the spring. Sow about $\frac{1}{2}$ inch deep in rows 12 inches apart and thin to 6 inches apart in the row. The soil should be a warm, fairly dry, fertile, light loam. Anise does not withstand transplanting very well and should be sown where it is to remain.

The much fringed leaves and whitish florets borne in lacy umbels make anise an attractive plant, dainty enough for a garden in which appearance is looked for as much as usefulness. The leaves are used for garnishing and salads, while the seeds or oils extracted from them are used in pastries, bread, cheese and apple sauce, for sachet powder, and for perfuming soaps and cordials.

Rosmarinus officinalis, L.

ROSEMARY, one of the best loved herbs, is a perennial in many countries but, unfortunately, is not hardy in Minnesota and must be treated as an annual or pot plant here. All parts of the plant have a characteristic fragrance, which with its leaves, green above and white beneath, and its pale blue flowers, make it a very attractive plant. While used principally in perfumes, added sparingly, it gives a distinctive flavor to preserves, jams, sweet pickles, meat sauces, and poultry. It is also attractive to bees.

Rosemary is easily propagated by cuttings, divisions, or layers but is usually grown from seed. In this region, the seed should be sown indoors in January or February, about $\frac{1}{2}$ inch deep, and the plants transplanted as soon as conditions are favorable so that they will stand 18 to 24 inches apart in the garden. It does best in a sunny, protected location on a medium fertile, well-drained, light, limy garden soil. Potted plants may be kept over winter in the house and replanted in the garden the next spring or used in the propagation of new plants.

Rumex spp.

There are several perennial species of SORREL that have been cultivated for many years as potherbs in Europe and to a lesser extent in this country. While they make good greens, they have no ornamental value and must be handled with care since they are weedlike in

their ability to spread and have a tendency to overrun the garden. Among the most important of these are: *R. acetosa* L., garden sorrel; *R. scutatus*, French sorrel; *R. patientia*, spinach-dock or herb patience. The use and culture is similar for all of them.

The seed should be sown early in the spring about $\frac{1}{4}$ inch deep in drills. Thin the plants to stand 12 to 18 inches apart in rows 18 to 24 inches apart. If grown as a perennial, the roots should be lifted after several years, divided, and replanted. In this process only male plants should be replanted unless one wishes to raise seed. The plants will grow well in any average garden soil.

The chief use of the sorrel is for early greens and salads.

Ruta graveolens, L.

COMMON RUE, sometimes called herb-of-grace, is a strong-scented, perennial herb, native to Southern Europe. Although the yellow flowers are inconspicuous, the soft blue-green color of the leaves makes it an attractive garden plant. While it has a bitter, pungent taste, the finely chopped leaves are often used sparingly in salads, stews, salad dressings, and ragouts.

Rue may be propagated by cuttings, layers, divisions or seed. The plants should be grown about 18 to 24 inches apart in a sunny location. They do well on a rather heavy, poor soil that is fairly moist but well drained. (See Figure 9.)

Salvia officinalis, L.

SAGE is a perennial herb so commonly grown as to be well known to most people. The gray leaves make it a very pleasing contrast in the perennial garden. In addition, there are several varieties varying in leaf shape, leaf color, and flower color. From a culinary standpoint, sage is one of the most used of our herbs. The French make a pickle of the young leaves. It is said that the Chinese prefer a tea made from sage leaves to that made from *Thea sinensis*, L., the plant which produces the tea with which we are familiar. The

dried leaves are also said to make a good substitute for smoking tobacco. In this country, the dried leaves are used chiefly for flavoring meat and poultry dressings, sausage, and cheese. The flavor is strong and the leaves should be used sparingly.

With the exception of Holt's Mammoth variety, which must be propagated by divisions or cuttings, sage is usually propagated by seed which should be sown early in the spring in the open about $\frac{1}{8}$ inch deep. The plants should be thinned to stand about 12 to 18 inches apart in the row. It prefers a rather spare, mellow, garden loam that is well drained. While perennial in nature, it is usually treated as an annual in this region. (See Figure 10.)

Sanguisorba minor, Scop.

BURNETT is a hardy rosaceous perennial herb of north temperate regions which forms an attractive basal clump of fine foliage. The young, piquant leaves taste somewhat like a green cucumber and are used to some extent in flavoring soups and salads. While it is little known as a culinary herb in this country, it is worthy of a place in the hardy border because of the ornamental character of its leaves and its small heads of flowers with drooping stamens. It grows well in an average garden soil and is propagated either by seed or by division of the clumps.

Santolina Chamaecyparissus, L.

LAVENDER COTTON or French Lavender is a much-branched sub-shrub, native to the Mediterranean regions. While it has no distinctive sweetness, it has a fairly pleasant, strong, clean scent. It used to be used in garlands and as a strewing herb but is valued, at present, chiefly as an ornamental. The plant is 18 to 24 inches high and has small, silvery gray, finely cut leaves and diminutive, button-like, yellow flowers borne in summer. In the South it is used for a specimen plant, and in the North for summer bedding and borders. It may be propagated from cuttings which are easily rooted in sand and does



Fig. 10. *Salvia officinalis*. SAGE

well in an average garden soil. Regarded as a hardy perennial in some parts of the country, it must be treated as a tender perennial in Minnesota.

Satureia spp.

THE SAVORY family consists of a number of species of aromatic herbs and sub-shrubs, two of which are commonly cultivated in borders and as potherbs. They are native to Southern Europe and are of ancient culture, being well known to the Romans more than 2,000 years ago.

SUMMER savory, *S. hortensis*, is a small, bushy, annual plant whose little pink or white flowers are borne in small spikes in the upper leaf axils. The leaves, young shoots, and flowers are used in salads, meat and poultry dressings, meat sauces, croquettes, stews, and cooked with fresh peas and beans. Seed are sown about $\frac{1}{4}$ inch deep in a sunny location in the spring. The plants are thinned to stand about 6 to 18 inches apart. The plants grow well in an average garden soil that is poor in fertility and fairly dry. If the foliage is to be dried for future use, the plants should be cut as soon as the blossoms begin to appear and dried in a shady place.

