AMERICAN MEDICINAL PLANTS OF COMMERCIAL IMPORTANCE

MISCELLANEOUS PUBLICATION No. 77
UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON

AMONG THE WILD PLANTS of the United States are many that have long been used in the practice of medicine, some only locally and to a minor extent, but others in sufficient quantity to make them commercially important. The collection of such plants for the crude-drug market provides a livelihood for many people in rural communities, especially in those regions where the native flora has not been disturbed by agricultural or industrial expansion and urban development.

There is an active interest in the collection of medicinal plants because it appeals to many people as an easy means of making money. However, it frequently requires hard work, and the returns, on the whole, are very moderate. Of the many plants reported to possess medicinal properties, relatively few are marketable, and some of these are required only in small quantities. Persons without previous experience in collecting medicinal plants should first ascertain which of the marketable plants are to be found in their own locality and then learn to recognize them. Before undertaking the collection of large quantities, samples of the bark, root, herb, or other available material should be submitted to reliable dealers in crude drugs to ascertain the market requirements at the time and the prevailing prices.

To persons without botanical training it is difficult to describe plants in sufficient detail to make identification possible unless such descriptions are accompanied by illustrations. It is the purpose of this publication to assist those interested in collecting medicinal plants to identify such plants and to furnish other useful information in connection with the work.

WASHINGTON, D. C. Issued July, 1930.

For sale by the Superintendent of Documents, Washington, D. C. - - - - - Price 30 cents

UNITED STATES DEPARTMENT OF AGRICULTURE

MISCELLANEOUS PUBLICATION NO. 77

Washington, D. C. July, 1930

AMERICAN MEDICINAL PLANTS OF COMMERCIAL IMPORTANCE[1]

By A. F. SIEVERS, *Senior Biochemist, Office of Drug and Related Plants, Bureau of Plant Industry*

CONTENTS

	Page		Page
Introduction	1	Description of, and information concerning, the plants	4
Collection and preparation of material	2	Index	68

INTRODUCTION

THE COLLECTION of medicinal plants for the crude-drug market has long afforded a gainful occupation for many people in the rural sections of this country. From the days of the early settlers numerous native plants have been credited with medicinal properties, which have led to their use as home remedies and in the manufacture of proprietary medicines, although some of the more important ones enter widely into official pharmaceutical products. Other plants of similar interest have been introduced from foreign countries and have become established and in some cases widely distributed. Among the plants that furnish products for the crude-drug trade are common weeds, popular wild flowers, and important forest trees. Many of these possess no pronounced medicinal properties, but so long as there is a market demand for them their collection continues to be of interest. For many of these plants there is little commercial demand, but a large number are consumed in substantial quantities, ranging from a few tons to 50 tons or more annually.

With the agricultural development of the country the natural supply of some of these medicinal plants has been reduced. The activity of collectors has further depleted the supply, especially of those plants that have a relatively high market value and therefore furnish

[1] This publication is largely compiled from and supersedes the following publications on medicinal plants by the late Alice Henkel, published from 1904 to 1913: Farmers' Bulletin No. 188, Weeds Used in Medicine; Bureau of Plant Industry Bulletins No. 107, American Root Drugs; No. 139, American Medicinal Barks; and No. 219, American Medicinal Leaves and Herbs; Department Bulletin No. 26, American Medicinal Flowers, Fruits, and Seeds. Some of the plants included in these various publications have been eliminated because they appear to be of minor importance at the present time, while 20 others have been added. For the most part the illustrations used are the same as those given in Miss Henkel's bulletins. Others, not included in those publications, have been made from herbarium specimens lent by the U. S. National Herbarium and from negatives furnished by various offices of the Bureau of Plant Industry. Frederick V. Coville, Sidney F. Blake, and O. M. Freeman, of the Office of Botany of this bureau, have cooperated in the preparation of this bulletin by a critical reading of the manuscript with special reference to the botanical and principal common names, the habitat and range of the plants, and their descriptions.

better returns for the time and labor expended. Nevertheless, many of these plants may still be found in forests, meadows, and waste places, and their collection may contribute to the family income.

There is much demand for information concerning the collection of medicinal plants, especially among persons who are not fully employed or who are operating small farms that do not require their entire attention. This publication has therefore been prepared as a guide to assist such persons in acquainting themselves with those plants for which there is a demand, and to furnish helpful suggestions regarding the collection and preparation of such plants for market.

The plants that are illustrated and described herein represent only a small percentage of those which from time to time have been used as home remedies or in local medical practice. Not all the plants that furnish products for the crude-drug market are included but only those which are the most important, as indicated by trade lists and catalogues of buyers of such products, and which therefore offer the best opportunity to the individual who wishes to engage in their collection.[2]

The descriptions given are brief, and technical terms have been avoided as far as possible, but the principal characters of the plants have been emphasized. These descriptions, together with the illustrations, should enable the reader to identify the plants when they are met in their natural situations. Medicinal uses are not discussed. To the collector who wishes to market the plants such information is of no special value. Neither are prices given, since these are constantly changing and are best obtained as needed directly from dealers in crude drugs.

COLLECTION AND PREPARATION OF MATERIAL

The first step in the collection of medicinal plants is to acquaint oneself with the market demands. Dealers in crude botanical drugs usually publish lists of the plants they handle and indicate the general range of prices. With such information at hand, and with the aid of this publication, the prospective collector should be able to determine which plants found in his locality offer the best opportunity for profit.

It frequently happens that after gathering considerable quantities of some plant the collector finds that the market is fully supplied at the time and either there is no sale for it or it can be sold only at a price that will not compensate him for his labor. Such a situation may usually be avoided by first submitting representative samples of the material to be collected, together with a statement of the approximate quantity that can be furnished, to a number of reliable dealers. This will generally bring information concerning the market possibilities and the returns that may be expected. Such procedure is especially recommended in the case of plants that are liable to deteriorate in a relatively short time, making it inadvisable to hold them until market conditions improve. Some of the dealers in crude drugs are willing to cooperate in this way with collectors, in order to prevent loss through overcollection and to encourage the collection of adequate supplies of the most-needed plants.

[2] The department in its use of common names of plants has adopted as authority the catalogue issued by the American Joint Committee on Horticultural Nomenclature under the title "Standardized Plant Names." As a result some of the plants are listed in this publication under common names different from those by which they are best known in the drug market. In such cases the preferred commercial name is listed first under "Other common names."

The medicinal value of botanical drugs depends to a large extent on the time of their collection. Roots from annual plants should generally be dug just before the flowering period; those of biennial and perennial plants should be gathered late in the fall or early in the spring, because during the growing season they are deficient in their active constituents and are of poorer quality generally. Barks also should preferably be collected during the dormant season when the sap is not flowing. Leaves and herbs are of most value when collected during the flowering period or just before they have finished growing. Flowers should always be gathered when they first open. Wherever definite information on these points has been available it has been included in the discussion of the various plants.

The proper preparation of the collected material is of the utmost importance. If the material contains dirt or other foreign matter, or if it is moldy or has an undesirable color or odor, it may be rejected by the dealers or purchased only at a reduced price. Roots should be thoroughly freed from adhering soil and other dirt. Fibrous roots, or rootstocks with numerous small roots or rootlets, require careful washing to remove such foreign matter. The larger stems of herbs and leaves should be discarded, as they possess little or no value, and leaves that are partly dried from age or that are discolored or injured by disease or insects should be excluded if the best price is to be obtained.

The material must be carefully dried. All plant material, in whatever form, is easily spoiled in both appearance and value if improper methods are used to remove the large quantity of moisture that is usually present. Fleshy roots dry very slowly and frequently become moldy unless they are sliced across or lengthwise to permit more rapid evaporation of the moisture. In the drug market such roots occur in various forms, and information on this point should be secured from the dealers or from experienced collectors so that the dried material may conform to market requirements. Leaves readily lose their green color while drying and sometimes become brown or even black. They should, therefore, be spread out in a well-ventilated room, especially in cloudy weather, and dried as rapidly as possible. Exposure to direct bright sunlight is undesirable because it frequently causes bleaching of the leaves. Fruits, particularly those that are juicy, are especially difficult to handle on account of their tendency to become sour or moldy. They should preferably be spread out in thin layers on wire or cloth screens that will permit a thorough circulation of air and on which they can be frequently stirred. Seeds must be thoroughly cured; even ripe seeds that appear to be dry will frequently heat and spoil if stored without having been spread out and allowed to dry for at least several days.

The best way to store the dried material is to pack it in clean bags or boxes. If, however, the material is likely to be injured by exposure to air or light, or if it is subject to the attack of insects, it should be placed in tightly closed cans or other receptacles and marketed at the earliest opportunity.[3]

[3] More detailed information on the drying of crude drugs, including also directions for constructing drying rooms and sheds, is contained in Farmers' Bulletin No. 1231, Drying Crude Drugs, which may be obtained free upon request from the Office of Information of the U. S. Department of Agriculture.

DESCRIPTION OF, AND INFORMATION CONCERNING, THE PLANTS

ALETRIS

Aletris farinosa L. (Fig. 1.)

Other common names.—Stargrass, blazing star, mealy starwort, starwort unicorn root, true unicorn root, unicornplant, unicorn's-horn, colicroot, devil's-bit, ague grass, ague root, aloeroot, crow corn, huskwort. Some of the common names are also used in connection with Helonias (*Chamaelirium luteum* (L.) A. Gray), which causes much confusion, although the two plants do not bear any close resemblance. It is best, therefore, to designate it as Aletris, under which name it is best known in the drug trade.

Habitat and range.—*Aletris occurs in dry, generally sandy soil, from Maine* to Minnesota, Florida, and Tennessee.

Description.—This plant is an erect slender herb 1½ to 3 feet tall with leaves only at the base. These are grasslike, of a yellowish green color, and from 2 to 6 inches long. They surround the base of the stem in the form of a star, in this respect differing distinctly from starwort (*Chamaelirium luteum*), with which it is sometimes confused, as stated. The erect, flowering spike produced from May to July bears white urn-shaped flowers sometimes tinged with yellow.

Other species.—Three other species of Aletris, namely, *Aletris aurea* Walt., *A. lutea* Small, and *A. obovata* Nash, bear much resemblance to *A. farinosa* and are for this reason no doubt frequently collected with the latter.

Part used.—The rootstock, which should be collected in autumn. In reasonably constant demand.

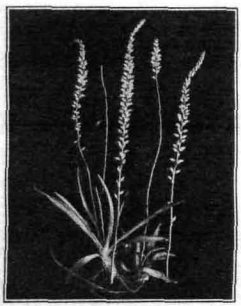

FIGURE 1.—Aletris (*Aletris farinosa*)

FIGURE 2.—American bittersweet (*Celastrus scandens*)

AMERICAN BITTERSWEET

Celastrus scandens L. (Fig. 2.)

Other common names.—False bittersweet, climbing bittersweet, shrubby bittersweet, fevertwig, fever-twitch, staff tree, climbing staff tree, staff vine, waxwork, Roxbury waxwork, yellowroot, climbing orange-root, Jacob's-ladder.

Habitat and range.—This woody vine or climbing shrub is found in woods and thickets, growing in rich damp soil from Ontario to Manitoba and south to North Carolina and New Mexico.

Description.—American bittersweet is a woody and shrubby climber, growing over trees or fences. It has smooth thin leaves 2 to 4 inches long and about half as wide. The small greenish-white or greenish-yellow flowers are produced in *June in short clusters. The fruit is a roundish, orange-yellow capsule which* opens in autumn, disclosing the scarlet-colored seed. The seed capsules remain on the plant well into the cold season.

Part used.—The bark of the plant and root, but especially that of the root. In limited demand only.

AMERICAN CRANBERRYBUSH

Viburnum trilobum Marsh. (Fig. 3.)

Synonym.—*Viburnum opulus americanum.*

Other common names.—Crampbark tree, cranberry tree, highbush cranberry, wild guelder-rose, gueldres-rose, cherry-wood, dog rowan tree, whitten tree, red elder, rose elder, marsh elder, water elder, white elder, gadrise, gaiter tree, gatten, love rose, May rose, pincushion tree, squaw bush, witch-hobble, witch-hopple.

Habitat and range.—This native shrub occurs in low rich woods and borders of fields from New Jersey, Michigan, and Oregon northward.

Description.—The American cranberrybush grows from 8 to 10 feet high with branches generally erect and smooth. The 3-lobed, broadly oval, coarsely toothed *leaves are usually smooth on the upper surface, but with the veins on the lower* surface somewhat hairy. The snowy white flower clusters, which appear in June, are about 3 to 4 inches across. The flowers on the outside of the cluster are sometimes an inch in diameter, but those on the inside are smaller. The red fruits, which ripen rather late in the season and remain on the bush for some time, are roundish, sour, and contain a round flat stone. They bear some resemblance to the cranberry; hence some of the common names applied to the plant.

Part used.—The bark, collected in the fall. In reasonably constant demand.

FIGURE 3.—American cranberrybush (*Viburnum trilobum*)

FIGURE 4.—American elder (*Sambucus canadensis*)

AMERICAN ELDER

Sambucus canadensis L. (Fig. 4.)

Other common names.—Sweet elder, sambucus, elder flowers, elder blows.

Habitat and range.—The elder bush is found in rich soil and low, somewhat damp ground from Canada southward to Florida and Arizona.

Description.—Elder is a shrub attaining a height of 6 to 10 feet, its light gray, numerous stems being generally smooth and the younger ones containing a large white pith. The leaves are large and consist of 5 to 11 leaflets about 2 to 5 inches in length borne on short stalks. About June or July the flat-topped, fragrant clusters appear, composed of numerous, 5-lobed, wheel-shaped, creamy-white flowers. The clusters of edible fruits which follow are black or a very dark purple, small, round, shining, and juicy.

Part used.—The flowers, gathered when fully opened and then quickly dried. The berries are also used to some extent. These must be very carefully dried, so that they will not become moldy. In limited demand only.

AMERICAN FALSE-HELLEBORE

Veratrum viride Ait. (Fig. 5.)

Other common names.—True veratrum, green veratrum, American veratrum, green hellebore, swamp hellebore, big hellebore, false hellebore, bear corn, bugbane, bugwort, devil's-bite, earth gall, Indian poke, itchweed, tickleweed, duckretter.

Habitat and range.—American false-hellebore is native in rich wet woods, swamps, and wet meadows, its range extending from Canada, Alaska, and Minnesota south to Georgia and Tennessee.

Description.—The large bright-green leaves of this plant make their way through the ground early in spring, followed later in the season by a stout, erect leafy stem, sometimes growing as tall as 6 feet. It is round and solid, pale green, closely surrounded by the sheathing bases of the leaves and unbranched except in the flowering head. The large leaves, the lower ones of which are from 6 to 12 inches in length and 3 to 6 inches in width, are hairy and pleated like a fan. The numerous greenish-yellow flowers are produced from May to July in rather open clusters. The plant is very poisonous.

Part used.—The rootstock, dug in autumn when the leaves have died down. In reasonably constant demand.

FIGURE 5.—American false-hellebore (*Veratrum viride*)

FIGURE 6.—American linden (*Tilia americana*)

AMERICAN LINDEN

Tilia americana L. (Fig. 6.)

Synonyms.—*Tilia glabra* Vent.; *T. canadensis* Michx.

Other common names.—Basswood, whitewood, bast tree, black lime tree, American lin tree, American lime tree, beetree, daddynut tree, monkeynut tree, *whistlewood, white lind, red basswood, yellow basswood, wickup.*

Habitat and range.—This native forest tree is found in rich woods, especially along the mountains, from Canada to Georgia and west to Texas and Nebraska.

Description.—The American linden is a large tree attaining a height of from 60 to 125 feet with a trunk diameter of 2 to 5 feet, with spreading branches. The somewhat leathery leaves are pointed at the apex, heart-shaped at the base, with sharply toothed margins and are borne on stems about 1 or 2 inches long. The flowers are produced in great abundance from May to June in drooping clusters composed of from 6 to 20 yellowish, very fragrant flowers. At the base of each cluster and grown to its stalk is a leaflike bract 2 to 4 inches in length. The roundish, grayish-green fruit is dry and woody and contains one or two seeds.

Part used.—The flowers, carefully dried in the shade. In limited demand only.

AMERICAN MOUNTAIN-ASH

Sorbus americana Marsh. (Fig. 7.)

Synonym.—*Pyrus americana* DC.

Other common names.—Roundwood, round-tree, American rowan tree, *American serviceetree, mountain* sumac, dogberry, quickbeam, wild ash, winetree, witchwood, life-of-man, Indian mozemize, missey-moosey, moose-misse.

Habitat and range.—The American mountain-ash occurs in swamps, low woods, or moist ground from Newfoundland south along the mountains to North Carolina and to Michigan. It is most abundant in the northern po on of its range.

Description.—This smooth-barked tree reaches a height of 30 feet with a trunk 18 inches in diameter. The leaves resemble those of the sumac, consisting of from 11 to 17 lance-shaped, pointed leaflets about 1¼ to 4 inches long. When young *they are slightly hairy, both sides soon becoming smooth.* The white flowers are borne from May to June in dense clusters measuring from 3 to 6 inches across. The flowers are followed later in the season by large, dense, showy clusters of bright-red berries about the size of peas, which give the tree a brilliant appearance.

Part used.—The bark with the outer layer removed. In limited demand only.

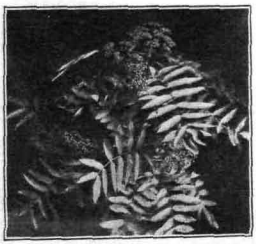

FIGURE 7.—American mountain-ash (*Sorbus americana*)

FIGURE 8.—American pennyroyal (*Hedeoma pulegioides*)

AMERICAN PENNYROYAL

Hedeoma pulegioides (L.) Pers. (Fig. 8.)

Other common names.—Pennyroyal, mock pennyroyal, squaw mint, tickweed, stinking balm, mosquito plant.