WINTER savory, *S. montana*, is a fairly hardy perennial which is somewhat woody and more bushy than summer savory. It is a good ornamental plant and does well among the stones of the rockery and makes a pleasing edging plant in the flower garden. While not considered to be of as good flavor, its culinary uses are the same as those of summer savory. It may be propagated from seed, cuttings, divisions, or layers. Since it does not transplant well, seeds are sown where the plants are to remain. In general, its cultural requirements are similar to those of summer savory.

Sesamum orientale, L.

SESAME is a tropical plant cultivated from time immemorial in Asia and Africa for its seeds and the oil obtained from them. The seeds, sold under the name of "bene," are used in breads, confectionery, broths, puddings, cakes, and parched. The oil is used in salad dressings and for cooking. This herb can be grown only as a glass-house crop in this region although it may be grown out-of-doors in the Southern United States.

Tanacetum vulgare, L.

TANSY is a hardy, perennial herb which is a native of Europe but has become naturalized throughout a considerable part of the United States. In the garden, it is apt to become a vagrant, spreading rapidly unless carefully watched. If desired only for use as a herb, it can be collected easily from the wild in many places. The leaves are used as a garnish or are shredded and made into a tea, taken as a spring tonic. The juice or extract, while rather bitter, is used for flavoring tansy cakes and puddings and the leaves are rubbed over meat as a preservative.

TANSY may be propagated by seed or divisions. Seeds are sown indoors early in the spring. Due to their small size, they are sown very shallow, merely pressing them lightly into the soil. The plants should be spaced about 10 to 18 inches apart on a medium-fertile, well-



Fig. 11. *Thymus vulgaris*.
COMMON THYME

drained garden loam in a sunny location.

Thymus spp.

THE THYMES are small, fairly hardy, perennial, shrubs or sub-shrubs often used for edgings and rockeries and whose leaves are employed for seasoning. There are several forms which are similar in their culinary properties but vary somewhat in their ornamental values. *T. vulgaris* (Figure 11), common thyme, is an erect, bushy plant about 8 to 10 inches tall bearing tiny grayish leaves and lavender blossoms. *T. serpyllum*, mother of thyme or creeping thyme, is a most valuable plant in the rock garden where it makes a perfect mat of green. It is also used between the stones in flag-stone walks where it is said to emit a most agreeable odor when trodden upon. There are several varieties of the lemon scented thyme such as the silver, golden, and variegated, all of which are useful as herbs or for the flower garden proper. The leaves or young thyme shoots, green or dried, are used for seasoning soups, meat sauces, meat and poultry stuffings, sausages, cheeses, and gravies.

Thymes are easily propagated by cuttings, divisions, layers, or seed. The seed are very small and are merely pressed gently into the surface of the well-pulverized seedbed and are usually sown indoors early in the spring. In early June, the plants may be transplanted to stand 6 to 12 inches apart in a sunny location. The soil should be medium-fertile, light, and fairly dry.

Tropaeolum spp.

NASTURTIUMS, tender annuals, are probably native to Peru and Ecuador. While they are usually considered as ornamental plants, the flowers, young leaves, and young fruits are often mixed in salads and the young, green seeds are used in pickles for their piquancy and as a substitute for capers. There are two species commonly grown both of which have the same uses and culture. These are *T. majus* L., the garden nasturtium, and *T. minus* L., the dwarf nasturtium.

Nasturtiums are fairly easy of culture. They need a moderately good soil, well-drained, and sunny. Maximum bloom is obtained in light or sandy soils and the flowers should be kept picked almost daily. In peaty and very fertile soils,

fewer flowers and more large leaves are produced.

Verbascum spp.

THE MULLEINS are hardy biennial herbs. They are natives of the Old World but several species have become naturalized in various sections of the United States. While they have little or no culinary value, they are used in medical preparations and as ornamentals. Massed in the border planting, they are very effective, their columnar type of growth contrasting with the looser, open growing plants and their gray-green foliage contrasting with the dark- or light-green characteristics of most garden plants. Among the more showy ornamental species are *V. olympicum*, *V. phoeniceum*, *V. Chaixii*, *V. nigrum*, *V. phlomoides* (See Figure 12), *V. pannosum*, and *V. cupreum*. Most mulleins are biennial and hybridize freely but this is not a serious drawback to their use since the hybrids are, in general, as showy as their parents. The varieties and species vary in height and care should be taken to obtain the proper height to fit the use and location.

The Mulleins are easily cultivated since they self-sow and adapt themselves to practically all soils with the exception of those that are cold and wet. Most of them do well in full sunlight although a few flower better in partial shade.

Harvesting, Curing and Storing

AT LEAST a few herbs should be available for winter as well as summer use to insure diversity in the flavoring of various dishes. Fortunately, they are, in general, fairly easy to store. Most of them will retain their aroma or flavor for a considerable period of time if properly harvested, cured and stored. Some kinds may be potted in the fall and grown as house plants during the winter.

In harvesting for storage, those herbs whose foliage is used should be cut on a bright, dry day when they are in full growth, vigorous and full of sap, and just before flowering. They should be cut close to the ground, tied in bunches, labeled, and hung up to dry in a clean, cool, dry, dustless, airy room, such as an attic, and dried as quickly as possible; or the leaves may be stripped off and dried in trays. When dry enough to crumble, they may be left hanging but should be covered with paper, cheesecloth or some other like material to prevent dust collecting on them. When stored in this manner, they are apt to lose their strength rapidly. A more satisfactory method is to store the leaves whole or finely crumbled in wide-mouthed bottles or fruit jars which are well labeled and tightly corked or covered. Look at the jars daily for a few days, and, if any moisture is present, remove the herb and dry further. Herbs must be thoroughly dried to keep well. Such containers keep the material clean, enable it to retain its pungency longer, and make it handy to store and more readily available for use. Sweet Basil, hoarhound, marjoram, sage, thyme, balm, savory, tarragon, lavender, parsley, celery, dill, fennel, and mint are the herbs whose foliage is most commonly dried, although most of the others can be used in this manner as well.