Habitat and range.—American pennyroyal is found in dry soil from Nova Scotia and Quebec to the Dakotas and southward.

Description.—*This strongly aromatic herb is of rather insignificant appearance,* being a low-growing plant from 6 inches to a foot in height with a slender, erect, *much-branched, somewhat hairy* and square stem. The leaves are small, thin, and rather narrow. From July to September close flower clusters appear consisting of a few pale-bluish flowers. The entire herb has a strong mintlike odor and pungent taste.

Part used.—The leaves and flowering tops are collected when the plant is in flower. The distillation of oil of pennyroyal is a limited industry carried on in scattered sections in the eastern part of the country.[4] In reasonably constant demand.

[4] *Information on the extraction of volatile oils from plants is contained in the following publication:* SIEVERS, A. F. METHODS OF EXTRACTING VOLATILE OILS FROM PLANT MATERIAL AND THE PRODUCTION OF SUCH OILS IN THE UNITED STATES. U. S. Dept. Agr. Tech. Bul. 16, 36 p., illus. 1928.

ARBORVITAE

Thuja occidentalis L. (Fig. 9.)

Other common names.—White cedar, yellow cedar, featherleaf cedar.

Habitat and range.—Arborvitae is found in wet ground and along streams from Canada south to North Carolina and Tennessee and west to Minnesota and Manitoba.

Description.—This evergreen tree, which reaches a height of 70 feet and a trunk diameter of 5 feet, needs no special description, as few people within its range are unfamiliar with its flat scalelike leaves and small cones from one-third to one-half inch long. The old bark is shed each year in long, ragged strips.

Part used.—The leaves and branchlets. In limited demand only.

FIGURE 9.—Arborvitae (*Thuja occidentalis*)

FIGURE 10.—Balm (*Melissa officinalis*)

BALM

Melissa officinalis L. (Fig. 10.)

Other common names.—Lemon balm, garden balm, pimentary, goose tongue, honey plant, sweet-mary, lemon lobelia.

Habitat and range.—Balm is found sparingly in waste places, thickets, and woods from Maine to Georgia, Missouri, and Arkansas, also in Oregon and California.

Description.—This plant is 1 to 2½ feet high, is covered with fine hair, and has a rather stout, erect, or much-branched stem. The round-toothed, egg-shaped, or heart-shaped leaves are from 1 to 2½ inches long and arranged opposite one another on the stem. From June to August the white or cream-colored tube-shaped flowers up to two-thirds of an inch long appear, several to a cluster, in the axils of the leaves. The plant is lemon scented.

Part used.—The herb. In limited demand only.

BALM-OF-GILEAD POPLAR

Populus candicans Ait. (Fig. 11.)

Other common names.—Balsam poplar, balm buds.

Habitat and range.—The balm-of-Gilead tree, which has mostly escaped from cultivation, is found along roadsides or streams from Newfoundland to Minnesota and Georgia.

Description.—This is a large tree reaching a height of 100 feet with a maximum trunk diameter of about 6½ feet with spreading branches, the young twigs slightly hairy, and with very resinous, fragrant buds. The broad, pointed leaves, 2½ to 6 inches long, are somewhat heart-shaped at the base, fine toothed, dark green above, pale beneath, and hairy when young. The male and female flowers are borne in separate catkins 6 inches or less in length, which appear before the leaves.

Part used.—The leaf buds. In reasonably constant demand.

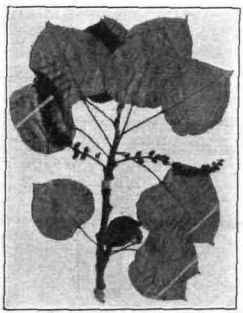

FIGURE 11.—Balm-of-Gilead poplar (*Populus candicans*)

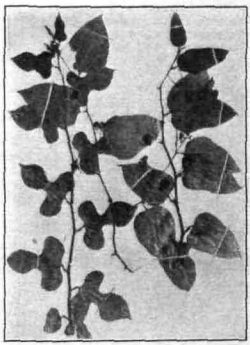

FIGURE 12.—Bamboo greenbrier (*Smilax pseudo-china*)

BAMBOO GREENBRIER

Smilax pseudo-china L. (Fig. 12.)

Other common names.—Bamboo brier, long-stalked greenbrier, American chinaroot, false chinaroot, bullbrier.

Habitat and range.—This plant occurs in dry, sandy thickets from New Jersey to Florida and west to Texas and Nebraska.

Description.—Bamboo greenbrier is a smooth vine with a tuberous rootstock and with the lower part of the stem smooth or sometimes beset with straight, needle-shaped prickles. The leaves, 2½ to 5½ inches long and 1½ to 3½ inches wide, are egg-shaped or sometimes narrowed at the middle, usually rough on the margin, and somewhat leathery when old. The greenish flowers, 12 to 40 in number, are borne in round clusters on flattened stalks 1 to 3 inches long. These are followed in autumn by one to three seeded black berries up to one-quarter inch in diameter.

Part used.—The root. In limited demand only.

BAYBERRY

(1) *Myrica cerifera* L.; (2) *M. carolinensis* Mill. (Fig. 13.)

Other common names.—(1) Southern waxmyrtle, waxberry, tallow berry, candleberry, tallow shrub, candleberry myrtle; (2) northern bayberry, small waxberry.

Habitat and range.—*The bayberry is native in sandy swamps or wet woods* from New Brunswick south to Florida. *Myrica cerifera* is found as far west as Texas and Arkansas, while *M. carolinensis* is common in bogs in northern New Jersey and Pennsylvania.

Description.—The southern waxmyrtle is a shrub or slender tree up to 40 feet high. The leaves are from 1 to 4 inches long, narrow, wedge-shaped, entire or with a few teeth, and have a fragrant odor when crushed. The flowers appear from March to May, according to locality, generally before the leaves are fully expanded. Male and female flowers are borne on separate trees, the male flowers in cylindrical yellow clusters and the female flowers in green, somewhat shorter clusters. The fruit, which remains on the tree for several years, consists of clusters of round, 1-seeded, somewhat berrylike nuts covered with a whitish wax. Northern bayberry is a shrub 8 feet high or less, with broader and blunter leaves.

Part used.—The bark of the root, collected in late autumn. After thorough cleansing and while still fresh the bark is loosened and removed by heating the root. The wax obtained from the berries, used for making bayberry candles, is also an article of commerce. In reasonably constant demand.

FIGURE 13.—Northern bayberry (*Myrica carolinensis*)

FIGURE 14.—Bearberry (*Arctostaphylos uva-ursi*)

BEARBERRY

Arctostaphylos uva-ursi (L.) Spreng. (Fig. 14.)

Other common names.—Uva-ursi, red bearberry, bear's-grape, bear's bilberry, bear's whortleberry, foxberry, upland cranberry, mountain cranberry, crowberry, mealberry, rockberry, mountain box, kinnikinnic, killikinnic, universe vine, brawlins, burren myrtle, creashak, sagachomi, rapper dandies (fruit).

Habitat and range.—Bearberry, also commonly known in the trade as uva-ursi, is a native of this country, growing in dry sandy or rocky soil from the Middle Atlantic States north to Labrador and westward to California and Alaska.

Description.—The bearberry is a low, much-branched shrub trailing over the ground and having numerous leathery evergreen leaves about 1 inch in length. The waxy flowers, which appear in May, are few and are borne in short, drooping clusters at the ends of the branches. They are white with a pinkish tinge, 5-lobed, and somewhat bell-shaped in form. Smooth, red, globular fruits containing five nutlets follow the flowers.

Part used.—The leaves, collected in autumn. In limited demand only.

BITTER NIGHTSHADE

Solanum dulcamara L. (Fig. 15.)

Other common names.—Bittersweet, dulcamara, nightshade, climbing nightshade, woody nightshade, amara dulcis, fevertwig, violet-bloom, blue bindweed, felonwort, poisonberry, poisonflower, pushion-berry, morel, snakeberry, wolfgrape, scarlet berry, tether-devil, dwale, skawcoo.

Habitat and range.—This plant occurs in low damp grounds and moist banks of rivers from New Brunswick to Minnesota and south to New Jersey and Kansas.

Description.—Bitter nightshade has a climbing, somewhat woody, branched stem about 2 to 8 feet long. The leaves are from 2 to 4 inches long, some entire and others having one to three lobes at the base. The purplish flowers, which resemble those of the potato, are produced from about May to September in compound clusters. The berries, which ripen in autumn, are oval, red, juicy, and contain numerous seeds. The plant has a handsome appearance in autumn with its colored berries, and is often planted as an ornamental.

Part used.—The young branches from plants only 1 or 2 years old, collected after the leaves have fallen. In limited demand only.

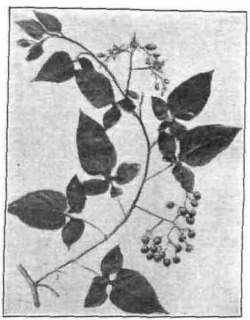

FIGURE 15.—Bitter nightshade (*Solanum dulcamara*)

FIGURE 16.—Black cherry (*Prunus serotina*)

BLACK CHERRY

Prunus serotina Ehrh. (Fig. 16.)

Synonym.—*Prunus virginiana* Mill., not of Linnaeus.

Other common names.—Wild cherry, wild black cherry, cabinet-cherry, black choke, rum cherry, whisky-cherry, Virginian prune-bark.

Habitat and range.—The black cherry occurs in woods or open places and is most abundant in the Southeastern States, but its range extends from Nova Scotia to Florida, westward to Texas, and north through Oklahoma, the eastern portions of Kansas, Nebraska, and South Dakota.

Description.—This tree sometimes reaches a height of 90 feet and a maximum trunk diameter of 4 feet. The trunk is straight and covered with rough black bark, but the young branches are smooth and reddish. The smooth shining leaves are about 2 to 5 inches long. The long drooping clusters of small white flowers are borne at the ends of the branches, usually during May. The cherries, which ripen about August or September, are round, black, or very dark purple, about the size of a pea, and have a sweet, slightly astringent taste.

Part used.—The bark, collected in autumn. The outer layer is removed, and the bark is then carefully dried and preserved. Young thin bark is preferred, and that from very young or very old branches should not be used. Black cherry bark should not be kept longer than one year, because it deteriorates with age. In reasonably constant demand.

BLACKHAW

Viburnum prunifolium L. (Fig. 17.)

Other common names.—Sloe, sloe-leaved viburnum, stagbush, shonny.

Habitat and range.—The blackhaw occurs in dry woods and thickets and on rocky hillsides from Connecticut to Florida and west to Michigan and Texas, but is found in greatest abundance in the South.

Description.—This shrub or small tree, from 10 to about 20 feet in height, has *rather stout, spreading branches. The smooth bright-green, finely toothed,* broadly or roundish oval leaves are 1 to 3 inches long. The numerous stemless flower clusters are from 2 to 4 inches broad, composed of numerous white flowers appearing from April to June. The fruit, which is sweet and edible, is about half an inch long, bluish black, covered with a bloom, and ripens in early autumn. It contains a somewhat flattened stone.

Another species.—The sweet viburnum (*Viburnum lentago* L.,), known also as nannyberry and sheepberry, is collected with *V. prunifolium.* It grows in *rich soil from Canada south to Georgia and Kansas. Its fruit matures in October,* becoming sweet and edible, and sometimes remaining on the shrub until the following spring.

Part used.—*The bark of both species,* collected in autumn. In reasonably constant demand.

FIGURE 17.—Blackhaw (*Viburnum prunifolium*)

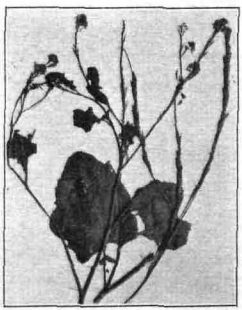

FIGURE 18.—Black mustard (*Brassica nigra*)

BLACK MUSTARD

Brassica nigra (L.) Koch. (Fig. 18.)

Synonym.—*Sinapis nigra* L.

Other common names.—Red mustard, brown mustard, cadlock, kerlock, senvre, scurvy.

Habitat and range.—Black mustard was introduced from Europe and is a *common weed in cultivated ground and waste places almost throughout the* United States, being especially troublesome in grainfields and pastures. It is cultivated in California.

Description.—Black mustard grows from 2 to 6 feet high. The leaves and *lower portion of the stems* are covered with bristly hairs. The small, bright-yellow flowers are produced from June to September in racemes at the ends of the stems, followed by erect pods crowded against them in dense clusters. These pods when ripe contain numerous small and roundish, blackish or reddish brown seeds.

Part used.—The seed, which is collected in the same way as white-mustard seed In limited demand only.

BLACK WILLOW

Salix nigra Marsh. (Fig. 19.)

Other common names.—Swamp willow.

Habitat and range.—This tree is found in low ground and along streams from New Brunswick to western Ontario and in North Dakota, Florida, and Texas.

Description.—This willow is a tree attaining a height of 120 feet and a trunk diameter of 3 feet, with narrow lance-shaped leaves 2½ to 5 inches long and up to three-quarters of an inch wide, finely toothed and hairy when young. Male and female flowers are borne in separate catkins which expand with the leaves, the male catkins 1 to 2 inches and the female catkins 1½ to 3 inches long.

Part used.—The bark and buds. In limited demand only.

FIGURE 19.—Black willow (*Salix nigra*)

FIGURE 20.—Blessed thistle (*Cnicus benedictus*)

BLESSED THISTLE

Cnicus benedictus L. (Fig. 20.)

Synonyms.—*Carduus benedictus* Steud.; *Carbenia benedicta* Adans.

Other common names.—Holy thistle, St.-Benedict's-thistle, Our Lady's thistle, bitter thistle, spotted thistle, cursed thistle, blessed cardus, spotted cardus.

Habitat and range.—The blessed thistle is a weed which is found sparingly in waste places and stony, uncultivated localities from Nova Scotia to Maryland and the Southern States, also on the Pacific coast.

Description.—This plant, which scarcely exceeds 2 feet in height, has a coarse, erect, branched, and rather woolly stem. The leaves are 3 to 6 inches long, more or less hairy, with margins lobed and spiny. The yellow flower heads which appear from about May to August are borne at the ends of the branches, almost hidden by the upper leaves, and are about 1½ inches long. Surrounding the flower heads are leathery scales, tipped with long, branching, yellowish-red spines. The herb has a rather disagreeable odor which is lost in drying.

Part used.—The leaves and leafy flowering tops, gathered preferably just before or during the flowering period. In limited demand only.

BLOODROOT

Sanguinaria canadensis L. (Fig. 21.)

Other common names.—Redroot, red puccoon, red Indian paint, puccoon-root, coonroot, white puccoon, pauson, snakebite, sweet-slumber, tetterwort.

Habitat and range.—Bloodroot is found in rich, open woods from Canada south to Florida and west to Arkansas and Nebraska.

Description.—*This is* one of our earliest spring flowers, the waxy white blossom, enfolded by the grayish-green leaf, usually making its appearance early in April. A single leaf and flower stalk are produced from each bud on the rootstock. Stems and leaves are smooth and covered with a bloom which gives them a whitish appearance. The leaves, which are borne on stems 6 to 14 inches long, are five to nine lobed and after the plant has ceased flowering expand to from 4 to 7 inches in length and 6 to 12 inches in width. The white, rather waxlike flower is about *1 inch across and develops into an oblong, narrow seed pod.* Both the rootstock and the stem contain a blood-red juice.

Part used.—The rootstock, collected in autumn. After drying, it should be carefully stored because moisture affects its quality. In reasonably constant demand.

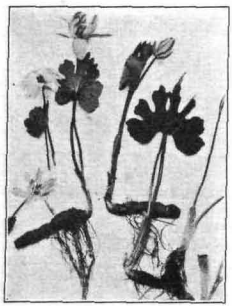

FIGURE 21.—Bloodroot (*Sanguinaria canadensis*)

FIGURE 22.—Blue cohosh (*Caulophyllum thalictroides*)

BLUE COHOSH

Caulophyllum thalictroides (L.) Michx. (Fig. 22.)

Other common names.—Caulophyllum, papoose root, squawroot, blueberry root, blue ginseng, yellow ginseng.

Habitat and range.—Blue cohosh is found in the deep rich loam of shady woods from New Brunswick to South Carolina and westward to Nebraska, being abundant especially throughout the Allegheny Mountain region.

Description.—Blue cohosh is from 1 to 3 feet in height and bears at the top *one large, almost stemless* leaf which is divided into three divisions, each of which is again divided into three divisions consisting of three leaflets each. The latter have from three to five lobes. During its early growth the plant is covered with a bluish-green bloom which gradually disappears. The small greenish-yellow flowers are borne in small heads during April and May. The small round seeds, which ripen in August, are borne on stout stalks and resemble dark-blue berries. The thick, crooked rootstock is covered with a mass of matted roots.

Part used.—The rootstock with roots, collected in autumn. In reasonably constant demand.

BLUEFLAG IRIS

Iris versicolor L. (Fig. 23.)

Other common names.—Iris, flag lily, liver lily, snake lily, poison flag, water flag, American fleur-de-lis or flower-de-luce.

Habitat and range.—Blueflag iris delights in wet, swampy localities, making its home in marshes, thickets, and wet meadows from Newfoundland to Manitoba and south to Florida and Arkansas.

Description.—This well-known plant is from 2 to 3 feet in height with an erect stem, sometimes branched near the top, and sword-shaped leaves, shorter than the stem, from one-half to 1 inch in width and showing a slight grayish bloom. The flowers, which appear from May to July, are large and handsome, each stem bearing from two to six or more. They have a peculiar form, consisting of six segments, the three outer ones turned back and the three inner ones erect and much smaller. They are purplish blue, the narrow base of the segments variegated with yellow, green, or white and marked with purple veins. Blueflag has a thick, fleshy, horizontal, branched rootstock producing many long, fibrous roots. It is poisonous and has caused poisonous effects in persons who mistook the plant for sweetflag which it resembles greatly when not in flower.

Part used.—The rootstock, collected in autumn. In reasonably constant demand.

FIGURE 23.—Blueflag iris (*Iris versicolor*)

FIGURE 24.—Blue vervain (*Verbena hastata*)

BLUE VERVAIN

Verbena hastata L. (Fig. 24.)

Other common names.—Verbain, false verbain, wild hyssop, simpler's-joy, ironweed.

Habitat and range.—Vervain is found in moist fields, meadows, and waste places from Nova Scotia to British Columbia and Florida, Nebraska, and Arizona.

Description.—This rather rough, finely haired herb has an erect, straight, 4-sided stem, 4 to 7 feet high, usually branched above with broadly lance-shaped, sharply toothed leaves. The small, usually blue, flowers are densely clustered in numerous slender panicled spikes 2 to 6 inches long.

Part used.—The herb. In limited demand only.

105166°—30——2

BOGBEAN

Menyanthes trifoliata L. (Fig. 25.)

Other common names.—Buck bean, bog myrtle, bog hop, bog nut, brook bean, bean trefoil, marsh trefoil, water trefoil, bitter trefoil, water shamrock, marsh clover, moonflower, bitterworm.

Habitat and range.—The bogbean is a northern marsh herb occurring in North America as far south as Pennsylvania, Minnesota, and California.

Description.—This herb arises from a long, black, creeping, scaly rootstock, the leaves being produced from the end of the same on erect stems measuring about 2 to 10 inches in height. The leaves consist of three somewhat fleshy, smooth leaflets 1½ to 3 inches long. The flower cluster is produced from May to July on a long, thick, naked stalk arising from the rootstock. It bears from 10 to 20 flowers each, with a funnel-shaped tube terminating in five segments which are pinkish purple or whitish on the outside and whitish and bearded on the inside.

Part used.—*The leaves, collected in the spring. In limited demand only.*

FIGURE 25.—Bogbean (*Menyanthes trifoliata*)

FIGURE 26.—Boneset (*Eupatorium perfoliatum*)

BONESET

Eupatorium perfoliatum L. (Fig. 26.)

Synonym.—*Eupatorium connatum* Michx.

Other common names.—Thoroughwort, thorough-stem, thoroughwax, wood boneset, teasel, agueweed, feverwort, sweating plant, crosswort, vegetable antimony, Indian sage, wild sage, tearal, wild isaac.

Habitat and range.—Boneset is a common weed in low, wet ground, along streams, on the edges of swamps, and in thickets from Canada to Florida and west to Texas and Nebraska.

Description.—This plant is easily recognized by the peculiar arrangement of the leaves, which are opposite each other and joined at the base, making it appear as though they were one with the stem passing through the center. It is erect, growing rather tall, from 1 to 5 feet in height, with rough, hairy, stout stems. The crowded, flat-topped clusters of flowers are produced from about July to September and consist of small heads of tubular white flowers.

Part used.—The leaves and flowering tops, collected when the plants are in flower, and stripped from the stalk. In reasonably constant demand.

BUGLEWEED

Lycopus virginicus L. (Fig. 27.)

Other common names.—Buglewort, sweet bugleweed, American water hoarhound, carpenter's herb, green archangel, gypsyweed, Paul's betony, woodbetony, wolf foot, purple archangel, water bugle, gypsywort, gypsy herb, Virginia hoarhound.

Habitat and range.—Bugleweed is a native herb frequenting wet, shady places from Canada to Florida, Missouri, and Nebraska.

Description.—This herb has long, threadlike runners and a bluntly 4-angled, smooth, slender, erect stem from 6 inches to 2 feet in height. The leaves are about 2 inches in length, pointed, rather narrow, and dark green or of a purplish tinge. The whitish flowers, which appear from about July to September, are small, tubular, and bell-shaped, and are produced in dense clusters in the axils of the leaves. They are followed by four nutlets. The plant has a rather pleasant, mintlike odor, but a disagreeable bitter taste.

Part used.—The entire herb, gathered during the flowering period. In limited demand only.

FIGURE 27.—Bugleweed (*Lycopus virginicus*)

FIGURE 28.—Burdock (*Arctium minus*)

BURDOCK

Arctium minus (Hill) Bernh. (Fig. 28.)

Synonym.—*Lappa major* Gaertn.

Other common names.—Cockle button, cuckold dock, beggar's-buttons, hurrburr, stick-button, hardock, bardane.

Habitat and range.—Burdock, one of our most common weeds, was introduced from the Old World. It grows along roadsides and in fields, pastures, and waste places, being very abundant in the Eastern and Central States and in some scattered localities in the West.

Description.—Burdock is a coarse, unsightly weed. During the first year it produces only a rosette of large leaves from a long tapering root. In the second year the plant grows to a large size, measuring from 3 to 7 feet in height. The stem is round, fleshy, and much branched and bears very large leaves, the lower ones frequently measuring 18 inches in length. The flowers are not produced until the second year, appearing from July until frost. They are purple and are borne in small clustered heads armed with hooked spines, and the spiny burs thus formed are a great pest, attaching themselves to clothing and to the wool and hair of animals. The plant has a large fleshy taproot. When dry this root is much wrinkled lengthwise.

Part used.—The roots, collected from plants of the first year's growth. As they are large and fleshy they are likely to become moldy, and it is best to slice them lengthwise, so that drying may proceed more rapidly. The roots of other species of Arctium are also used. In reasonably constant demand.

BUTTERFLYWEED

Asclepias tuberosa L. (Fig. 29.)

Other common names.—Pleurisy-root, Canada-root, Indian posy, orange-root, orange swallowwort, tuberroot, whiteroot, windroot, yellow or orange milkweed.

Habitat and range.—Butterflyweed flourishes in the open or in pine woods, in *dry sandy or gravelly soil, usually along the banks of streams.* Its range extends from Ontario and Maine to Minnesota and south to Florida, Texas, and Arizona, but it is found in greatest abundance in the South.

Description.—*This is an erect showy plant from 1 to 2 feet high. The stems* are stout and hairy, sometimes branched near the top and bearing many lance-shaped, *rather rough leaves* from 2 to 6 *inches* long. *The flower clusters which* are borne at the ends of the branches consist of numerous oddly shaped orange-colored flowers. The plant is in flower usually from June to September, followed late in the fall by pods from 4 to 5 inches long containing the seeds with their long silky hairs. This plant, unlike the other milkweeds, contains little or no milky *juice.* The root is large, branching, white, and fleshy.

Other species.—The roots of the common milkweed, *Asclepias syriaca* L., which occurs in fields and waste places from Canada to North Carolina and Kansas, and the swamp milkweed, *A. incarnata* L., found in swamps from Canada to Tennessee and Kansas, are also used to some extent. Both of these species contain a milky juice. The former has pinkish-purple flowers, while those of the latter are flesh or rose colored.

Part used.—The roots of the several species, collected in autumn. In limited demand only.

FIGURE 29.—Butterflyweed (*Asclepias tuberosa*)

FIGURE 30.—Butternut (*Juglans cinerea*)

BUTTERNUT

Juglans cinerea L. (Fig. 30.)

Other common names.—Juglans, white walnut, lemon walnut, oil nut.

Habitat and range.—The butternut tree is of common occurrence in rich woods from New Brunswick to North Dakota and south to Georgia, Mississippi, and Arkansas.

Description.—The butternut tree is usually from 30 to 50 feet in height and *when old has a thick, rough, brownish gray, furrowed bark. The twigs,* leaf stems, and leaflets, especially in the early stages of growth, are furnished with sticky hairs. The leaves are composed of from 11 to 17 leaflets, each from 2 to 3 inches long. The flowers are produced in May at the same time as the leaves, the male flowers borne in catkins from 3 to 5 inches in length and the female flowers in clusters of 6 to 8 flowers each. The edible unit, which ripens in Octo-

ber, is inclosed in a hard, thick, deeply furrowed shell, enveloped in a strong-smelling, sticky husk.

Part used.—The inner bark, preferably of the root, collected in autumn, and, to a less extent, the leaves. In limited demand only.

BUTTON-SNAKEROOT

Eryngium aquaticum L. (Fig. 31.)

Synonym.—*Eryngium yuccifolium* Michx.

Other common names.—Eryngium, eryngo, water eryngo, corn snakeroot, rattlesnake master, rattlesnake-weed, rattlesnake flag.

Habitat and range.—Although sometimes occurring on dry land, button-snakeroot usually inhabits swamps and low, wet ground from Connecticut and the pine barrens of New Jersey to Illinois and South Dakota and south to Texas and Florida.

Description.—This plant has grasslike, rigid, parallel-veined leaves 1 to 2 feet in length and about one-half inch in width. The stout furrowed stem reaches a height of from 2 to 6 feet and is generally unbranched except near the top. The insignificant whitish flowers are borne in dense, stout-stemmed heads from June to September. The stout rootstock is very knotty, with numerous short branches, and produces many thick, rather straight roots.

Part used.—*The rootstock, collected in autumn. In limited demand only.*

FIGURE 31.—Button-snakeroot (*Eryngium aquaticum*)

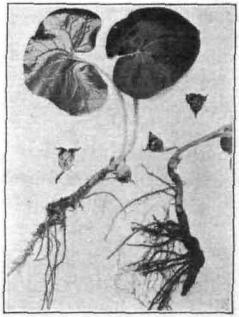

FIGURE 32.—Canada wildginger (*Asarum canadense*)

CANADA WILDGINGER

Asarum canadense L. (Fig. 32.)

Other common names.—Asarum, Indian ginger, Canada snakeroot, Vermont snakeroot, heart snakeroot, southern snakeroot, black snakeroot, coltsfoot snakeroot, black snakeweed, broad-leaved asarabacca, false coltsfoot, *colicroot.*

Habitat and range.—This inconspicuous little plant frequents rich woods or rich soil along roadsides from Canada south to North Carolina and Kansas.

Description.—Canada wildginger, better known perhaps as Canada snakeroot, is a small plant, apparently stemless, and not more than 6 to 12 inches in height. It usually has but two leaves, which are borne on slender, finely hairy stems. The leaves are kidney-shaped or heart-shaped, thin, dark green above and paler green on the lower surface, and from 4 to 7 inches broad. The solitary flower is borne on a short, slender stalk produced between the two leaf stems, and on account of its closeness to the ground it is not readily noticeable. It is bell-shaped and of a dull-brown or brownish-purple color, the inside being darker than the outside. The plant has a creeping, yellowish rootstock with thin rootlets produced from joints which occur about every inch. It has a fragrant odor and spicy taste.

Part used.—The rootstock, collected in autumn. In reasonably constant demand.

CAROLINA-JESSAMINE

Gelsemium sempervirens (L.) Ait. f. (Fig. 33.)

Other common names.—Yellow jasmine or jessamine, Carolina wild woodbine, evening trumpetflower.

Habitat and range.—Carolina-jessamine is a plant native to the South, found along banks of streams, in woods, lowlands, and thickets, generally near the coast, from the eastern part of Virginia to Florida and Texas and south to Mexico.

Description.—This highly ornamental climbing or trailing plant grows abundantly in the woods of the Southern States, its slender stems are festooned over trees and fences, and its presence is made known by the delightful perfume exhaled by its flowers. The smooth, shining stems of this vine sometimes reach a length of 20 feet. The leaves, which are from 1½ to 3 inches long, generally remain on the vine during the winter. The bright-yellow funnel-shaped flowers, which appear from January to April, are very fragrant but poisonous. The rootstock, attaining a length of 15 feet or more, runs near the surface of the ground. It is branched and here and there produces fibrous rootlets. When fresh it is very yellow and has a peculiar odor and bitter taste.

Part used.—The rootstock, collected when the plant has come into flower, and cut into pieces from 1 to 6 inches long. In reasonably constant demand.

FIGURE 33.—Carolina-jessamine (*Gelsemium sempervirens*)

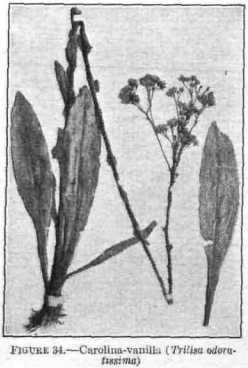

FIGURE 34.—Carolina-vanilla (*Trilisa odoratissima*)

CAROLINA-VANILLA

Trilisa odoratissima (Walt.) Cass. (Fig. 34.)

Synonym.—*Liatris odoratissima* Michx.

Other common names.—Deertongue, vanilla leaf, vanilla plant, dog's-tongue, houndstongue.

Habitat and range.—Carolina-vanilla is found in dry or wet pine barrens from southeastern Virginia to North Carolina, Florida, and Louisiana.

Description.—This is a stout erect herb 2 to 3 feet high with smooth, thick, entire leaves 4 to 10 inches long and 1 to 1½ inches wide. In August to September the small purple flowers are borne, 5 to 10 in a head, in branched, rather flat-topped clusters. The leaves, especially when bruised, have a characteristic odor of vanilla.

Part used.—This plant, while of minor importance as a drug plant is included here because large quantities of the leaves are used in the flavoring of tobacco. In reasonably constant demand.

CASCARA BUCKTHORN

Rhamnus purshiana DC. (Fig. 35.)

Other common names.—Cascara sagrada, chittembark, chittam wood, sacred bark, bearberry-tree, bearwood.

Habitat and range.—This native tree occurs on the sides and bottoms of canyons from the Rocky Mountains to the Pacific Ocean, extending north into British America.

Description.—The cascara tree is usually from 15 to 20 feet in height. The rather thin leaves are from 2 to 6 inches long and about 1 to 3 inches wide, somewhat hairy on the lower surface and rather prominently veined. The small, insignificant greenish flowers are produced in clusters and are followed by black, 3-seeded berries of a somewhat insipid taste. The bark has a somewhat aromatic odor and an extremely bitter taste. In the cascara district several other species of Rhamnus occur which are not commercially important, but their resemblance to *R. purshiana* may lead inexperienced persons to include the bark of such species in their collections.

Part used.—The bark, collected during the summer. The collecting season opens about the end of May and closes before the rainy season sets in, as bark collected after exposure to wet weather is difficult to cure properly. The strips of bark after removal from the trees are dried in such a way that the inner surface is not exposed to the sunlight, in order to retain its yellow color. Cascara bark must be aged at least one year before it is used. If collectors in removing the bark allow enough to remain to prevent the tree from dying it will develop new bark, thus prolonging the natural supply of this valuable drug which is gradually being exhausted.

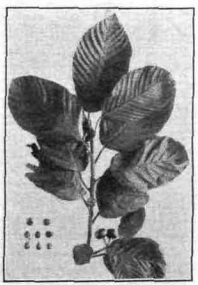

FIGURE 35.—Cascara buckthorn (*Rhamnus purshiana*)

FIGURE 36.—Catnip (*Nepeta cataria*)

CATNIP

Nepeta cataria L. (Fig. 36.)

Other common names.—Cataria, catmint, catwort, catrup.

Habitat and range.—Catnip, a common weed, occurs in rather dry soil in waste places and cultivated land from New Brunswick to Minnesota and south to Virginia and Arkansas.

Description.—Catnip has a somewhat whitish appearance due to the fine white hairs on the stems. It grows to a height of from 2 to 3 feet with erect, square, branched stems. The leaves, from 1 to 2½ inches in length, are somewhat heart-shaped, covered below with fine white hairs. From June to September the plant produces thick flowering spikes at the end of the stem and branches, consisting of many whitish flowers dotted with purple. The plant has a strong odor.

Part used.—The leaves and flowering tops, for which there is a reasonably constant demand, collected when the plant is fully in flower. The coarser stems and branches should be rejected. Catnip oil, which may be obtained from the herb by steam distillation, is used in small quantities as a scent in trapping bobcats and mountain lions.

CELANDINE

Chelidonium majus L. (Fig. 37.)

Other common names.—Chelidonium, garden celandine, greater celandine, tetterwort, killwart, wart flower, wartweed, wartwort, felonwort, cockfoot, devil's-milk, Jacob's-ladder, swallowwort, wretweed.

Habitat and range.—Celandine is found in rich damp soil along fences and roadsides near towns from Maine to Ontario and southward. It is common from southern Maine to Pennsylvania.

Description.—This erect, branched, sparingly hairy herb is from 1 to 2 feet in height, with thin leaves 4 to 8 inches in length, which have a grayish-green appearance and are deeply and variously cleft. The small, sulphur-yellow flowers are produced from April to September, followed by smooth, slender capsules containing numerous seeds. The plant contains an acrid, yellow juice and when bruised has an unpleasant odor.

Part used.—The entire plant, collected when it is in flower. In limited demand only.

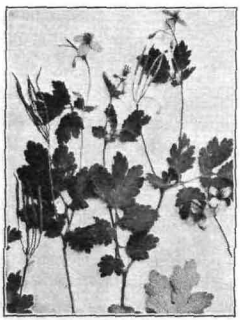

FIGURE 37.—Celandine (*Chelidonium majus*)

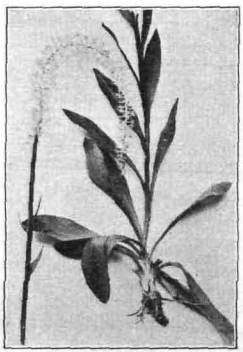

FIGURE 38.—Chamaelirium (*Chamaelirium luteum*)

CHAMAELIRIUM

Chamaelirium luteum (L.) A. Gray. (Fig. 38.)

Other common names.—Helonias, unicorn root, false unicorn root, blazing-star, drooping starwort, starwort, devil's-bit, unicorn's-horn. This plant is frequently confused with *Aletris farinosa* L., not because it bears much resemblance to the latter but probably on account of a similarity in some of the common names by which they are sometimes designated. In the drug trade it is perhaps best known as Helonias, but the use of that name is likely to lead to confusion because the plant has no relation to the genus Helonias.

Habitat and range.—This native plant is found in open woods from Massachusetts to Michigan and south to Florida and Arkansas.