Herbs grown for seed should be allowed to ripen before harvesting. Since many of them drop their seed almost as soon as they are ripe, care must be taken to harvest them just before seed dropping occurs. After cutting, the seeds, with other attached parts, should be placed preferably on a paper or cloth and allowed to dry. As soon as they are dry enough, thresh them out and remove the dirt and refuse. Then spread out the clean seeds in thin layers on a cloth or paper for another week or until they are thoroughly cured before storing in glass jars. The environmental conditions for harvesting, curing and storing should be the same as those necessary for preserving the foliage.

Among the herbs whose seeds are commonly used are angelica, anise, celery, sweet cicely, coriander, cumin, dill, fennel, lovage poppy (maw), and sesame (bene).

If herbs are required for garnishing or if one prefers fresh to dried material during the winter, certain of them may be taken up in the fall, potted, and used as house plants; or they may be grown from the beginning in pots for that purpose. In the house, many of them are decidedly ornamental as well as useful for culinary purposes. Among these are Bush Basil, chives, Pot marigold, sweet annual marjoram, mints, parsley, rose geranium, rosemary and lemon verbena. Such a collection may be arranged in a very pleasing window garden, and, together with the stored material, gives the housewife a fine collection of assorted flavors to pick from at any time.

Culinary Uses

IN THE USE of culinary herbs, a large part of the responsibility for their success or failure lies with the cook. Many of them are very pungent and only a very small quantity is necessary to give the desirable flavor. The only recommendation that can be given as to the quantity to use is to start with a very small amount. Allow that to thoroughly blend with the material being prepared and then add more if necessary to meet the individual taste. Some herbs are best when used alone; others may be blended to give a delightful effect. This opens up a field for experiment by the cook in which innumerable combinations can be tried out.

Sage, sometimes used to season stuffings for turkey and chicken, is more generally used in dressings for pork, goose, duck, and for seasoning sausage. Parsley or fennel alone, or thyme, marjoram and savory alone or in combination, are best suited for finer meats, such as veal, venison, most game, turkey, chicken and fish. Basil and balm are often employed in the same way. Horse radish sauce is very good with baked ham. Soup stocks are improved by adding sweet herbs, parsley, chives, and garlic. Cress, parsley and angelica are often recommended as garnishes for fish dishes. Mint sauce or jelly is almost indispensable with lamb or mutton. Mint or tarragon, sprinkled over them, add to the quality of many fruit salads. Such herbs as chervil, chives, mint, parsley, peppergrass, watercress, sorrel, and tarragon may be added to salads to give them a pungent flavor. Many breads, rolls, cakes, drinks, candies and pickles may be given a dif-



Fig. 12. *Verbascum phlomoides*.
MULLEIN

ferent appetizing quality by the addition of some of the various seeds, mentioned previously, to recipes already in use. Many beverages may be improved by the addition of a sprig or leaf of woodruff, borage, costmary, lemon verbena, balm, mint, rose geranium or anise. Left-over meat dishes are improved greatly by seasoning liberally with sweet herbs. Basil is especially good for seasoning tomatoes. This indicates a few of the culinary uses to which herbs may be put, but the housewife will discover many more as her interest becomes aroused by the delightful effects obtained.

A Dinner of Herbs

In an article published in the *American Agriculturist* and quoted by M. G. Kains, in his book on Culinary Herbs, Dora M. Morrell says: "There is an inference that a dinner of herbs is rather a poor thing, one not to be chosen as a pleasure. Perhaps it might be if it came daily, but, for once in a while, try this which I am going to tell you.

"To prepare a dinner of herbs in its best estate, you should have a bed of seasonings such as our grandmothers had in their gardens, rows of sage, of spicy mint, sweet marjoram, summer savory, fragrant thyme, tarragon, chives, and parsley. To these we may add, if we take herbs in the scriptural sense, nasturtiums, and that toothsome esculent, the onion, as well as lettuce. If you wish a dinner of herbs and have not the fresh, the dried will serve, but parsley and mint you can get at most times in the market, or in country gardens, where they often grow wild.

"The Belgians make a parsley soup that might begin your dinner, or rather

your luncheon. For the soup, thicken flour and butter together as for drawn butter sauce, and when properly cooked, thin to soup consistency with milk. Flavor with onion juice, salt and pepper. Just before serving, add enough parsley cut in tiny bits to color the soup green. Serve croutons with this.

"For the next course, choose an omelet with fine herbs. Any cook book will give the directions for making an omelet, and all that will be necessary, more than the book directs, is to have added to it minced thyme, tarragon, and chives before folding, or they may be stirred into the omelet before cooking.

"Instead of an omelet, you may have eggs stuffed with fine herbs and served in cream sauce. Cut hard boiled eggs in half the long way and remove the yolks. Mash and season these, adding the herbs as finely minced as possible. Shape again like yolks and return to the whites, cover with a hot cream sauce and serve before it cools. Both of these dishes may be garnished with shredded parsley over the top.

"With this serve a dish of potatoes scalloped with onions. Prepare by placing in alternate layers the two vegetables; season well with salt, pepper and butter, and then add milk even with the top layer. This dish is quite hearty and makes a good supper dish of itself.

"Of course you will not have a meal of this kind without salad. For this try a mixture of nasturtium leaves and blossoms, tarragon, chives, mint, thyme, and small leaves of lettuce, adding any other green leaves of the spicy kind which you find to taste good. Then dress these with a simple oil and vinegar dressing, omitting sugar, mustard, or any such flavoring, for there is spice enough in the leaves themselves.

"Pass with these, if you will, sandwiches made with lettuce or nasturtium dressed with mayonnaise. You may make quite a different thing of them by adding minced chives or tarragon, or thyme, to the mayonnaise. The French are very partial to this manner of compounding new sauces from the base of the old one. After you do it a few times you also will find it worthwhile.