Description.—*Chamaelirium is an erect, fleshy herb. The male and female* flowers are borne on separate plants. The male plants grow to a height of 1½ to 2½ feet, while the female plant is sometimes 4 feet tall and is more leafy. The leaves, which are from 2 to 8 inches long, are spoon shaped, being wider at the top than at the base. The white starry flowers are produced from June to July. The

flowers of the male plant are borne on plumelike spikes from 3 to 9 inches long and those of the female plant in erect spikes. The rootstock is from one-half to 2 inches in length and usually curved upward at one end in the form of a horn. The rootlets penetrate to the center of the rootstock. This and its disagreeable bitter taste distinguish it from Aletris root.

Part used.—The *rootstock, collected in autumn.* In limited demand only.

CITRONELLA HORSEBALM

Collinsonia canadensis L. (Fig. 39.)

Other common names.—Stoneroot, Collinsonia, knob-root, knob grass, knobweed, knotroot, horseweed, richweed, richleaf, ox balm.

Habitat and range.—Citronella horsebalm is found in moist shady woods from *Maine to Wisconsin and south to Florida* and Kansas.

Description.—This plant is a tall herb growing as high as 5 feet with a stout, erect, branched stem, smooth or the upper part hairy. The leaves are from 3 to 8 inches long, pointed, sometimes heart-shaped at the base, and coarsely toothed. From July to October the plant produces large, loose panicles of small pale-yellow, lemon-scented flowers. The entire flowering herb possesses a pleasant, lemonlike odor. The root, even when fresh, is very hard, hence the name stoneroot. It is horizontal, large, thick, and woody, the upper side rough, knotty, and irregularly branched. It has a rather disagreeable odor and a spicy, pungent taste.

Part used.—The root, collected in autumn. In reasonably constant demand.

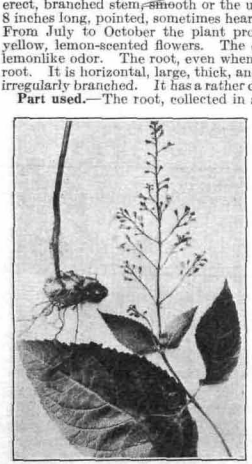

FIGURE 39.—Citronella horsebalm (*Collinsonia canadensis*)

FIGURE 40.—Cohosh bugbane (*Cimicifuga racemosa*)

COHOSH BUGBANE

Cimicifuga racemosa (L.) Nutt. (Fig. 40.)

Other common names.—Black cohosh, black snakeroot, bugwort, rattlesnakeroot, rattleroot, rattleweed, rattletop, richweed, squawroot.

Habitat and range.—Although preferring the shade of rich woods, cohosh bugbane will *grow occasionally in sunny places* in fence corners and woodland pastures. It is most abundant in the Ohio Valley, but it occurs from Maine to Wisconsin, south along the Allegheny Mountains to Georgia, and westward to Missouri.

Description.—Cohosh bugbane, more commonly, but incorrectly, known in the trade as black cohosh and black snakeroot, is a conspicuous woodland plant on account of its tall flowering spikes. The tall rather slender plant sometimes grows to a height of 8 feet. The leaves are divided on the plan of three numerous-toothed leaflets about 2 inches long. The graceful flower spike, which is produced from June to August, is from 6 inches to 2 feet in length. As the white, round

flower buds expand they give the spike a somewhat feathery appearance. Buds, blossoms, and seed pods may be seen on the spikes at the same time, the ripe pods full of seeds remaining on the dead stem during the winter. The flowers emit an offensive odor. The rootstock is large, horizontal, and knotty, and from the lower part are produced long, fleshy roots.

Part used.—The rootstock, collected after the fruit has ripened, usually in September. In reasonably constant demand.

COLTSFOOT

Tussilago farfara L. (Fig. 41.)

Other common names.—Coughwort, assfoot, horsefoot, foalfoot, bull's-foot, horsehoof, colt-herb, clayweed, cleats, dove-dock, dummyweed, ginger, ginger-root, hoofs, sowfoot, British tobacco, gowan.

Habitat and range.—Coltsfoot is found along brooks and in wet places and moist clayey soil along roadsides from eastern Quebec to Pennsylvania, Ohio, and Minnesota.

Description.—The white woolly, scaly flowering stalks of this plant with their yellow blossoms appear in the spring before the leaves. There are several stalks, from 3 to 18 inches in height, arising directly from the rootstock and each one bearing at the top a single yellow flower head having in the center numerous tubular disk flowers which are surrounded by ray flowers. The flowers open only in sunny weather. The ripe seed head looks somewhat like that of a dandelion. Some time after the flowers appear the leaves are produced on long erect stalks directly from the rootstock. They are from 3 to 7 inches wide and in shape resemble a horse's hoof. The lower surface is white with densely matted woolly hairs.

Part used.—The leaves and roots, the former collected when they are nearly full size. In limited demand only.

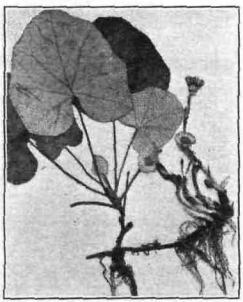

FIGURE 41.—Coltsfoot (*Tussilago farfara*)

FIGURE 42.—Comfrey (*Symphytum officinale*)

COMFREY

Symphytum officinale L. (Fig. 42.)

Other common names.—Symphytum, healing herb, knitback, ass-ear, backwort, blackwort, bruisewort, gum plant, slippery-root.

Habitat and range.—Comfrey occurs in waste places from Newfoundland to Minnesota and south to Maryland.

Description.—This coarse, hairy herb is from 2 to 3 feet high, erect and branched with thick, rough leaves. The lower leaves are 3 to 10 inches long, the upper ones smaller, lance shaped, and stemless. The terminal flower clusters, composed of numerous purplish or dirty white, tubular bell-shaped flowers, are produced from June to August. The nutlets which follow are brown, shining, and somewhat wrinkled. The dried root is very mucilaginous.

Part used.—The root, dug in autumn or in early spring. In limited demand only.

COMMON JUNIPER

Juniperus communis L. (Fig. 43.)

Other common names.—Fairy circle, hackmatack, horse savin, gorst, aiten.

Habitat and range.—The juniper occurs on dry, sterile hills from Canada south to New Jersey, west to Nebraska, and in the Rocky Mountains to New Mexico.

Description.—Juniper is an evergreen shrub sometimes attaining the height of a small tree, with erect trunk and spreading branches, covered with a shreddy bark. The leaves are straight and rigid, awl-shaped, about one-fourth to one-half an inch long, with sharp, prickly points. The male and female flowers produced in April and May are usually borne on separate plants, the male flowers in short catkins and the female flowers in short cones. The fleshy, berrylike fruit, which does not ripen until the second year, is roundish, dark purple, covered with a pale-bluish bloom and contains three bony seeds embedded in a brownish pulp. It has a spicy, aromatic odor and a bitterish, turpentinelike taste.

Part used.—The berries, for which there is only a limited demand, are collected when ripe, usually in October. Oil of juniper is obtained from the berries by distillation.

FIGURE 43.—Common juniper (*Juniperus communis*)

FIGURE 44.—Common winterberry (*Ilex verticillata*)

COMMON WINTERBERRY

Ilex verticillata (L.) A. Gray. (Fig. 44.)

Synonym.—*Prinos verticillata* L.

Other common names.—Prinos, winterberry, Virginia winterberry, black alder, false alder, white alder, feverbush.

Habitat and range.—This native shrub is found in swamps, moist woods, and along banks of streams in Canada and the eastern United States, and westward to Wisconsin and Missouri.

Description.—Common winterberry is a shrub usually from 6 to 8 feet high (sometimes much higher) with grayish bark and smooth twigs. The leaves are from 2 to 3 inches long and about an inch wide. They are usually rather thick and sharply toothed. In autumn the leaves turn black. The flowers, which appear from May to July, are small and white, the male clusters consisting of 2 to 10 flowers and the female clusters of only 1 to 3. The bright-red, shining fruits, about the size of a pea and each containing about six seeds, are clustered around the stem. Branches and twigs of this plant with their bright-red berries are a familiar sight during the Christmas season when they are much used for decorative purposes.

Part used.—The bark, and to a less extent the berries, collected in autumn. *In limited demand only.*

CULVERS-PHYSIC

Veronica virginica L. (Fig. 45.)

Synonym.—*Leptandra virginica* (L.) Nutt.

Other common names.—Culvers-root, blackroot, bowmansroot, beaumont root, Brinton root, tall speedwell, tall veronica, physic-root, whorlywort.

Habitat and range.—This common native herb is found abundantly in moist, rich woods, mountain valleys, meadows, and thickets from Nova Scotia to British Columbia and south to Alabama, Missouri, and Nebraska.

Description.—Culvers-physic is a tall, slender-stemmed herb from 3 to 7 feet in height. The long, narrow, pointed leaves, which are arranged around the stem at intervals, in groups of from three to nine, are 3 to 6 inches in length and 1 inch or less in width. The tube-shaped flowers, produced from June to September, are borne in several densely crowded, slender, terminal, spikelike heads from 3 to 9 inches long. The flowers are usually white, but at times are pink to bluish or purple.

Part used.—The rootstock and roots, collected in the fall of the second year. In reasonably constant demand.

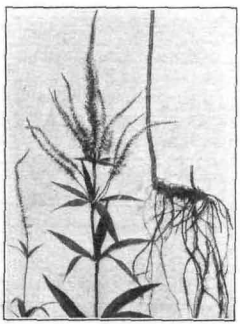

FIGURE 45.—Culvers-physic (*Veronica virginica*)

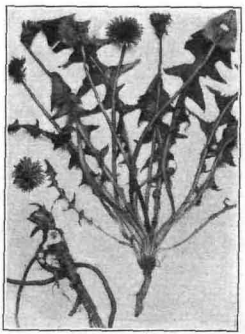

FIGURE 46.—Dandelion (*Leontodon taraxacum*)

DANDELION

Leontodon taraxacum L. (Fig. 46.)

Synonym.—*Taraxacum officinale* Weber.

Other common names.—Blowball, cankerwort, doon-head-clock, fortune teller, horse gowan, Irish daisy, yellow gowan, one-o'clock.

Habitat and range.—With the exception, possibly, of a few localities in the South, the dandelion is at home almost everywhere in the United States, being a familiar weed in meadows and waste places, and especially in lawns.

Description.—The dandelion is so well known as a widely distributed weed that a detailed description of it is unnecessary. Its golden-yellow flowers, followed by the round, fluffy, seed heads, are a familiar sight in lawns, meadows, and along roadsides. The entire plant contains a white, milky juice. In spring the young tender leaves are much used for table greens. The plant has a large, thick, fleshy taproot which extends well into the ground.

Part used.—The root, collected late in summer and in fall when the milky juice has become thicker and more bitter. The dried root should not be kept too long, because it loses some of its medicinal virtues with age. In limited demand only.

ECHINACEA

Echinacea angustifolia DC. (Fig. 47.)

Synonym.—*Brauneria angustifolia* (DC.) Heller.

Other common names.—Hedgehog-coneflower, pale-purple coneflower, Sampson-root, niggerhead (in Kansas).

Habitat and range.—Echinacea is found in scattered patches in rich prairie soil or sandy soil from Alabama to Texas and northwestward, being most abundant in Kansas and Nebraska.

Description.—This herb grows to a height of from 2 to 3 feet, sending up a rather stout, bristly haired stem bearing thick hairy leaves from 3 to 8 inches long. The flowers, which appear from July to October, vary in color from whitish rose to pale purple. The flower heads are ornamental and consist of ray and disk flowers. The brown fruiting heads, which develop after the flowers, are conical, stiff, and chaffy. The plant has a thick, blackish root.

Part used.—The root, collected in autumn. In reasonably constant demand.

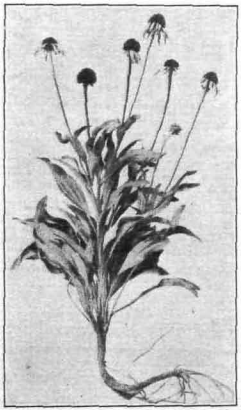

FIGURE 47.—Echinacea (*Echinacea angustifolia*)

FIGURE 48.—Elecampane (*Inula helenium*)

ELECAMPANE

Inula helenium L. (Fig. 48.)

Other common names.—Inula, inul, horseheal, elf dock, elfwort, horse elder, scabwort, yellow starwort, velvet dock, wild sunflower.

Habitat and range.—This herb is found along roadsides and fields and damp pastures from Nova Scotia to North Carolina and westward to Missouri and Minnesota.

Description.—Elecampane is a rough plant growing from 3 to 6 feet in height and bearing some resemblance to the sunflower. In its first year it produces only root leaves which acquire considerable size, but in the following season the stout, densely hairy stem develops, attaining a height of from 3 to 6 feet. The basal or root leaves are borne on long stems and are from 10 to 20 inches long and 4 to 8 inches wide, while the upper leaves are smaller and clasp the stem. From July to September the flower heads are produced, either singly or a few together. These are from 2 to 4 inches broad, consist of a yellow disk and long, narrow,

yellow rays, and resemble, as stated, small sunflowers. The plant has a large, long, branching, yellow root.

Part used.—The root, preferably collected in the fall of the second year and *thoroughly freed from dirt, sliced crosswise or lengthwise and carefully dried in* the shade. In limited demand only.

FIGWORT

Scrophularia marilandica L. (Fig. 49.)

Synonym.—*Scrophularia nodosa* var. *marilandica* A. Gray.

Other common names.—Maryland figwort, heal-all, pilewort, carpenter square.

Habitat and range.—This plant, often called Maryland figwort, is found in woodlands from Maine to Kansas and south to Georgia and Tennessee.

Description.—The figwort is 3 to 10 feet high with 4-angled stems widely branched above and slender-stemmed, somewhat egg-shaped or lance-shaped, sharply toothed leaves 3 to 9 inches long. The numerous small, greenish-purple flowers are produced from July to September in rather open panicles.

Part used.—*The herb. In limited demand only.*

FIGURE 49.—Figwort (*Scrophularia marilandica*)

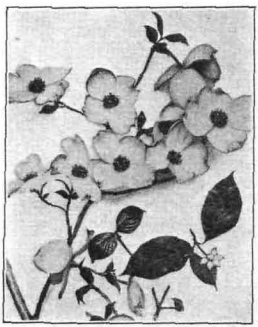

FIGURE 50.—Flowering dogwood (*Cornus florida*)

FLOWERING DOGWOOD

Cornus florida L. (Fig. 50.)

Other common names.—Cornus, American dogwood, Virginia dogwood, Florida dogwood, American cornelian tree, flowering cornel, Florida cornel, white cornel, Indian arrowwood, nature's-mistake.

Habitat and range.—Dogwood occurs in woods from southern Maine and south*ern Ontario to Florida, Texas, and Missouri, but grows most abundantly in the* Middle Atlantic States.

Description.—The dogwood sometimes grows to a height of 40 feet, but more frequently is a shrub. In the early spring the naked, leafless branches support numerous large, showy white flowers, so-called. The four showy parts of these "flowers" are petallike bracts which surround the true flowers, which are small, greenish-yellow, and inconspicuous. The leaves, which develop after the flowers have disappeared, turn a bright red in autumn, and this with the scarlet fruit makes the tree very attractive at that time of the year.

Part used.—The bark of the root, collected in autumn. In limited demand only.

FOXGLOVE

Digitalis purpurea L. (Fig. 51.)

Other common names.—*Digitalis*, purple foxglove, thimbles, fairy cap, fairy thimbles, fairy finger, fairybells, dog's-finger, finger flower, lady's-glove, lady's-finger, lady's-thimble, popdock, flapdock, flopdock, lion's-mouth, rabbit's-flower, cottagers, throatwort, Scotch mercury.

Habitat and range.—Originally introduced into this country from Europe as an ornamental garden plant, foxglove may now be found wild in a few localities in parts of Oregon, Washington, and West Virginia, having escaped from cultivation and assumed the character of a weed. It occurs along roads and fence rows, in small cleared places, and on the borders of timberland.

Description.—During the first year of its growth the foxglove produces only a dense rosette of leaves, but in the second season it produces a tall, leafy flowering stalk from 3 to 4 feet high. The leaves, which are from 4 to 12 inches long and about twice as wide, are wrinkled, downy, and show a thick network of prominent veins. In early summer the tall flower stalk produces numerous tubular, bell-shaped flowers which are about 2 inches long and which vary in color from white through lavender and purple.

Part used.—The leaves, which should be carefully dried in the shade as rapidly as possible and preserved in dark, air-tight receptacles. In reasonably constant demand.

FIGURE 51.—Foxglove (*Digitalis purpurea*)

FIGURE 52.—Fragrant goldenrod (*Solidago suaveolens*)

FRAGRANT GOLDENROD

Solidago suaveolens Schoepf. (Fig. 52.)

Synonym.—*Solidago odora* Ait.

Other common names.—Sweet goldenrod, wound weed, Blue Mountain tea, sweet-scented goldenrod, anise-scented goldenrod, true goldenrod.

Habitat and range.—The fragrant goldenrod is found in dry, sandy soil or pinelands from Nova Scotia south to Florida and west to Arkansas and Texas.

Description.—Fragrant goldenrod is a slender herb from 2 to 4 feet high with nearly smooth stems. The narrow, pointed, entire leaves, which have a pleasant anise odor when crushed, are 2 to 4 inches long and one-fourth to three-fourths of an inch wide. In summer and fall the numerous small, yellow flowers appear, densely crowded in branched clusters at the end of the stems.

Part used.—The leaves and tops, collected during the flowering period. In limited demand only.

FRINGETREE

Chionanthus virginica L. (Fig. 53.)

Other common names.—American fringetree, white fringe, flowering ash, poison ash, graybeard tree, old-man's-beard, shavings, snowdrop tree, snowflower.

Habitat and range.—The fringetree is found in moist thickets and along streams from Delaware to Florida and Texas.

Description.—The fringetree is from 6 to 20 feet in height, with the trunk covered with a light-colored bark. It has smooth entire leaves. The white flowers, which from their drooping character give a fringelike appearance, are produced in May and June, are borne in dense clusters, and are followed by fleshy, bluish-black fruits containing a 1-seeded nut.

Part used.—The bark of the root. In reasonably constant demand.

FIGURE 53.—Fringetree (*Chionanthus virginica*)

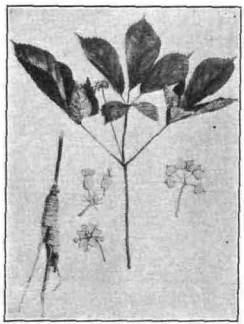

FIGURE 54.—Ginseng (*Panax quinquefolium*)

GINSENG

Panax quinquefolium L. (Fig. 54.)

Other common names.—American ginseng, sang, redberry, fivefingers.

Habitat and range.—Ginseng is found sparingly in the rich, moist soil in hardwood forests from Maine to Minnesota southward to the mountains of northern Georgia and Arkansas. Ginseng has long been cultivated in small areas in the Northern and Central States and on the North Pacific coast.[5]

Description.—Ginseng is an erect plant growing from 8 to 15 inches high and bearing three leaves at the summit, each leaf consisting of five thin, stalked leaflets. The three upper leaflets are larger than the two lower ones. From 6 to 20 greenish-yellow flowers are produced in a small cluster during July and August, followed later in the season by bright-crimson berries. Ginseng has a thick, fleshy, spindle-shaped root 2 to 3 inches or more in length and about one-half to 1 inch in thickness, often branched. After the second year the root becomes branched or forked, and it is the branched root, especially if it resembles the human form, which finds particular favor with the Chinese, who are the principal consumers of the root.

Part used.—The root, dug in autumn. If collected at any other season of the year the root shrinks more on drying, which injures its appearance and lowers its market value. In reasonably constant demand.

[5] STOCKBERGER, W. W. GINSENG CULTURE. U. S. Dept. Agr. Farmers' Bul. 1184, 15 p., illus. 1921.

GOLDEN GROUNDSEL

Senecio aureus L. (Fig. 55.)

Other common names.—Life root, golden ragwort, swamp squawweed, cough-weed, grundy-swallow.

Habitat and range.—Golden groundsel is found in swamps and meadows from Newfoundland to Ontario, and Missouri, Florida, and Texas.

Description.—This plant is a smooth herb with rather slender, solitary or tufted stems one-half to 2½ feet high. The basal leaves, which are 1 to 6 inches long, are heart-shaped or kidney-shaped with long stems and often purplish beneath. The lower stem leaves are lance-shaped and deeply cut and the upper-most small and clasping. The flower heads, from two-thirds of an inch to about 1 inch broad, consisting of disk and deep yellow ray flowers, are borne several in a flat-topped open cluster during the early summer.

Part used.—The herb and the root. In limited demand only.

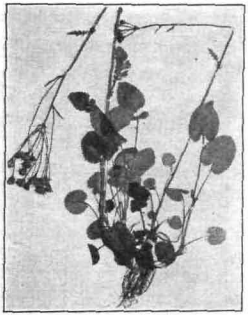

FIGURE 55.—Golden groundsel (*Senecio aureus*)

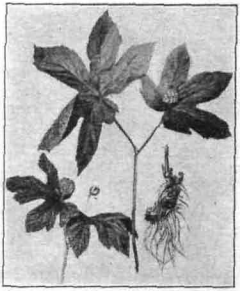

FIGURE 56.—Goldenseal (*Hydrastis canadensis*)

GOLDENSEAL

Hydrastis canadensis L. (Fig. 56.)

Other common names.—Yellowroot, yellow puccoon, orange-root, yellow Indian paint, turmeric root, Indian turmeric, Ohio curcuma, ground raspberry, eyeroot, eyebalm, yelloweye, jaundice root, Indian dye.

Habitat and range.—This native forest plant occurs in patches in high, open woods, and usually on hillsides or bluffs affording natural drainage, from western New England to Minnesota and western Ontario, and south to Georgia and Missouri. Goldenseal is now becoming scarce throughout its range and is successfully cultivated in many localities.[6]

Description.—Goldenseal has a thick, yellow rootstock which sends up an erect, hairy stem about 1 foot in height which branches near the top, one branch bearing a large leaf and another a smaller leaf and a flower. The leaves have from five to nine lobes and when full grown are from 6 to 8 inches in diameter. The greenish-white flower which appears in April or May is unattractive and peculiar in form and is followed by a large, fleshy, berrylike head, which when it ripens in autumn is bright red, resembling a large raspberry, and which contains from 10 to 20 small, shining, hard, black seeds. The rootstock when fresh is bright yellow externally and internally with fibrous rootlets produced from the sides. The latter when dry are very brittle and are frequently broken off when the root-stocks are handled.

Part used.—The rootstock, collected in autumn after the seed is ripe, and the leaves, gathered in the late summer. In reasonably constant demand.

[6] VAN FLEET, W. GOLDENSEAL UNDER CULTIVATION. U. S. Dept. Agr. Farmers' Bul. 613, 15 p., illus. 1914.

GOLDTHREAD

Coptis trifolia (L.) Salisb. (Fig. 57.)

Other common names.—Coptis, cankerroot, mouth root, yellowroot.

Habitat and range.—Goldthread is found in damp, mossy woods and bogs from Canada and Alaska south to Maryland and Minnesota. It is most common in the New England States, northern New York and Michigan, and in Canada, where it frequents the dark sphagnum swamps, cold bogs, and the shade of dense forests of cedars, pines, and other evergreens.

Description.—This plant, which in its general appearance somewhat resembles the strawberry plant, is of low growth, being only 3 to 6 inches in height. Its shiny, evergreen leaves, which are divided into three parts, grow directly from the base of the plant. A single small, white, star-shaped flower, which appears from May to August, is borne at the end of each flowering stalk. The plant is appropriately named after the long, slender, creeping, much-branched and frequently matted, bright golden-yellow root.

Part used.—The root, collected in autumn. In reasonably constant demand.

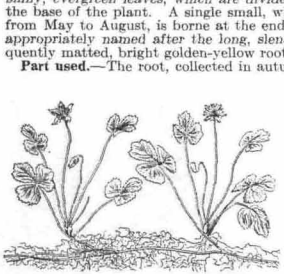

FIGURE 57.—Goldthread (*Coptis trifolia*)

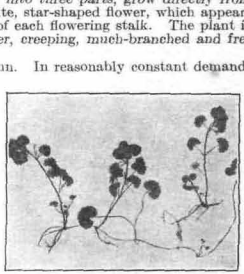

FIGURE 58.—Ground-ivy (*Nepeta hederacea*)

GROUND-IVY

Nepeta hederacea (L.) Trev. (Fig. 58.)

Synonym.—*Nepeta glechoma* Benth.; *Glecoma hederacea* L.

Other common names.—Field balm, gill-over-the-ground, gill, creeping Charlie, robin-runs-away, cat's-foot.

Habitat and range.—Ground-ivy is found in damp and shady places, especially in thickets, from Newfoundland and Ontario to Georgia, Tennessee, Kansas, and Colorado.

Description.—This small herb has numerous creeping, leafy, hairy stems sometimes 18 inches long, commonly branching at the base. The opposite leaves are round kidney-shaped, bluntly toothed, green on both sides, and one-half to 1½ inches in diameter. The stems of the lower leaves are commonly longer than the leaves. The blue and white tube-shaped flowers are borne, few in a cluster, in the axils of the leaves from March to May.

Part used.—The herb. In limited demand only.

GUM PLANT

(1) *Grindelia robusta* Nutt.; (2) *G. squarrosa* (Pursh) Dunal. (Fig. 59.)

Other common names.—(2) Broad-leafed gum plant, scaly grindelia.

Habitat and range.—The gum plant (*Grindelia robusta*) grows in California, while the broad-leafed gum plant (*G. squarrosa*) is more widely distributed, being of common occurrence on the Plains and prairies from Saskatchewan to Minnesota and south to Texas and Mexico.

Description.—The name "gum plant" is applied especially to *Grindelia robusta* on account of the fact that the entire plant is covered with a resinous substance, giving it a gummy, varnished appearance. It is an erect herb with a round, smooth stem about 1½ feet in height. The leaves, about 1 inch in length, are green, leathery, rather rigid, and covered with resin. The plant branches freely near the top, each branch terminating in a yellow flower about three-fourths of an inch in diameter.

The broad-leafed gum plant, *Grindelia squarrosa*, is similar to *G. robusta*, except that it is smaller and less gummy in appearance. The leaves are much smaller and thinner and less rigid.

Part used.—The leaves and flowering tops of both species, collected when the plants are in full bloom. In reasonably constant demand.

FIGURE 59.—Broad-leafed gum plant (*Grindelia squarrosa*)

FIGURE 60.—Hazel alder (*Alnus rugosa*)

HAZEL ALDER

Alnus rugosa (Du Roi) Spreng. (Fig. 60.)

Synonym.—*Alnus serrulata* Willd.

Other common names.—Tag alder, common alder, red alder, smooth alder, green alder, American alder, speckled alder, swamp-alder, notch-leaved alder.

Habitat and range.—Hazel alder is found in swamps and along the marshy banks of streams from New England south to Florida and Texas and westward to Ohio and Minnesota.

Description.—The hazel alder, although it sometimes attains the height of a tree, is more frequently a shrub from 5 to 20 feet high with smooth, brownish-gray bark. It has somewhat leathery, oval leaves from 2 to 4½ inches long. The flowers, which appear early in the spring before the leaves develop, are reddish green. The male flowers are borne in drooping and the female in erect catkins. The conelike fruit usually remains on the shrub throughout the winter. The bark has a strong, rather aromatic odor and a bitter astringent taste.

Part used.—The bark. In limited demand only.

HEMLOCK

Tsuga canadensis (L.) Carr. (Fig. 61.)

Synonym.—*Abies canadensis* Michx.

Other common names.—Hemlock spruce, weeping spruce, spruce pine, tanbark tree.

Habitat and range. The hemlock tree is found in forests from Ontario south to Virginia and Alabama and west to Michigan and Wisconsin.

Description.—This tall forest tree, which at times attains a height of 110 feet and a trunk diameter of 4 feet, is well known throughout its range as a source of tanbark. Its lower branches are somewhat drooping, and the dense, rather delicate foliage is deep green above and silvery beneath. The flat, narrow leaves are from one-half to three-fourths of an inch long and less than one-twelfth of an inch wide. The hanging cones are as long as or slightly longer than the leaves.

Part used.—The bark. In limited demand only.

FIGURE 61.—Hemlock (*Tsuga canadensis*)

FIGURE 62.—Hemp dogbane (*Apocynum cannabinum*)

HEMP DOGBANE

Apocynum cannabinum L. (Fig. 62.)

Other common names.—Black hemp, black Indian hemp, Canadian hemp, American hemp, amy-root, bowmans root, bitterroot, Indian-physic, rheumatism weed, milkweed, wild cotton, Choctaw-root.

Habitat and range.—*Hemp dogbane is a native of this country and may be* found in thickets and along the borders of old fields throughout the United States.

Description.—Hemp dogbane is from 2 to 4 feet high, with erect branches and sharp-pointed, short-stalked leaves from 2 to 6 inches long. The small greenish white flowers which appear from June to August are borne in dense heads followed later by the slender, pointed pods which are about 4 inches in length. The plant contains a milky juice.

Other species.—The roots of a closely related species, *Apocynum androsaemifolium* L., are also collected. The branches of this plant are diverging and forked and the flower heads loose and spreading. It also contains a milky juice. There are several well-recognized forms which formerly were recognized as varieties of *A. cannabinum* and *A. androsaemifolium*, but which are now considered distinct species. The roots of all these species possess somewhat similar properties, but they are not all acceptable to the trade.

Part used.—The root, collected in autumn. In reasonably constant demand.

HOARHOUND

Marrubium vulgare L. (Fig. 63.)

Other common names.—Houndsbene, marvel, marrube.

Habitat and range.—Hoarhound grows in dry sandy or stony soil in waste places, along roadsides, and near dwellings, in fields, and in pastures. It is found from Maine to South Carolina, Texas, and westward to California and Oregon.

Description.—This is a bushy, branching herb with a pleasant aromatic odor and a whitish, woolly appearance, due to the hairs which thickly cover the entire plant. It grows from 1 to 3 feet high, with many woolly stems, rounded below and 4-angled above. The leaves are from 1 to 2 inches in length, nearly round, much wrinkled, somewhat hairy on the upper surface, and very hoary and prominently veined on the lower surface. The whitish flowers are borne in dense clusters in the axils of the leaves from June to September.

Part used.—The leaves and tops, collected just before the plant is in flower, the coarse stems being rejected. In limited demand only.

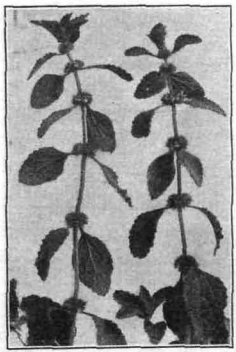

FIGURE 63.—Hoarhound (*Marrubium vulgare*)

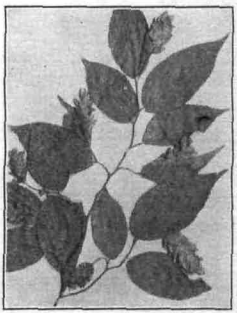

FIGURE 64.—Hophornbeam (*Ostrya virginiana*)

HOPHORNBEAM

Ostrya virginiana (Mill.) K. Koch. (Fig. 64.)

Other common names.—Ironwood, deerwood, leverwood, black hazel, Indian cedar.

Habitat and range.—The ironwood is common in rich woods in Canada and the eastern United States, and westward to Minnesota and Texas.

Description.—This slender tree sometimes attains a height of 50 feet in the western portion of its range, but farther eastward it usually grows only 15 to 20 feet high. The bark is finely furrowed in short lines lengthwise, and the wood is very hard and heavy. The leaves are from 2½ to 4 inches long and about an inch or more wide, resembling the leaves of the sweet birch except that they are rough to the touch instead of smooth and shining. The green inconspicuous male and female flowers are produced from April to May. The male flowers are borne in cylindrical catkins from 1½ to 3 inches long and the female flowers in short catkins which mature in July and August into large fruiting cones which very much resemble hops.

Part used.—The bark and inner wood. In limited demand only.

HOPTREE

Ptelea trifoliata L. (Fig. 65.)

Other common names.—Waferash, ptelea, wingseed, shrubby trefoil, swamp dogwood, three-leaved hoptree, ague bark, prairie-grub, quinine tree, stinking ash, stinking prairie-bush, sang-tree, pickaway-anise.

Habitat and range.—This native shrub is found in shady woods from New York to Florida and west to Minnesota and Texas, occurring in greatest abundance west of the Alleghenies.

Description.—The hoptree is a shrub usually from 6 to 8 feet, sometimes 20 feet, in height, with leaves consisting of three dark green, shining leaflets 2 to 5 inches long. The leaves are glandular dotted and are borne on long stems, but the leaflets are stemless. The greenish-white flowers, produced in June, are borne in compound clusters at the end of the stems. Both leaves and flowers have an unpleasant odor. The flowers are followed by large clusters of winged, flat, roundish fruits each containing two seeds. They have a bitter taste.

Part used.—The bark of the root. In limited demand only.

FIGURE 65.—Hoptree (*Ptelea trifoliata*)

FIGURE 66.—Horsechestnut (*Aesculus hippocastanum*)

HORSECHESTNUT

Aesculus hippocastanum L. (Fig. 66.)

Other common names.—Hippocastanum, bongay, conker-tree.

Habitat and range.—This tree is largely cultivated in this country as an ornamental shade tree and occasionally escapes from cultivation.

Description.—The horsechestnut is a rather large tree, usually reaching 40 feet or more in height. The large leaves are composed of five to seven leaflets from 4 to 8 inches long, pointed, and broader at the top than at the base. In June it produces handsome flower clusters sometimes a foot in length, consisting of large white flowers spotted with yellow and red. The fruit is round and prickly and contains a large shining brown nut.

Part used.—Horsechestnut bark is collected in autumn, and preference is given to the bark from the younger branches. In limited demand only.

HORSE NETTLE

Solanum carolinense L. (Fig. 67.)

Other common names.—Sand brier, bull nettle, radical-weed, tread-softly, apple of Sodom.

Habitat and range.—The horse nettle is found in dry, sandy soil from Ontario to Illinois and Massachusetts, Florida, and Texas.

Description.—This plant is easily recognized in late summer and fall by its round, smooth, orange-yellow berries about one-half to three-fourths of an inch in diameter which are borne in small drooping clusters. It is an herb 1 to 4 feet high with an erect, branched stem and covered with fine hair. The branches, also the petioles and midveins of the leaves, are armed with straight yellow prickles. The leaves are 2 to 6 inches long with rather deep triangular lobes. From May to September the plant produces violet or white flowers about 1 to 1¼ inches broad.

Part used.—The ripe berries, carefully dried. In limited demand only.

FIGURE 67.—Horse nettle (*Solanum carolinense*).

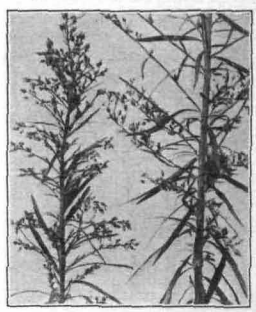

FIGURE 68.—Horseweed (*Erigeron canadensis*)

HORSEWEED

Erigeron canadensis L. (Fig. 68.)

Synonym.—*Leptilon canadense* (L.) Britton.

Other common names.—Erigeron, mare's-tail, Canada erigeron, butterweed, bitterweed, cow's-tail, colt's-tail, fireweed, bloodstanch, hogweed, prideweed, scabious.

Habitat and range.—Horseweed is common in fields and waste places and along roadsides throughout almost all of North America.