"When it comes to a dessert I am afraid you will have to go outside the herbs. You can take a cream cheese and work into it with a silver knife any of these herbs, or any two of them that agree with it well, and serve it with toast and crackers, or you can toast your crackers with common cheese, grating above it sage or thyme."

While this dinner of herbs may not appeal to everyone, it is offered merely as a suggestion, and surely other combinations can be worked out which would appeal even to the most fastidious.

A Few Useful Recipes

Aux Fines Herbes. A favorite French omelet is made by adding a mixture of minced parsley, thyme and sweet marjoram to a plain omelet prepared the usual way. Other herb combinations may be used such as minced thyme, tarragon, chives, marjoram, and chervil; or minced thyme, Basil, summer savory, and chives; or any of these herbs may be added singly.

French Dressing. This dressing, prepared according to the cook's own recipe, may be varied in many ways to suit the individual taste by adding bits

of parsley, horse radish, tarragon leaves, and vinegars of distinct flavor such as tarragon. The French always rub the bowl in which the dressing is made with a clove of garlic.

Herb Infusions, or Vinegars. Mint, tarragon, dill, sweet basil, sweet marjoram, and burnet are frequently used as infusions. All that it is necessary to do is to pick the fresh green leaves of the herb to be used just before flowering, wash, dry slightly before the fire, fill a jar with them, cover with a good grade of vinegar, keep out of the air, allow to stand two to four weeks, strain and bottle. Use the liquid according to its strength for flavoring. Other herbs are sometimes treated the same way.

Bread Stuffing. Bread stuffing can often be improved or made distinctive by mixing in thoroughly one-fourth teaspoon of thyme, one-half teaspoon of powdered sage, one-half teaspoon of chopped onions or chives, and one-fourth teaspoon summer savory either singly or in combination. Other herbs previously mentioned as being used for this purpose may be tried in similar quantities and often give a very pleasing effect.

Mint Sauce. Dissolve one tablespoon of powdered sugar in one-half cup of vinegar. Pour this over one-fourth cup of mint leaves and set where it will keep warm but not hot. Allow to infuse one-half hour. If the vinegar is very strong dilute with water.

Fennel Sauce. Allow a bunch of fennel to boil two or three minutes in salt water. Remove. Squeeze out as much water as possible and chop the finer portions finely. Knead one tablespoon of baked flour into three ounces of butter and stir into one-half pint of boiling water. Boil for ten minutes and stir in the chopped fennel. This is particularly desirable with fish.

Herb Sandwich. Rounds of brown bread spread with chopped olives, minced lettuce and watercress, tarragon, paprika, parsley, and chives chopped finely and mixed with mayonnaise make delicious sandwiches.

Ravigote Sauce. Heat one cup of thin white sauce and add one-fourth cup of lemon juice, one tablespoon of tarragon vinegar and one tablespoon each of minced shallots, chervil, tarragon leaves, and chives. Keep hot for five minutes, drain, and beat in one tablespoon of butter. Serve hot or cold.

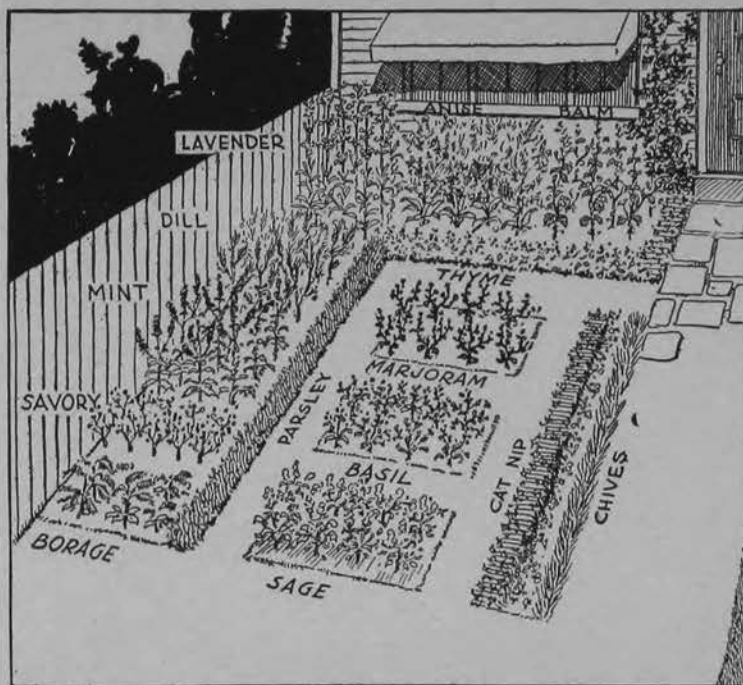


Fig. 13. HERB GARDEN PLAN

Cream Chicory or Endive. Wash the plant carefully and pick off the outer green leaves, leaving only the white part. Boil until tender, drain well, return to kettle, and nearly cover with a medium white sauce, which should be well seasoned.

Candied Mint Leaves or Borage Flowers. Pick large leaves of spearmint, peppermint, or the flowers of borage. Dip the dry, clean leaves or flowers in whipped white of eggs in which one-half teaspoon of water has been added. Coat immediately with granulated sugar and lay on waxed paper. Allow to dry thoroughly. These may be used immediately or will keep for considerable time.

While it is possible to give only a few herb recipes in a publication of this nature, these may indicate some of the methods in which herbs may be utilized for culinary purposes. Many other pleasing and delightful recipes can be obtained from the list of suggested reading given at the close of this article.

A PARTIAL BIBLIOGRAPHY

WHILE a considerable amount of information on herbs has been given in this publication, the whole story has not been told by any means. For the information of those herb lovers and those who may become interested in additional herb lore and who desire to pursue the knowledge of herbs to a greater extent, a list of some available literature follows:

Books

- The Book of Herbs. Lady Rosalind Northcote. J. Lane Co., New York and London, 1903.
Culinary Herbs. M. G. Kains. Orange Judd Publishing Co., New York, 1912 and 1920.
The Herb Garden. Mrs. F. A. Bardswell. Second ed., A. & C. Black, Ltd., London, 1930.
Gardening with Herbs for Flavor and Fragrance. Helen Morgenthau Fox.