Description.—This weed varies greatly in height according to the soil it grows in. The erect stem, sometimes smooth, but usually bristly hairy, is generally branched near the top. The leaves are usually somewhat hairy, the lower ones 1 to 4 inches long and toothed; those scattered along the stem are rather narrow and smooth. From June to November the plant produces numerous heads of small, inconspicuous white flowers, followed by an abundance of seed.

Part used.—The entire herb, collected during the flowering period. Oil of erigeron, obtained from the plant by distillation, is produced commercially in Michigan and Indiana.[7] In limited demand only.

JACK-IN-THE-PULPIT

Arisaema triphyllum (L.) Schott. (Fig. 69.)

Synonym.—*Arum triphyllum* L.

Other common names.—Wild turnip, arum, three-leaved arum, Indian-turnip, wakerobin, wild pepper, dragon-turnip, brown dragon, devil's-ear, marsh turnip, swamp turnip, meadow turnip, pepper turnip, starchwort, bog onion, priest's-pintle, lords-and-ladies.

Habitat and range.—Jack-in-the-pulpit inhabits moist woods from Canada to Florida and westward to Kansas and Minnesota.

Description.—The jack-in-the-pulpit has one or two smooth leaves consisting of three leaflets from 3 to 6 inches long and from 1½ to 3½ inches wide. The

[7] SIEVERS, A. F. Op. cit. (See footnote 4.)

flower, which is either all green or green with dark purple stripes, is readily recognized on account of the similarity of its form to that of the calla lily. In autumn the fruit ripens in the form of a bunch of bright, scarlet, shining berries. The underground portion, usually referred to as the root but botanically known as a corm, is shaped like a turnip. The lower part is flat and wrinkled, while the upper part is surrounded by coarse wavy rootlets. It has an extremely burning taste.

Part used.—The dried corm, collected in the summer, is sliced crosswise and dried. Drying and heat diminish its burning taste, which disappears rapidly with age. In limited demand only.

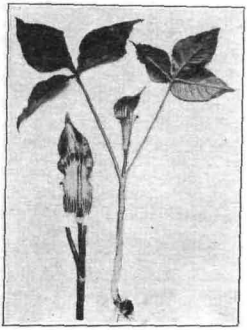

FIGURE 69.—Jack-in-the-pulpit (*Arisaema triphyllum*)

FIGURE 70.—Jimson weed (*Datura stramonium*)

JIMSON WEED

Datura stramonium L. (Fig 70.)

Other common names.—Jamestown weed, Jamestown lily, thorn apple, devil's apple, madapple, stinkweed, stinkwort, devil's-trumpet, fireweed, dewtry.

Habitat and range.—This is a very common weed in fields and waste places almost everywhere in the United States except in the North and West.

Description.—Jimson weed is an ill-smelling, poisonous plant with stout, much-branched, leafy stems from 2 to 5 feet high. The large, smooth, thin, wavy, toothed leaves are from 3 to 8 inches long. The flowers, which appear from May to September, are white, funnel-shaped, about 3 inches long, and have a pronounced odor. The prickly seed pods which follow are about the size of a horse-chestnut. When ripe these pods burst open, scattering numerous poisonous black, kidney-shaped seeds.

Part used.—The leaves, collected when the plant is in flower, and the seeds. In reasonably constant demand.

LADYSLIPPER

(1) *Cypripedium pubescens* Willd. (fig. 71); (2) *C. parviflorum* Salisb.

Other common names.—(1) Common yellow ladyslipper, large yellow ladyslipper, yellow ladyslipper, yellow moccasin flower, Venus's-shoe, Venus's-cup, yellow Indian shoe, American valerian, nerveroot, male nervine, yellow Noah's-ark, *yellows, monkeyflower, umbil-root, yellow umbil;* (2) *small* yellow ladyslipper.

Habitat and range.—Both of these species frequent bogs and wet places in deep shady woods and thickets. The large yellow ladyslipper may be found from Nova Scotia south to Alabama and west to Nebraska and Missouri. The range for the small yellow ladyslipper extends from Newfoundland south

along the mountains to Georgia and west to Missouri, Washington, and British Columbia.

Description.—These plants are readily recognized by the peculiar shape of their flowers. These appear in May and June, are very showy, and have a curiously formed lip which resembles an inflated bag, pale or bright yellow in color, variously striped or blotched with purple. In *Cypripedium pubescens* this lip is 1 to 2 inches in length, while in *C. parviflorum* it is smaller and somewhat more prominently striped. Both species grow from 1 to 2 feet in height and have rather large leaves from 2 to 6 inches long and from 1 to 3 inches wide, with numerous parallel veins. The rootstock is horizontal, crooked, and fleshy with numerous fibrous roots. It has a heavy disagreeable odor and a sweetish, bitter, and somewhat pungent taste.

Part used.—The rootstock and roots, collected in autumn. In reasonably constant demand.

FIGURE 71.—Common yellow ladyslipper (*Cypripedium pubescens*)

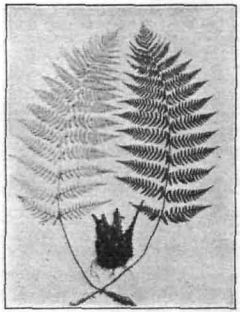

FIGURE 72.—Leather woodfern (*Dryopteris marginalis*)

LEATHER WOODFERN

(1) *Dryopteris marginalis* (L.) A. Gray (fig. 72); (2) *D. filixmas* (L.) Schott.

Synonyms.—(1) *Aspidium marginale* Sw.; (2) *A. filixmas* Sw.

Other common names.—(1) Marginal-fruited shield fern, evergreen woodfern; (2) male fern, male shield fern, sweet brake, knotty brake, basket fern, bear's-paw root.

Habitat and range.—These ferns are found in rocky woods, the male shield fern inhabiting the region from Canada westward to the Rocky Mountains and Arizona. The marginal-fruited shield fern, one of our most common ferns, occurs from Canada southward to Alabama and Arkansas.

Description.—Both of these plants are tall handsome ferns. They differ little in their general appearance, although the male shield fern, which grows to a height of about 3 feet, is somewhat larger than the other. The principal difference is in the arrangement of the fruit dots on the backs of the fern leaves. In the male shield fern these are located along the midrib, while in the marginal-fruited shield fern they are placed on the margins of the divisions of the fronds. These ferns have stout, erect rootstocks from 6 to12 inches in length and 1 to 2 inches thick, covered with brown, closely overlapping leaf bases and soft, brown, chaffy scales. The inside of the rootstock is pale green. It has a disagreeable odor and a bitter-sweet, astringent, nauseous taste.

Part used.—The rootstock, collected from July to September, which should be carefully cleaned, but not washed, dried out of doors in the shade as quickly as possible, and marketed at once. The drug deteriorates rapidly unless carefully preserved. In limited demand only.

LIVERLEAF

(1) *Hepatica americana* Ker. (fig. 73); (2) *H. acutiloba* DC.

Other common names.—(1) Round-leaved hepatica, common liverleaf, kidney liverleaf, liverwort (incorrect), noble liverwort, heart liverwort, three-leaved liverwort, liverweed, herb trinity, golden trefoil, ivy flower, mouse-ears, squirrel cup; (2) heart liverleaf, acute-lobed liverleaf, sharplobe liverleaf, sharp-lobe hepatica.

Habitat and range.—The common liverleaf is found in woods from Nova Scotia to northern Florida and west to Iowa and Missouri, while the heart liverleaf occurs from Quebec to Ontario, south to Georgia (but rare near the coast), and west to Missouri and Minnesota.

Description.—The hepaticas are among the earliest of our spring flowers, blossoming about March and frequently sooner. They grow only about 4 to 6 inches in height, with leaves produced from the rootstocks on soft, hairy stalks spreading on the ground. The thick and leathery evergreen leaves are roundish or kidney-shaped. The bluish to purple or white flowers are about half an inch in diameter and are borne singly on slender, hairy stalks arising from the root. The heart liverleaf is very similar to the common liverleaf, but has sharp leaf lobes while those of the common species are very blunt.

Part used.—The leaves of both species, collected in April. In limited demand only.

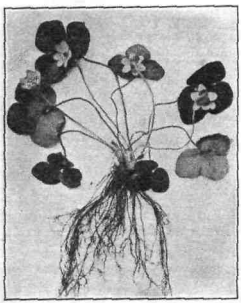

FIGURE 73.—Liverleaf (*Hepatica americana*)

FIGURE 74.—Lobelia (*Lobelia inflata*)

LOBELIA

Lobelia inflata L. (Fig. 74.)

Other common names.—Indian-tobacco, wild tobacco, asthma weed, gagroot, vomitwort, pukeweed, emetic herb, bladder pod, low belia, eyebright.

Habitat and range.—Lobelia may be found in sunny places in open woodlands, old fields and pastures, and along roadsides in the eastern United States and Canada, and west to Kansas, Arkansas, and Saskatchewan.

Description.—Lobelia is a poisonous plant with a milky juice. Its stem, which has but few branches, is smooth above while the lower part is rough and hairy. The lower leaves, which are about 2 inches in length, are borne on stalks, while the upper, smaller ones are stemless. The pale-blue flowers, which appear from summer until frost, are numerous, but very small and inconspicuous. The flower has an upper and lower lip, the latter being divided into three lobes and the upper one into two. The inflated seed capsules are nearly round and contain very numerous extremely minute, dark-brown seeds.

Part used.—The leaves and tops, not including too much of the stemmy portion. The material should be collected after some of the capsules have become inflated and carefully dried in the shade. In reasonably constant demand.

MAD-DOG SKULLCAP

Scutellaria lateriflora L. (Fig. 75.)

Other common names.—Blue pimpernel, madweed, hoodwort, mad-dog.

Habitat and range.—Skullcap grows in wet places from Newfoundland to British Columbia and south to Florida and New Mexico.

Description.—This plant is smooth or with very fine hair on the upper parts with slender, erect or declining, widely branching stems from one-third to 2½ feet high. The thin, slender-stemmed leaves are somewhat lance-shaped or egg-shaped, 1 to 3 inches long, and coarsely toothed. The blue and whitish, tube-shaped flowers appear from July to September.

Part used.—The herb. In reasonably constant demand.

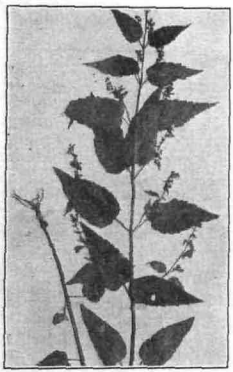

FIGURE 75.—Mad-dog skullcap (*Scutellaria lateriflora*)

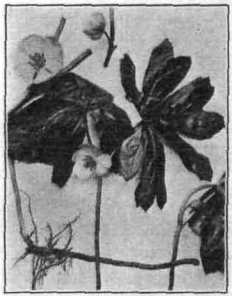

FIGURE 76.—Mayapple (*Podophyllum pellatum*)

MAYAPPLE

Podophyllum peltatum L. (Fig. 76.)

Other common names.—Mandrake, wild mandrake, American mandrake, wild lemon, ground lemon, hog apple, devil's apple, Indian apple, raccoon berry, duck's-foot, umbrella plant, vegetable calomel.

Habitat and range.—The mayapple is a native plant found in low woods, usually growing in patches, from western Quebec to Minnesota and south to Florida and Texas.

Description.—A patch of mayapple is easily distinguished from afar by the smooth, dark-green foliage and the even stand, which makes it conspicuous in the woodland. It is an erect plant about 1 foot in height with only two leaves, which are circular in outline but with five to seven lobes, the latter being two cleft. The leaves, which are sometimes a foot in diameter, are borne on long leafstalks which are fixed to the center of the leaves, giving them an umbrellalike appearance. The waxy white flower, about 2 inches in diameter, is produced in May on a short stout stalk between the two leaves. The fruit which follows is about 2 inches in length, lemon shaped, green at first, then yellow.

Part used.—The rootstock, collected late in September or October. In reasonably constant demand.

MAYPOP

Passiflora incarnata L. (Fig. 77.)

Other common names.—Passionflower, passion vine

Habitat and range.—This species of maypop grows in dry soil or thickets from Virginia to Missouri and south to Florida and Texas.

Description.—This plant is a smooth vine with finely hairy stems climbing to a height of 10 to 30 feet. Its smooth or somewhat hairy leaves, 3 to 5 inches broad, consist of three oval or egg-shaped lobes with finely toothed margins. The flowers, which appear from May to July, are solitary and are characterized by a lavender and purple or pink and purple fringe 1½ to 2 inches broad. The *plant produces smooth, yellow, many-seeded, edible fruit almost 2 inches long*, called maypops.

Part used.—The herb. In reasonably constant demand.

FIGURE 77.—Maypop (*Passiflora incarnata*)

FIGURE 78.—Moonseed (*Menispermum canadense*)

MOONSEED

Menispermum canadense L. (Fig. 78.)

Other common names.—Canada moonseed, menispermum, yellow parilla, Texas sarsaparilla, yellow sarsaparilla, vine maple.

Habitat and range.—*Moonseed is usually found along streams in woods*, climbing over bushes, its range extending from Canada to Georgia and Arkansas.

Description.—This woody climber reaches a length of from 6 to 12 feet, the round, rather slender stem bearing very broad, slender-stalked leaves which are from 4 to 8 inches wide, roundish in shape, and resembling the leaves of some of the maples. In July the loose clusters of small, yellowish or greenish-white flowers are produced, followed in September by bunches of black 1-seeded fruit, covered with a bloom and very much resembling grapes.

Part used.—The rootstock, collected in autumn. In limited demand only.

MULLEIN

Verbascum thapsus L. (Fig. 79.)

Other common names.—Common mullein, great mullein, mullein dock, velvet dock, Aaron's-rod, Adam's-flannel, old-man's-flannel, blanket leaf, bullock's lungwort, cow's lungwort, clown's lungwort, candlewick, feltwort, flannel-leaf, hare's-beard, velvet plant.

Habitat and range.—Mullein is a weed found in fields, pastures, along roadsides, and in waste places, its range extending from Maine to Minnesota and southward. It is also spreading in the Western States.

Description.—This plant is easily recognized by its tall, straight stem, its large felty or flannellike leaves, and its long, dense spike of yellow flowers. During the first year it produces only a rosette of downy leaves followed from June to August of the second year by the long flowering stalk. The densely hairy, erect stem sometimes reaches a height of 7 feet. The thick, felty leaves are from 4 to 6 inches in length and, with the exception of the basal ones, are stemless.

Part used.—The flowers and leaves, the former collected when fully opened. In limited demand only.

FIGURE 79.—Mullein (*Verbascum thapsus*)

NARROW DOCK

Rumex crispus L. (Fig. 80.)

Other common names.— Yellow dock, rumex, curled dock, sour dock.

Habitat and range.—This troublesome weed is now found throughout the United States, in cultivated as well as in waste ground, among rubbish heaps, and along roadsides.

Description.—Narrow dock has a deep spindle-shaped root from which arises an erect, angular, and furrowed stem, attaining a height of from 2 to 4 feet. The stem is branched near the top and is leafy, bearing numerous, long, dense clusters formed by drooping groups of inconspicuous, green flowers arranged in circles around the stem. These are followed by the fruits, which are in the form of small triangular nuts like buckwheat grains, surrounded by three very small veiny leaves. As the clusters ripen they become rusty brown. The lower leaves of the yellow dock are blunt, from 6 to 8 inches in length, with long stalks, while the upper leaves are narrower, only 3 to 6 inches in length, short stemmed or stemless. The root is large and fleshy, usually from 8 to 12 inches long, tapering or spindle shaped, with few or no rootlets.

Part used.—The root, collected late in the summer or autumn after the fruiting tops have turned brown. They are washed, either left entire or split lengthwise into halves or quarters, and carefully dried. In limited demand only.

FIGURE 80.—Narrow dock (*Rumex crispus*)

OREGON HOLLYGRAPE

Berberis aquifolium Pursh. (Fig. 81.)

Other common names.— Oregon grape, Rocky Mountain grape, holly-leaved barberry, California barberry, *trailing mahonia.*

Habitat and range.—This shrub is native in woods in rich soil among rocks from Nebraska to the Pacific Ocean, but it is especially abundant in Oregon and northern California.

Description.—Oregon hollygrape is a low-growing shrub from 2 to 5 feet in height, resembling the holly of the Eastern States. The leaves are divided like those of an ash; the five to nine leaflets from 2 to 3 inches long and about 1 inch wide are evergreen, thick, leathery, smooth, and shining on the upper surface with marginal spines. The numerous small yellow flowers appear in April and May

and are borne in erect clusters. The fruit consists of a cluster of blue berries. The rootstock and roots are more or less knotty, about an inch or less in diameter, with tough yellow wood and brownish bark.

Other species.—The roots of *Berberis nervosa* Pursh, which is found in the same region, are sometimes collected with that of Oregon hollygrape.

Part used.—The bark, collected in autumn. In limited demand only.

FIGURE 81.—Oregon hollygrape (*Berberis aquifolium*)

FIGURE 82.—Peppermint (*Mentha piperita*)

PEPPERMINT

Mentha piperita L. (Fig. 82.)

Other common names.—American mint, brandy mint, lamb mint, lammint.

Habitat and range.—Peppermint is naturalized from Europe and is found in damp places from Nova Scotia to Minnesota and south to Florida and Tennessee. It is largely cultivated, principally in Indiana, Michigan, Oregon, Washington, and California, for the production of peppermint oil.

Description.—Peppermint propagates by means of its long, running roots from which are produced smooth, square stems from 1 to 3 feet in height, erect and branching. The leaves are from 1 to 2 inches long, about half as wide, pointed, and with sharply toothed margins. The plant is in flower from July to September. The small purplish blossoms are placed in circles around the stem, forming thick, blunt spikes.

Part used.—The leaves and flowering tops, for which there is a reasonably constant demand; collected as soon as the flowers begin to open and carefully dried. The production of peppermint oil by distillation of the cultivated herb is an extensive industry.[8] The wild form of the plant is not suitable for this purpose, the cultivated plant containing more and better oil.