(Continued on Page 16)

THE HERB TABLE

IN THIS TABLE the herbs previously mentioned are given together with a number of others not described. This table, because of the large amount of material contained in it, must of necessity be condensed and at first it may be somewhat difficult to use. By the use of the key, however, one can obtain, in a short time, considerable information in regard to any one of these herbs in which one is particularly interested.

For example, let us see what the table tells about Alkanet.

From the key, we find that Alkanet belongs to the Boraginaceæ family.

Some kinds are biennials, some are perennials, and some may act either like biennials or perennials, depending upon the conditions under which they are grown. It may be propagated by seeds or divisions. Seeds may be planted about $\frac{1}{8}$ inch deep in the garden and the plants should be spaced about 30 by 18 inches. The plants do best in a sunny exposure and in an average garden soil which is medium in fertility and moist but well drained. The color of the foliage is green and that of the flowers is blue to purple. The plants range in height generally from 12 to 24 inches. In regard to the heights given in the table, the reader must bear in

mind that height varies markedly under different growing conditions and with different varieties. The heights given here are what has been noted by the writers under a particular set of growing conditions. The parts of the plant used in the home are the roots and the leaves and the uses are for coloring, in salads, and as an ornamental. Some variety of it may be obtained from most seed companies and many nurseries.

From this one example it can be seen that those interested can determine a great deal about the plant they are interested in before purchasing it and, for this reason as well as others, the table should prove useful.

THE HERB TABLE

COMMON and SCIENTIFIC NAMES	Plant Family (A)	Life of Plant (B)	Propagation (C)	Seed Planting		Plant Spacing Inches		Soil Preferred				Color		Height in Inches (N)	Parts Used in the Home (O)	Uses (P)	Where Obtainable (Q)
				Place (D)	Depth in Inches (E)	Rows (F)	Plants in the Row (G)	Exposure (H)	Type (I)	Fertility (J)	Moisture (K)	Foliage (L)	Flower (M)				
Alkanet (<i>Anchusa officinalis</i>).....	B	B-P	12	1	1-8	30	18	S	G	M	M	G	BP	12-24	RL	CSO	1
Angelica (<i>Archangelica officinalis</i>)*.....	U	B-P	1	12	1-4	36	36	S	G	M	M	G	GW	36-60	PLS	SPFCaO	2
Anise (<i>Pimpinella anisum</i>)**.....	U	A	1	1	1-2	12	6	S	LG	F	D	G	W	18-24	LS	GSFPO	1
Balm (<i>Melissa officinalis</i>)**.....	L	P (A)	1	2	1-16	18	12	S	G	P	D	GG	YW	24	LSh	FPTB	1
Balm, Bee (<i>Monarda didyma</i>)*.....	L	P	12	12	1-8	18	8	SD	G	M	M	G	S	24-36	L	FPOB	1
Basil, Sweet (<i>Ocimum basilicum</i>)**.....	L	A	1	2	1-16	18	12	S	LG	M	D	GP	W	12-24	LSh	FO	1
Basil, Bush (<i>Ocimum minimum</i>)*.....	L	A	1	2	1-16	12	8	S	LG	M	D	GP	W	8-12	LSh	FOH	3
Bergamot (<i>Monarda fistulosa</i>)*.....	L	P	12	12	1-8	18	8	SD	G	M	M	GG	SLP	24-36	L	FPO	1
Borage (<i>Borago officinalis</i>)**.....	B	A	1	1	1-4	15	12	S	LG	P	D	DG	B	18-24	FLSh	CaTFSGO	1
Burnett (<i>Sanguisorba minor</i>)*.....	Ro	P	12	1	1-8	18	12	S	G	M	M	G	W	24-36	L	FO	4
Caraway (<i>Carum carvi</i>)**.....	U	B (A)	1	1	1-8	12	8	S	LG	M	D	G	W	24-30	SRL	FGa	1
Catnip (<i>Nepeta cataria</i>).....	L	P	1	1	1-8	24	18	S	LH	M	MD	PGD	B	24-36	L	TO	1