PINKROOT

Spigelia marilandica L. (Fig. 83.)

Other common names.—Carolina pinkroot, Carolina pink, Maryland pink, Indian pink, starbloom, worm grass, wormweed, American wormroot.

Habitat and range.—This plant is found in rich woods from New Jersey to Florida and west to Texas and Wisconsin, but occurs principally in the Southern States. It is fast disappearing, however, from its native haunts.

[8] This industry is described in the following publication, which may be obtained free from the Office of Information, United States Department of Agriculture, on request: SIEVERS, A. F. PEPPERMINT AND SPEARMINT AS FARM CROPS. U. S. Dept. Agr. Farmers' Bul. 1565, 26 p., illus. 1929.

Description.—Pinkroot is an herb with a simple erect stem from 6 inches to 1½ feet high. The pointed leaves are stemless, from 2 to 4 inches long, and one-half to 2 inches wide. The rather showy flowers are produced from May to July in a 1-sided terminal spike. They are tube-shaped, narrowed below, and slightly contracted toward the top, where they terminate in five lance-shaped lobes. The outside and inside of the tube are bright scarlet and the lobes yellow.

The roots of other plants, especially that of the East Tennessee pinkroot (*Ruellia caroliniensis* (Walt.) Steud., syn. *R. ciliosa* Pursh), are often found mixed with the true pinkroot. The rootstock of this plant is larger and not as dark as that of *Spigelia marilandica*, and it has fewer and coarser roots.

Part used.—The rootstock, collected after the flowering period. In reasonably constant demand.

FIGURE 83.—Pinkroot (*Spigelia marilandica*)

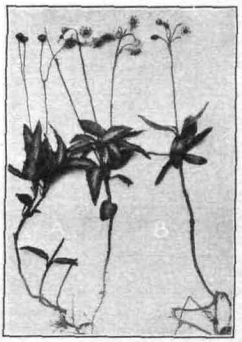

FIGURE 84.—Pipsissewa (A, *Chimaphila umbellata*; B, *C. maculata*)

PIPSISSEWA

(1) *Chimaphila umbellata* (L.) Barton; (2) *C. maculata* (L.) Pursh. (Fig. 84.)

Synonyms.—(1) *Pyrola umbellata* L., *Chimaphila corymbosa* Pursh; (2) *P. maculata* L.

Other common names.—(1) Common pipsissewa, prince's pine, pyrola, rheumatism weed, bitter wintergreen, ground holly, king's-cure, love-in-winter, noble pine, pine tulip; (2) striped pipsissewa, spotted pipsissewa, spotted wintergreen, spotted piperidge, ratsbane, dragon's-tongue.

Habitat and range.—Common pipsissewa is found in dry, shady woods, especially in pine forests, from New Brunswick to British Columbia and south to Georgia, Mexico, and California. Spotted pipsissewa occurs in similar places, but its range extends only to Minnesota and south to Georgia and Mississippi.

Description.—Common pipsissewa is a small herb a foot or less in height with a long, running, partly underground stem and shining, dark-green, evergreen, somewhat leathery leaves, 1 to 2 inches long, rather crowded toward the top of the stem. From about June to August its handsome, waxy-white or pinkish fragrant flowers are borne in nodding clusters from the top of the erect stem.

The spotted pipsissewa is readily distinguished from the former by its leaves, which are olive green marked with white along the midrib and veins.

Part used.—The leaves and the herb of both species. In reasonably constant demand.

POISON HEMLOCK

Conium maculatum L. (Fig. 85.)

Other common names.—Spotted parsley, spotted cowbane, poison parsley, St.-Bennet's-herb, bad-man's-oatmeal, wode-whistle, cashes, bunk, heck-how, poison root, spotted hemlock, spotted conium, poison snakeweed, beaver poison.

Habitat and range.—This poisonous weed is occasional in waste places and along roadsides, principally in the Eastern States.

Description.—Poison hemlock is a very dangerous weed, the close resemblance of the leaves to those of parsley often causing it to be mistaken for the latter with fatal results, all parts of the plant being extremely poisonous. It has a smooth, hollow, purple-spotted stem about 2 to 6 feet in height with much-branched, and large, parsleylike leaves. In June or July it produces showy, flat-topped clusters of small white flowers. The fruit, which ripens in August and September, is grayish green and about an eighth of an inch in length. The entire plant has a disagreeable, mouselike odor which is especially noticeable when the plant is bruised.

Part used.—The fruit, collected when fully developed but still green, carefully dried and stored in tight containers to protect it from air and light. It is of no value after it has been kept more than two years. The leaves are also used to some extent. In limited demand only.

FIGURE 85.—Poison hemlock (*Conium maculatum*)

FIGURE 86.—Pokeberry (*Phytolacca americana*)

POKEBERRY

Phytolacca americana L. (Fig. 86.)

Synonym.—*Phytolacca decandra* L.

Other common names.—Poke, pigeon berry, garget, scoke, pocan, coakum, Virginia poke, inkberry, red inkberry, American nightshade, cancer jalap, redweed.

Habitat and range.—Pokeweed, a common, familiar, native weed, is found in rich, moist soil along fence rows, fields, and uncultivated land from the New England States to Minnesota and south to Florida and Texas.

Description.—The stout, smooth stems of this plant, arising from a very large root, reach a height of from 3 to 9 feet, and are erect and branched, green at first, then reddish. The smooth leaves are borne on short stems and are about 5 inches long and 2 to 3 inches wide. The long-stalked clusters of whitish flowers, which appear from July to September, are from 3 to 4 inches in length, and the flowers are numerous and borne on reddish stems. The berries which follow and mature in about two months have a rich dark-purple color, are roundish with flattened ends, and contain shiny black seeds embedded in a rich crimson juice. Pokeweed has a very thick, long, fleshy, conical, branching root which is poisonous.

Part used.—The root, collected in late autumn, is sliced and dried; also, but to a less extent, the ripe berries. In reasonably constant demand.

PRICKLY-ASH

(1) *Zanthoxylum americanum* Mill.; (2) *Z. clava-herculis* L. (Fig. 87.)

Synonyms.—(1) *Xanthoxylum fraxineum* Willd.; (2) *X. carolinianum* Lam.; *Fagara clava-herculis* (L.) Small.

Other common names.—Common prickly-ash, northern prickly-ash, toothache tree, toothache bush, yellowwood, angelica tree, pellitory-bark, suterberry; (2) southern prickly-ash, Hercules-club, toothache tree, yellow Hercules, yellowthorn, yellowwood, yellow prickly-ash, prickly yellowwood, West Indian yellowwood, *sea ash, pepperwood, wild orange.*

Habitat and range.—The common, or northern, prickly-ash is common in woods, thickets, and along river banks from Virginia, Missouri, and Kansas northward to Canada, while the southern prickly-ash grows along streams from southern Virginia to Florida and west to Texas and Arkansas.

Description.—(1) *The common or northern prickly-ash is generally a shrub* from 10 to 12 feet high, rarely exceeding 25 feet. Its leaflets are from 5 to 11 in number and from 1½ to 2 inches long. The greenish-yellow flowers appear about April or May, before the leaves are borne in dense, stemless clusters from the axils of the branches. The branches have brown, cone-shaped prickles, and the *bark, leaves, and pods are highly aromatic.*

(2) The southern prickly-ash is taller than the northern species, but seldom attains a greater height than 45 feet. Its leaves consist of 5 to 17 leaflets from 1½ to 3 inches long, and its small, greenish flowers appear in June after the leaves are out, borne in large clusters at the ends of the branches. The entire tree is *furnished with sharp spines or prickles.*

Part used.—The bark of both species. In reasonably constant demand.

FIGURE 87.—Southern prickly-ash (*Zanthoxylum clava-herculis*)

FIGURE 88.—Prickly lettuce (*Lactuca scariola*)

PRICKLY LETTUCE

Lactuca scariola L. (Fig. 88.)

Synonym.—*Lactuca virosa* Amer. auth., not L.

Other common names.—Wild opium, wild lettuce.

Habitat and range.—The prickly lettuce occurs in fields and waste places *from Vermont to Georgia* and westward to the Pacific coast.

Description.—This is a bright-green plant, from 2 to 7 feet high, covered with a whitish bloom. It has an erect, rigid stem sometimes smooth throughout but at times hairy at the base, with numerous clasping, oblong lance-shaped leaves with finely toothed margins and spiny bristles along the under side of the

midrib. The lower leaves are at times 10 inches long and 3 inches wide, but the upper ones are much smaller. The pale yellow flowers, which appear in the early fall, occur in very numerous heads up to a third of an inch broad, having the feathery appearance of the ripe dandelion bloom, arranged in open clusters, each head consisting of 6 to 12 flowers.

Part used.—The leaves. In limited demand only.

PURPLESTEM ANGELICA

Angelica atropurpurea L. (Fig. 89.)

Synonym.—*Archangelica atropurpurea* Hoffm.

Other common names.—American angelica, great angelica, high angelica, purple angelica, masterwort.

Habitat and range.—Purplestem angelica is a native herb, common in swamps and damp places from Newfoundland to Delaware and west to Minnesota.

Description.—This strong-scented, tall, stout perennial reaches a height of from 4 to 6 feet. It has a smooth, dark purple, hollow stem 1 to 2 inches in diameter. The leaves are divided into three parts, each of which is again divided, with many broad leaflets. The lower leaves are sometimes 2 feet in width, but the upper ones are smaller, and all have very broad stalks. From June to July the greenish-white flowers are produced in somewhat roundish heads, which sometimes are 8 to 10 inches in diameter. The root is branched, from 3 to 6 inches long, and less than an inch in diameter. It has an aromatic odor, and the taste at first is sweetish and spicy, afterwards bitter. The fresh root is said to be poisonous.

Part used.—The root, dug in autumn. It must be carefully dried and preserved, because it is very subject to the attacks of insects. In reasonably constant demand.

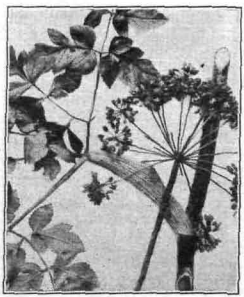

FIGURE 89.—Purplestem angelica (*Angelica atropurpurea*)

FIGURE 90.—Purple trillium (*Trillium erectum*)

PURPLE TRILLIUM

Trillium erectum L. (Fig. 90.)

Other common names.—Bethroot, trillium, red trillium, purple trillium, ill-scented trillium, birthroot, birthwort, bathwort, bathflower, red wake-robin, purple wake-robin, ill-scented wake-robin, red-benjamin, bumblebee root, daffydowndilly, dishcloth, Indian balm, Indian shamrock, nosebleed, squawflower, squawroot, wood lily, truelove. Many of these names are applied also to other species of trillium.

Habitat and range.—This is a native plant growing in rich soil in damp, shady woods from Canada south to Georgia, Alabama, and Missouri.

Description.—Purple trillium is a low-growing plant from 8 to 16 inches in height, with a rather stout stem having three leaves arranged in a circle near the

top. These are from 3 to 7 inches in length and of about the same width and are practically stemless. The flower, which appears from April to June, is borne singly at the end of the stem on a slender stalk. Its parts are arranged in threes which feature serves to identify the plant. The three petals, which are 1¼ inches long and one-half inch wide, are dark purple, pink, greenish, or white. The flower has an unpleasant odor. It is followed by a reddish berry.

Part used.—The root, collected toward the close of summer. In limited demand only.

QUACK GRASS

Agropyron repens (L.) Beauv. (Fig. 91.)

Other common names.—Dog grass, couch grass, quitch grass, quake grass, scutch grass, twitch grass, witch grass, wheatgrass, creeping wheatgrass, devil's grass, durfa grass, durfee grass, Dutch grass, Fin's grass, chandler's grass.

Habitat and range.—Like many of our weeds, quack grass was introduced from Europe and is now one of the worst pests with which the farmer has to contend, taking possession of cultivated ground and crowding out valuable crops. It occurs most abundantly from Maine to Maryland, westward to Minnesota and Missouri, and is spreading on farms on the Pacific slope, but is rather sparingly distributed in the South.

Description.—Quack grass is rather coarse, 1 to 3 feet high, and when in flower resembles rye or beardless wheat. Its smooth hollow stems, which are thickened at the joints, are produced from a long, creeping rootstock. The flowering heads are produced from July to September.

Part used.—The rootstocks, collected in the spring, are carefully cleaned, cut into small pieces about a fourth of an inch long, and dried. In reasonably constant demand.

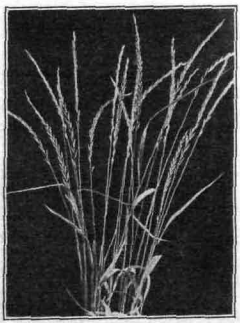

FIGURE 91.—Quack grass (*Agropyron repens*)

FIGURE 92.—Sassafras (*Sassafras variifolium*)

SASSAFRAS

Sassafras variifolium (Salisb.) Kuntze. (Fig. 92.)

Synonyms.—*Sassafras officinale* Nees and Eberm.; *S. sassafras* (L.) Karst.

Other common names.—Ague tree, saxifrax, cinnamonwood, saloop, smellingstick.

Habitat and range.—Sassafras is a native tree, growing in rich woods from southern Maine to Ontario, Michigan, and Kansas and south to Florida and Texas.

Description.—The sassafras occurs in the North as a shrub, but in the Southern States it sometimes attains a height of 100 feet. The leaves are variable in shape, some with three lobes and others with but one lobe on the side, shaped like a mitten. The yellowish green, fragrant flowers are borne in clusters which appear in early spring. Male and female flowers are borne on different trees. The

fruit, which ripens in September, is about the size of a pea, dark blue, 1-seeded, and is borne on a thick red stalk. All parts of the tree are aromatic.

Part used.—The bark of the root, which is in reasonably constant demand, collected in spring or autumn. The outer layer is discarded. The production of sassafras oil by distillation of the root and root bark is a small industry in the southeastern section of the country.[9]

SAW PALMETTO

Serenoa serrulata (Michx.) Hook. f. (Fig. 93.)

Synonym.—*Sabal serrulatum* Roem. and Schutt.

Other common names.—Palmetto, dark palmetto, fan palm.

Habitat and range.—This palm is found in sandy soil from North Carolina and Arkansas to Florida and Texas.

Description.—The saw palmetto is a fan-leaved, tufted palm with a creeping, branching stem 4 to 8 feet long. The bright-green, fan-shaped leaves with 15 to 30 divisions are roundish in outline and are borne on slender stalks edged with spines. The flower spike is thickly hairy, considerably shorter than the leaves, and the flowers are small and whitish. The fruit is from one-half to 1 inch in length, 1-seeded like an olive, reddish brown or blackish brown, and smooth but somewhat wrinkled in drying.

Part used.—The fruit, usually referred to as the berries. The entire cluster is cut when most of the fruits are ripe. These are shaken off and dried on racks or tables. When still fresh they are not readily injured by rain, but if partially dried out they will absorb moisture which is not easily removed. It is best, therefore, to protect them from rain, which will also assure a more uniformly colored product. In reasonably constant demand.

FIGURE 93.—Saw palmetto (*Serenoa serrulata*)

FIGURE 94.—Seneca-snakeroot (*Polygala senega*)

SENECA-SNAKEROOT

Polygala senega L. (Fig. 94.)

Other common names.—Senega snakeroot, Seneca root, rattlesnake-root, mountain flax.

Habitat and range.—This native plant is found in rocky woods and hillsides from New Brunswick and western New England to Minnesota and the Canadian Rocky Mountains, and south along the Allegheny Mountains to North Carolina and west to Missouri.

Description.—The root of this plant sends up a number of smooth, slender, erect stems (as many as 15 or 20 or more), sometimes slightly tinged with red, from 6 inches to a foot in height, and generally unbranched. The lance-shaped, stemless leaves are thin in texture and from 1 to 2 inches long. The flowering spikes are borne in May and June on the ends of the stems and consist of rather crowded, small, whitish, insignificant flowers. The lower flowers develop first and have already fruited when the upper flowers open.

A modified form of Seneca-snakeroot occurring in the North Central States is distinguished by its taller stems and broader leaves.

Part used.—The root, collected in autumn. In reasonably constant demand.

[9] SIEVERS, A. F. Op. cit. (See footnote 4.)

SKUNKCABBAGE

Spathyema foetida (L.) Raf. (Fig. 95.)

Synonym.—*Symplocarpus foetidus* (L.) Nutt.

Other common names.—Skunkweed, polecat weed, swamp cabbage, meadow cabbage, collard, fetid hellebore, stinking poke, pockweed.

Habitat and range.—Swamps and other wet places from Canada to Florida, Iowa, and Minnesota abound with this ill-smelling herb.

Description.—Skunkcabbage is a curious plant, the most striking characteristic of which is its rank, offensive odor. It is one of the very earliest of spring flowers, appearing in February and March. The hood-shaped flower, which appears before the leaves, is oddly shaped and is not easily described, but its form is well shown in the illustration. The edges of the leaf are rolled inward, hiding the spadix inside, which is roundish and completely covered with numerous, dull-purple flowers. The leaves, which appear after the flower, are numerous and very large, about 1 to 3 feet in length and about 1 foot in width. The rootstock and root when bruised have the characteristic odor of the plant.

Part used.—The rootstock with the roots, collected early in spring after the flower appears or after the seeds have ripened. It should be dried either in its entire state or deprived of its roots and sliced crosswise. It loses its value with age and should not be kept longer than one year. In limited demand only.

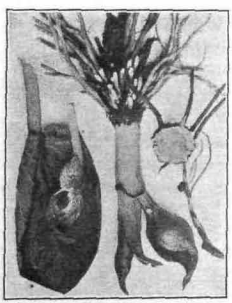

FIGURE 95.—Skunkcabbage (*Spathyema foetida*)

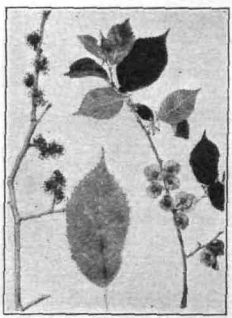

FIGURE 96.—Slippery elm (*Ulmus fulva*)

SLIPPERY ELM

Ulmus fulva Michx. (Fig. 96.)