Celeriac (<i>Apium graveolens</i> var <i>rapaceum</i>)*.....	U	B (A)	1	2	1-16	18	8	S	LG-P	F	M	.....	.....	18-24	LPR	SFV	1
Celery (<i>Apium graveolens</i> var <i>dulce</i>)*.....	U	B (A)	1	2	1-16	24	6	S	LG-P	F	M	.....	.....	12-18	LPS	FS	1
Chamomile (<i>Anthemis nobilis</i>)*.....	C	P	12	12	1-8	12	6	S	LG	P	D	G	W	6	F	TO	7
Chamomile, Rock (<i>Anthemis cupiana</i>).....	C	P	12	12	1-8	12	6	S	LG	P	D	GG	W	6	F	TO	.....
Chervil, Salad (<i>Anthriscus cerefolium</i>)*.....	U	A	1	1	1-8	18	6	D	G	M	M	G	W	12-24	LR	RGB	1
Chicory (<i>Cichorium intybus</i>)*.....	C	P (A)	1	12	1-8	18	6	S	LG	F	M	G	B	18-36	LR	SF	1
Chives (<i>Allium schoenoprasum</i>)**.....	Li	P	2	1	.....	12	1	SD	LG	M	M	G	RP	12-18	L	FOH	1
Cicely, Sweet (<i>Myrrhis odorata</i>)*.....	U	P	1	12	1-8	18	12	S	G	M	M	GG	W	30-36	LS	FPOB	7
Clary (<i>Salvia sclarea</i>)*.....	L	B-P	1	1	1-8	18	12	S	G	M	M	GG	WPPi	24	L	SO	7
Coriander (<i>Coriandrum sativum</i>)*.....	U	A	1	1	1-2	15	6	S	LG	M	M	G	W	24-36	LS	FO	1
Costmary, Mint Geranium (<i>Chrysanthemum balsamita</i>)*.....	C	P	2	1	.....	18	18	S	G	M	M	LG	Y	24-48	L	PFS	1
Sweet Marie (<i>C. balsamita</i> var <i>tanacetoides</i>)*.....	C	P	2	1	.....	18	18	S	G	M	M	MG	Y	36-60	L	PFSO	.....
Cress, Peppergrass (<i>Lepidium sativum</i>)**.....	Cr	A	1	1	1-8	15	.....	D	G	F	M	G	W	6-8	L	SGa	1
Cress, Upland (<i>Barbarea vulgaris</i>)*.....	Cr	B (A)	1	1	1-8	15	.....	D	G	F	M	G	YW	6-8	L	SGa	1
Cress, Water (<i>Roripa nasturtium aquaticum</i>)*.....	Cr	P	12	1	1-8	4	4	D	H	F	MW	DG	W	3-6	L	S	1
Cumin (<i>Cuminum cyminum</i>)*.....	U	A	1	1	1-8	18	18	S	G	M	M	G	WR	6	S	FO	2
Dandelion (<i>Taraxacum officinale</i>)*.....	C	P-B	1	1	1-8	12	12	S	LG	M	M	G	Y	3-6	LF	GW	1
Dill (<i>Anethum graveolens</i>)**.....	U	A	1	1	1-4	18	9	S	S	M	M	G	Y	36	LShS	F	1
Dusty Miller (<i>Artemisia stelleriana</i>).....	C	P (A)	321	2	1-8	18	12	S	LG	M	MD	GD	Y	12-18	.....	O	1
Elecampane (<i>Intula helenium</i>).....	C	P	12	1	1-8	18	18	S	G	M	M	G	YO	48-70	.....	O	1
Fennel, Florence (<i>Foeniculum dulce</i>)**.....	U	P (A)	1	1	1-8	24	18	S	G	P (L)	M	G	Y	36-48	LShS	SVGaFO	1
Fennel Flower (<i>Nigella sativa</i>).....	Ra	A	1	1	1-8	18	12	S	G	M	M	GG	B	12-24	S	FO	1
Fennel, Sweet (<i>Foeniculum vulgare</i>)**.....	U	P (A)	1	1	1-8	24	12	S	G	P (L)	M	G	Y	36-60	LShS	SVGaF	1
Garlic (<i>Allium sativum</i>)*.....	Li	B (A)	2	1	.....	12	3	SD	LG	M	M	G	Pi	12-18	B	F	1
Heliotrope, Garden (<i>Valeriana officinalis</i>)*.....	V	P	126	12	1-8	24	18	S	G	M	M	G	LaCW	30-60	FL	OP	1
Hoarhound (<i>Marrubium vulgare</i>)*.....	L	P	13	1	1-8	18	12	S	LG	P	D	GG	W	12-36	LShR	TCa	1
Horseradish (<i>Armoracia rusticana</i>)**.....	Cr	P	7	1	.....	36	18	S	LG-S	F	M	G	W	18-24	R	CO	1
Hyssop (<i>Hyssopus officinalis</i>)*.....	L	P	123	1	1-8	18	6	D	LG	P	M	G	PB	18	L	FSO	1
Lavender (<i>Lavendula spica</i> or <i>vera</i>)*.....	L	P (A)	2314	12	1-8	24	18	S	S	P	M	LG	WB	8-36	F	PO	1
Lavender Cotton (<i>Santolina chamaecyparissus</i>).....	C	P	21	12	1-8	24	24	S	G	M	M	SG	Y	18-24	L	Ost	1
Lovage (<i>Levisticum officinale</i>)*.....	U	P	12	1	1-3	30	24	S	G	F	M	LG	Y	30-48	PLS	SPFCaO	7
Marigold, Pot (<i>Calendula officinalis</i>)*.....	C	A	1	12	1-8	18	12	S	S	P	M	PG	Y	15-20	F	CPOH	1
Marigold, Sweet Scented (<i>Tagetes lucida</i>).....	C	P (A)	1	12	1-8	12	6	S	G	M	M	G	O	12-18	LSh	FSO	1
Marjoram, Perennial (<i>Origanum vulgare</i>)**.....	L	P	1234	2	1-16	18	12	S	G	M	M	GY	PiW	24-30	FL	FPO	7

Marjoram, Sweet Annual (<i>Marjorana hortensis</i>)*	L	P (A)	1234	2	1-16	12	10	S	G	M	M	GY	PIW	18-24	FL	PPOH	1
Mint, Japanese (<i>Mentha arvensis</i>)	L	P	23	1		18	12	SD	GH	F	M	G	PW	18-24	L	FPH	.....
Mint, Lemon (<i>Mentha citrata</i>)*	L	P	23	1		18	12	SD	GH	F	M	G	P	18-24	L	FPOHGa	.....
Mint, Pennyroyal (<i>Mentha pulegium</i>)**	L	P	231	1	1-8	6	6	SD	GH	F	M	DG	BL	6	L	FPOHGa	1
Mint, Pepper (<i>Mentha piperita</i>)*	L	P	231	1	1-8	18	12	SD	GH	F	M	G	P	24-30	L	FPHGa	1
Mint, Spear (<i>Mentha spicata</i>)**	L	P	231	1	1-8	12	12	SD	GH	F	M	G	L	24	L	FPHGa	3
Mint, White Woolly (<i>Mentha sylvestris</i>)	L	P	23	1		12	12	SD	GH	F	M	W	P	18-24	L	FPOHGa	.....
Mugwort (<i>Artemisia lactiflora</i>)	C	P (A)	321	2	1-8	18	18	S	LG	M	MD	VY	W	36-48	.....	OCu	1
Mullein (<i>Verbascum</i> spp.)	S	B	1	1	1-8	24	18	S	LG	PM	D	GG	VL	24-72	.....	OT	1
Nasturtium, Dwarf (<i>Tropaeolum minor</i>)*	T	A	1	1	1-2	6	6	S	SG	M	M	G	YR	6-12	FLFrS	SFO	1
Nasturtium, Garden (<i>Tropaeolum majus</i>)*	T	A	1	1	1-2	18	6	S	SG	M	M	G	YR	36-72	FLFrS	SFO	1
Parsley (<i>Petroselinum hortense</i>)**	U	B (A)	1	12	1-8	18	6	SD	G	M	M	G	Y	18-24	L	FGaSOH	1
Parsley, Turnip-rooted (<i>P. hortense</i> var <i>radicosum</i>)*	U	B (A)	1	12	1-8	18	6	SD	G	M	M	G	Y	12-18	LR	FGaS	1
Poppy, Opium or Maw (<i>Papaver somniferum</i>)**	Pa	A	1	1	1-4	4	3	S	G	M	M	BG	PiRP	24-36	S	FO	3
Purslane, Moss Rose (<i>Portulaca grandiflora</i>)	P	A	1	12	1-8	8	8	S	S	M	D	G	V	6-10	.....	O	1
Purslane, Potherb (<i>Portulaca oleracea</i>)	P	A	1	12	1-8	18	12	S	S	M	D	G	Y	6	LSh	G	7
Ramplon (<i>Campanula Rapunculus</i>)*	Ca	B (A)	1	1	1-8	8	6	S	G	F	M	G	L	24-36	RL	SVG	7
Rhubarb (<i>Rheum rhabonticum</i>)**	Po	P	2	1		48	48	SD	S	F	M	G	W	24-48	P	Fr	1
Rose Geranium (<i>Pelargonium graveolens</i>)*	G	P (A)	3	2		P	P	S	G	F	M	G	RPi	18-24	L	FPOH	1
Rosemary (<i>Rosmarinus officinalis</i>)*	L	P (A)	1234	2	1-8	24	18	S	LG	M (L)	M	GW	B	48-72	L	FPOHB	1
Rue, Common (<i>Ruta graveolens</i>)*	R	P	1234	1	1-8	24	18	S	H	P	M	BG	Y	24-36	L	FSO	1
Saffron (<i>Crocus sativus</i>)*	I	P (A)	15	12	1-8	6	6	S	G	M	M	PG	LW	8-12	St	CFO	1
Sage (<i>Salvia officinalis</i>)**	L	P (A)	13	1	1-8	18	12	S	LG	P	M	G	PBW	24-36	L	FT	1
Salad, Corn (<i>Valerianella locusta</i> or <i>eriocarpa</i>)*	V	A	1	1	1-8	12	6	S	G	M	M	G	B	8-12	L	SG	1
Samphire (<i>Crithmum maritimum</i>)	U	P (A)	21	12	1-8	18	12	S	LG	F	M	PG	WY	12-24	LShFr	FS	.....
Savory, Summer (<i>Satureia hortensis</i>)*	L	A	1	1	1-4	18	6	S	G	M	D	G	PiW	18-24	LShF	FS	1
Savory, Winter (<i>Satureia montana</i>)**	L	P	1234	1	1-4	18	6	S	G	M	D	DG	WP	12-18	LShF	FSO	2
Sesame or Bene (<i>Sesamum orientale</i>)	Pe	P (A)	1	2	1-8	P	P	S	G	M	M	DG	RW	12-24	S	F	5
Skirret or Crummock (<i>Sium Sisarum</i>)	U	P (A)	18	12	1-2	18	8	S	LG	F	M	G	W	24-36	R	V	7
Sorrel, Garden (<i>Rumex acetosa</i>)*	Po	P	1	1	1-4	18	12	S	G	M	M	PG	G	24-36	L	GS	1
Sorrel, French (<i>Rumex scutatus</i>)*	Po	P	1	1	1-4	18	12	S	G	M	M	DG	G	8-12	L	GS	6
Spinach-Dock, Herb-Patience (<i>Rumex patience</i>)	Po	P	1	1	1-4	24	18	S	G	M	M	G	G	48-72	L	GS	8
Southernwood (<i>Artemisia abrotanum</i>)	C	P	321	1	1-8	18	12	S	LG	M	MD	GG	L	36-48	L	TO	1
Tansy, Common (<i>Tanacetum vulgare</i>)*	C	P	12	2	1-16	18	10	S	G	M	M	DG	WR	36-60	L	GaTFO	1
Tarragon (<i>Artemisia dracunculus</i>)**	C	P (A)	32	1		18	12	S	LG	M	MD	GG	WG	18-24	LSh	TGaFSO	1
Thyme, Common (<i>Thymus vulgaris</i>)**	L	P	2341	2	1-16	12	6	S	LG	M	MD	GG	La	8-10	L	FO	1
Thyme, Creeping (<i>Thymus serpyllum</i>)	L	P	2341	2	1-16	12	6	S	LG	M	MD	G	La	4-6	L	FO	1
Udo (<i>Aralia cordata</i>)	A	P	13	2	1-8	48	36	S	G	F	M	G	GW	60-84	ShL	VSO	9
Verbena, Lemon (<i>Lippia citriodora</i>)*	Ve	P (A)	3			P	P	D	G	M	M	PG	L	18-24	L	FPH	1
Wintergreen (<i>Gaultheria procumbens</i>)*	E	P	1234	1	1-8	12	12	D	SP	M	MW	G	W	6	LFr	FTO	1
Woodruff, Sweet (<i>Asperula odorata</i>) (Waldmeister)*	Ru	P	12	12	1-8	12	8	D	G	M	M	G	W	6-8	L	FPO	1
Wormwood (<i>Artemisia absinthium</i>)	C	P	321	1	1-8	18	12	S	LG	M	MD	GG	Y	36-48	L	TO	1

KEY TO HERB TABLE

**Herbs that should be in every garden. *Desirable for the more complete garden.

More than one letter, figure or symbol indicates a combination of descriptions, color, or uses.

KEY TO COLUMNS:

- (A) Families: A—Araliaceae; B—Boraginaceae; C—Campanulaceae; Cr—Cruciferae; E—Ericaceae; G—Geraniaceae; I—Iridaceae; L—Labiatae; Li—Liliaceae; P—Portulacaceae; Pa—Papaveraceae; Pe—Pedaliaceae; Po—Polygonaceae; R—Rutaceae; Ra—Ranunculaceae; Ro—Rosaceae; Ru—Rubiaceae; S—Scrophulariaceae; T—Tropaeolaceae; U—Umbelliferae; V—Valerianaceae; Ve—Verbenaceae.
- (B) Life Plant: A—Annual; B—Biennial; P—Perennial; (B-P)—Biennial or Perennial; B(A)—Biennial grown as annual; P(A)—Perennial grown as annual.
- (C) Propagation: 1—Seed; 2—Division; 3—Cuttings; 4—Layers; 5—Bulbs; 6—Suckers; 7—Root Cuttings; 8—Offsets. Each unit a method. Listed in best order.
- (D) Seeding Place: 1—Open Garden; 2—Special seedbed or indoors for transplanting later; 12—Either.
- (F & G) Plant Spacing in Garden: Set or thin to given distances. P—Greenhouse plants which may be set outdoors in summer.
- (H) Exposure: S—Sunny for best results; D—Partial shade for best results; SD—Sunny to partial shade.
- (I) Soil Type: G—Average garden; LG—Light garden; LH—Light to heavy; (LG-P)—Light garden or peat; H—Heavy; S—Sandy; SG—Sandy to garden; SP—Sandy or peat.

- (J) Soil Fertility: M—Medium rich, average garden; F—Fertile, rich; P—Poor, spare; P(L)—Poor, limey; PM—Poor to medium; M(L)—Medium, limey.
- (K) Soil Moisture: M—Moist but well drained; D—Dry; (MD)—Moist to dry; (MW)—Moist to wet.
- (L) Foliage Color: G—Green; GG—Gray green; P—Purple; PG—Pale green; D—Downy; MG—Milky green; GD—Gray downy; SG—Silvery gray; V—Various; BG—Blue green; GP—Grayish purple; DG—Downy green; PGD—Purplish green, downy; LG—Light green; GY—Green to yellow; VY—Various to yellow; GW—Green to white.
- (M) Flower Color: B—Blue; P—Purple; Y—Yellow; YW—Yellowish white; C—Crimson; L—Lilac; RP—Rose purple; Pi—Pink; M—Mauve; O—Orange; V—Various; R—Rose; PG—Purple gray; La—Lavender; W—White; G—Green.
- (O) Parts Used: R—Root; F—Flower; L—Leaves; S—Seed; P—Leaf stalks; Sh—Shoots; B—Bulbs; Fr—Fruits; St—Stamens.
- (P) Uses: C—Coloring; F—Flavoring; S—Salad; G—Greens; O—Ornamental; Ca—Candy; Ga—Garnish; P—Perfume; B—Bee plant; T—Tea; Cu—Bouquets; V—Eaten as a cooked vegetable; H—House or window garden; St—Strewing; Fr—Eaten as fruit.
- (Q) Where Obtainable: Note—If not in vegetable list in catalog, look in flower list. 1—General. Many seed companies list; 2—Germain Seed Co., Los Angeles, Calif.; 3—Di Giorgi Bros., Council Bluffs, Iowa; 4—St. Louis Seed Co., St. Louis, Mo.; 5—Griffith & Turner, Baltimore, Md.; 6—Monts Seed Store, Hope, Arkansas; 7—Thompson & Morgan, Ipswich, England; 8—Gebrüder Dippe Co., Quedlinburg, Germany; 9—Oriental Seed Co., San Francisco, Calif.

(Continued from Page 13)

The Macmillan Co., New York, 1933.
Culinary Herbs and Condiments. Mrs. M. Grieve. Harcourt, Brace and Co., New York, 1934.

Bulletins

Herbs—Their Culture and Use. Charlotte P. Brooks, and Abbie Graham. Vermont Agricultural Extension Circular 83. 1935.

The Herb Garden. G. P. Van Eseltine. New York (Geneva) Agricultural Extension Circular. No. 157. 1935.

Herbs in Cooking. Grace Tabor. Editor, Garden Department, Woman's Home Companion. (A Woman's Home Companion Booklet.)

Savory or Aromatic Herbs in the Kitchen Garden. W. R. Beattie, Sr. Horticulturist, Bureau of Plant Industry, United States Dept. of Agriculture.

American Medicinal Plants of Commercial Importance. Misc. Publication 77. United States Department of Agriculture, Office of Information, Washington, D. C.

Peppermint and Spearmint as Farm Crops. Farmers Bull. 1555. United States Department of Agriculture, Office of Information, Washington, D. C.

Recent Magazine Articles

Herb Lore of Long Ago. C. Frazer. *Nature*, 20:209-10. Nov., 1932.

The Herb Garden Comes Back. Dorothy E. Fletcher. *Nature*, 22:275-9. Dec., 1933.

Old Fashioned Herb Garden. E. Hans. *American Home*, 9:65. Jan., 1933.

Use of Herbs. C. de Forceville. *American Mercury*, 30:338-40. Nov., 1933.
Thirty Herbs to Flavor Our Food and

Drink. Helen Morgenthau Fox. *Home & Garden*, 65:44-45. Jan., 1934.

Kitchen Window Herb Garden. G. E. N. Hosmer. *Better Homes and Gardens*, 13:51. Oct., 1934.

Herbs of the Field. Grace Tabor. *Woman's Home Companion*, 61:128-9. Apr., 1934.

Blessed Adventurers, They Dared to Taste and Test Plants Good for Flavoring. *Better Homes and Gardens*, 12:20-1. Feb., 1934.

Scents from an Herb Garden. E. Evans. *House Beautiful*, 77:62-3. Apr., 1933.

Herb Garden on Cape Cod's Southern Coast: Mrs. G. Whitney Garden, Wood's Hole. L. B. Wilder. *House and Garden*, 67:28. Feb., 1935.

Herbs—How to Grow Them and How to Use Them. Helen Noyes Webster. *Mass. Horticultural Society*, Boston, 1935.