Other common names.—Moose elm, red elm, Indian elm, rock elm, sweet elm.

Habitat and range.—This tree is native in woods, along streams, and on hills from Quebec to North Dakota and south to Florida and Texas. It is more common in the western part of its range.

Description.—The usual height of the slippery elm is from 40 to 50 feet, with a trunk about 2½ feet in diameter. In open woods and fields it is spreading and irregular in growth, but in dense woods it grows tall and straight, branching some distance from the ground. The bark is very rough, even the small branches are rough, and the twigs are furnished with rough hairs. The rather large leaves, which are from 4 to 8 inches long, are supported by short, downy stalks. The small, bell-shaped flowers appear in dense clusters in early spring, before the leaves, and are followed by flattened and circular winged fruits. Each fruit consists of a single seed surrounded by a thin, winged margin, which aids its dispersion by the wind.

Part used.—The inner bark. The whole bark is shaved from the tree, and after the outer bark is removed the inner portion is dried, usually under pressure so that it will remain flat. In reasonably constant demand.

SMOOTH HYDRANGEA

Hydrangea arborescens L. (Fig. 97.)

Other common names.—Wild hydrangea, sevenbark.

Habitat and range.—Hydrangea frequents rocky river banks and ravines from the southern part of New York to Florida and westward to Iowa and Missouri, being especially abundant in the valley of the Delaware and southward.

Description.—Hydrangea is a shrub 5 to 6 feet high with weak twigs, slender leaf stems, and thin leaves, the latter 3 to 6 inches long, oval or heart-shaped, and sharply toothed. The flowers, which are small and greenish white, are produced from June to July in loose, broad clusters. Sometimes the plant will flower a second time early in the fall. The stem has a peculiar tendency to peel off in several successive layers of thin, different-colored bark, hence the name "seven-bark." The root is roughly branched and when fresh is very juicy, but when dry it is very hard and tough.

Part used.—The root, collected in autumn. On account of its toughness when dry the root should be cut in short pieces while fresh and then dried. In reasonably constant demand.

FIGURE 97.—Smooth hydrangea (*Hydrangea arborescens*)

FIGURE 98.—Smooth sumac (*Rhus glabra*)

SMOOTH SUMAC

Rhus glabra L. (Fig. 98.)

Other common names.—Mountain sumac, upland sumac, scarlet sumac, sleek sumac, white sumac, Pennsylvania sumac, shoemake, vinegar tree.

Habitat and range.—Smooth sumac occurs in dry soil thickets and waste grounds from Nova Scotia to British Columbia and south to Florida, Mississippi, and Arizona.

Description.—Although sometimes attaining the height of a small tree, the smooth sumac is more frequently found as a rather handsome shrub 2 to 12 feet high, with smooth, brownish-gray trunk and branches. Its leaves are very long, from 1 to 3 feet, and consist of from 11 to 31 leaflets, each leaflet being about 2 to 4 inches in length and about half as wide, lance-shaped, pointed, sharply toothed and whitened beneath. From June to August the plant bears greenish yellow flowers in dense pyramidal clusters at the ends of the branches. These are followed by roundish, flattened fruits or berries, covered with short, crimson hairs. Each fruit contains a smooth, 1-seeded stone.

Part used.—The leaves, bark, and berries, the latter being gathered while the downy covering is still on them, which gives the berries their sour taste. In limited demand only.

SNAKEROOT

(1) *Aristolochia serpentaria* L. (fig. 99); (2) *A. reticulata* Nutt.

Other common names.—(1) Virginia snakeroot, Virginia serpentaria, serpentary, snakeweed, pelicanflower, snagrel, sangrel, sangree-root; (2) Texas snakeroot, Texas serpentaria, Red River snakeroot.

Habitat and range.—Virginia snakeroot is found in rich woods from Connecticut to Michigan and southward, principally among the Alleghenies, and Texas snakeroot occurs in the Southwestern States, growing along river banks from Arkansas to Louisiana.

Description of Virginia snakeroot.—This plant is nearly erect, the slender, wavy stem sparingly branched near the base growing usually to about a foot in height, sometimes, however, even reaching 3 feet. It has thin leaves, heart-shaped at the base and pointed at the apex, about 2½ inches long and from 1 to 1¾ inches wide. The dull-brown, somewhat leathery flowers are produced individually from near the base of the plant on slender stems. The fruit is round, about half an inch in diameter, and contains numerous seeds. Serpentaria has a short rootstock with many thin, branching, fibrous roots. The rootstock has a very agreeable, aromatic, camphorlike odor and a warm, bitterish, camphoraceous taste.

Description of Texas snakeroot.—This plant has a very wavy stem with oval, heart-shaped, clasping leaves which are rather thick and marked with a network of veins. The entire plant is hairy, with numerous long, coarse hairs. The small densely hairy, purplish flowers are produced from the base of the plant. The rootstock of this species is larger and has fewer small roots than that of the Virginia snakeroot.

Part used.—The roots of both species, collected in autumn. In reasonably constant demand.

FIGURE 99.—Snakeroot (*Aristolochia serpentaria*)

FIGURE 100.—Sourwood (*Oxydendrum arboreum*)

SOURWOOD

Oxydendrum arboreum (L.) DC. (Fig. 100.)

Other common names.—Sorrel tree, sour gum, elk tree.

Habitat and range.—Sourwood is found in woods, Pennsylvania to Indiana and Alabama and Florida.

Description.—This is a smooth-barked tree reaching a maximum height of 60 feet with a trunk 15 inches in diameter. The pointed oblong or elliptic, finely and sharply toothed leaves are from 4 to 6 inches long and 1 to 3 inches wide. The small, white, waxlike flowers, produced in June and July, are borne in long, slender, 1-sided, clustered racemes. The reddish-brown wood is hard and heavy.

Part used.—The leaves. In limited demand only.

SPEARMINT

Mentha spicata L. (Fig. 101.)

Synonym.—*Mentha viridis* L.

Other common names.—Mint, brown mint, garden mint, lamb mint, mackerel mint, Our Lady's mint, sage of Bethlehem.

Habitat and range.—Like peppermint, the spearmint has also been naturalized from Europe and may be found in moist fields and waste places from Nova Scotia to Utah and south to Florida. It is also cultivated to some extent for the distillation of the oil, especially in Michigan and Indiana, and for domestic use it is a familiar garden plant.

Description.—Spearmint in its general characteristics resembles peppermint, but it is rather more vigorous in its growth, the lance-shaped leaves are generally stemless, and the flower spikes are narrow and pointed rather than thick and blunt.

Part used.—The dried leaves and flowering tops, collected before the flowers are fully developed. Spearmint is cultivated like peppermint for the production of oil, but on a less extensive scale.[10] In reasonably constant demand.

FIGURE 101.—Spearmint (*Mentha spicata*)

FIGURE 102.—Sweet birch (*Betula lenta*)

SWEET BIRCH

Betula lenta L. (Fig. 102.)

Other common names.—Black birch, cherry birch, spice birch, river birch, mahogany birch, mountain-mahogany.

Habitat and range.—This tree occurs in rich woodlands from Newfoundland to Ontario and south to Florida and Tennessee.

Description.—The sweet-birch tree attains a height of from 50 to 80 feet. The bark of the younger branches is a shiny, reddish brown, while that of the large trunks is very thick and rough. The bark and leaves of the sweet birch are sweet and aromatic. The tree bears both male and female flowers in catkins which develop with or before the leaves about April or May.

Part used.—The bark, which contains a volatile oil similar to wintergreen oil, is used for medicinal and flavoring purposes. The distillation of birch oil is a small industry in the Eastern States.[11] In limited demand only.

[10] SIEVERS, A. F. Op. cit. (See footnote 8.)
[11] SIEVERS, A. F. Op. cit. (See footnote 4.)

SWEET CUDWEED

Gnaphalium obtusifolium L. (Fig. 103.)

Synonym.—*Gnaphalium polycephalum* Michx.

Other common names.—Fragrant life everlasting, sweet balsam, white balsam, feather-weed, rabbit-tobacco.

Habitat and range.—This plant grows in dry, mostly open places from Nova Scotia to Manitoba and south to Florida, Kansas, and Texas.

Description.—Sweet cudweed, which is better known in the drug market as life everlasting, is a fragrant herb 1 to 3 feet high, white-woolly nearly throughout, with an erect stem, simple or branched above. The leaves are narrow, one-sixth to one-third of an inch wide, and 1 to 3 inches long, dark green above and densely white-woolly underneath. The flowers, produced about August to September, are borne in numerous barely crowded heads consisting of one to five individual flowers.

Part used.—The herb. In limited demand only.

FIGURE 103.—Sweet cudweed (*Gnaphalium obtusifolium*)

FIGURE 104.—Sweetfern (*Comptonia peregrina*)

SWEETFERN

Comptonia peregrina (L.) Coulter. (Fig. 104.)

Synonyms.—*Comptonia asplenifolia* Gaertn.; *Myrica asplenifolia* L.

Other common names.—Ferngale, fern bush, meadow fern, shrubby fern, Canada sweetgale, spleenwort bush, sweet bush, sweet ferry.

Habitat and range.—Sweetfern is usually found on hillsides, in dry soil, from Canada to North Carolina and west to Indiana and Saskatchewan.

Description.—Sweetfern is a shrub from 1 to 3 feet high with slender, erect, or spreading branches and reddish-brown bark. The thin, narrow leaves are from 3 to 6 inches long, from one-fourth to one-half an inch wide, deeply divided into many lobes and in general resembling the leaves of a fern. Both male and female flowers are produced. The former are borne in cylindrical catkins in clusters at the ends of the branches and the latter in egg-shaped catkins. The whole plant has a spicy, aromatic odor, which is more pronounced when the leaves are bruised.

Part used.—The entire plant, especially the leaves and tops. In limited demand only.

SWEETFLAG

Acorus calamus L. (Fig. 105.)

Other common names.—Sweet cane, sweet grass, sweet myrtle, sweet rush, sweet sedge, sweet segg, sweetroot, cinnamon sedge, myrtle flag, myrtle grass, myrtle sedge, beewort.

Habitat and range.—The plant frequents wet and muddy places and borders of streams from Nova Scotia to Minnesota and southward to Florida and Texas. It is often partly immersed in water.

Description.—The swordlike leaves of the sweetflag resemble those of other flags so much that the plant is difficult to distinguish except when it is in flower. There are reports of children having been poisoned by the rootstock of the blueflag or poison flag through mistaking that plant for the sweetflag on account of the similarity of the leaves. The pointed, sheathing leaves are from 2 to 6 feet in height and about 1 inch in width. The small greenish-yellow flowers which appear from May to July are borne in a fleshy spike about 3 inches long. The long creeping rootstocks are thick and fleshy, somewhat spongy, and have numerous rootlets. They have an agreeable aromatic odor and a pungent, bitter taste which are retained after drying.

Part used.—The *rootstock, collected in early spring or late in autumn.* It must be thoroughly freed from dirt, the rootlets removed, and then carefully dried. It deteriorates with age and is subject to the attacks of worms. In limited demand only.

FIGURE 105.—Sweetflag (*Acorus calamus*)

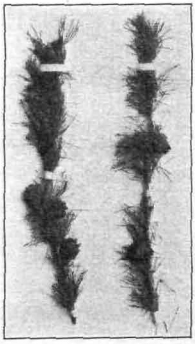

FIGURE 106.—Tamarack (*Larix laricina*)

TAMARACK

Larix laricina (DuRoi) K. Koch. (Fig. 106.)

Synonym.—*Larix americana* Michx.

Other common names.—American larch, black larch, red larch, hackmatack.

Habitat and range.—This tree frequents swamps and moist places from Canada south to New Jersey, Indiana, and Minnesota.

Description.—The tamarack, a slender tree with horizontally spreading branches, sometimes reaches a height of 100 feet. The pale-green leaves, which have a feathery appearance early in spring, are very slender and needle shaped, from 20 to 40 being together in a bundle, similar to the manner in which pine needles grow. Unlike the pine, however, the tamarack loses its leaves upon the approach of winter. Male and female flowers are produced, the latter developing into small, erect cones. The bark is thin and close, becoming scaly with age.

Part used.—The bark. In limited demand only.

TANSY

Tanacetum vulgare L. (Fig. 107.)

Other common names.—Tanacetum, bitter buttons, ginger plant, parsley fern, scented fern, English cost, hindheal.

Habitat and range.—*This is a garden plant introduced from Europe and now* escaped from cultivation, occurring as a weed along waysides and fences from New England to Minnesota and southward to North Carolina and Missouri.

Description.—Tansy is a strong-scented herb with finely divided, fernlike leaves and yellow, buttonlike flowers. It has a stout, somewhat reddish, erect stem, usually smooth, 1½ to 3 feet high, and branching near the top. The entire leaf is about 6 inches long and is divided almost to the center into about seven pairs of segments or lobes which are again divided into smaller lobes having saw-toothed edges, thus giving the leaf a somewhat fernlike appearance. The roundish, flat-topped, buttonlike, yellow flower heads are produced in terminal clusters from about July to September. The plant contains a volatile oil which is poisonous.

Part used.—The leaves and flowering tops, for which there is a reasonably constant demand, collected at the time of flowering. The volatile oil is distilled from the plant on a commercial scale in Michigan and Indiana.[12]

FIGURE 107.—Tansy (*Tanacetum vulgare*)

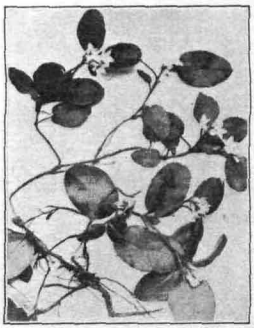

FIGURE 108.—Trailing-arbutus (*Epigaea repens*)

TRAILING-ARBUTUS

Epigaea repens L. (Fig. 108.)

Other common names.—Gravel plant, Mayflower, shadflower, ground laurel, mountain pink, winter pink.

Habitat and range.—*Trailing-arbutus spreads out on the ground in sandy* soil, being found from Newfoundland to Michigan and Saskatchewan and south to Kentucky and Florida.

Description.—This plant, generally referred to in the drug trade as gravel plant but more popularly known as "trailing-arbutus," spreads on the ground with stems 6 inches or more in length. It has rust-colored, hairy twigs bearing leathery, evergreen leaves from 1 to 3 inches long and about half as wide. The flower clusters, *which appear from March to May, consist of fragrant,* delicate, shell-pink, waxy blossoms.

Part used.—The leaves, gathered at flowering time. In limited demand only.

[12] SIEVERS, A. F. Op. cit. (See footnote 4.)

TURTLEHEAD

Chelone glabra L. (Fig. 109.)

Other common names.—Balmony, white turtlehead, turtle bloom, fishmouth, *codhead, salt-rheum weed, snakehead, bitter herb, shellflower.*

Habitat and range.—This native plant grows in swamps and along streams *from Newfoundland to Manitoba and south to Florida and Kansas.*

Description.—Turtlehead is an erect, slender herb with a 4-angled stem 1 to 4 *feet in height and short-stemmed, sharp-toothed leaves from 3 to 6 inches in* length. The flower clusters, which are produced in late summer or early fall, consist of showy, whitish or pinkish flowers about an inch in length, resembling in form the head of a turtle or a snake.

Part used.—The herb, especially the leaves, collected during the flowering period. In reasonably constant demand.

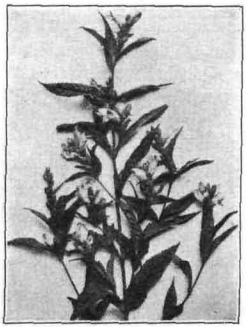

FIGURE 109.—Turtlehead (*Chelone glabra*)

FIGURE 110.—Twinleaf (*Jeffersonia diphylla*)

TWINLEAF

Jeffersonia diphylla (L.) Pers. (Fig. 110.)

Other common names.—Jeffersonia, rheumatism root, helmetpod, ground-squirrel pea, yellowroot.

Habitat and range.—Twinleaf inhabits rich shady woods from New York to Virginia and westward to Wisconsin.

Description.—Twinleaf is only about 6 or 8 inches in height when in flower, but reaches a height of 18 inches at the fruiting stage. The long-stemmed, smooth leaves are almost completely divided into two leaflets and arise directly from the base of the plant. The white flowers measuring about 1 inch across, which appear early in spring, are borne singly on a slender stalk arising from the root and are followed by a leathery, somewhat pear-shaped capsule containing many seeds. Twinleaf has a thick, knotty, yellowish-brown, horizontal root-stock with many fibrous, much-matted roots.

Part used.—The rootstock, collected in autumn. In limited demand only.

UPLAND COTTON

Gossypium hirsutum L. (Fig. 111.)

Species.—American upland cotton is the type most commonly cultivated in the South, from Virginia to Oklahoma and Texas, New Mexico, Arizona, and California; and this, with its hundred or more recognized horticultural varieties, belongs to one species, namely, *Gossypium hirsutum* L., and not to *G. herbaceum*, as was at one time supposed.

Description.—The cotton plant is found only in the South and Southwest, where it is so well known that a description of the plant is unnecessary.

Part used.—The bark of the root. The roots are taken up late in the fall, but before frost, are washed, and the bark is removed with knives and dried. In reasonably constant demand.

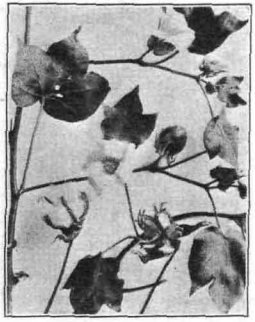

FIGURE 111.—Upland cotton (*Gossypium hirsutum*)

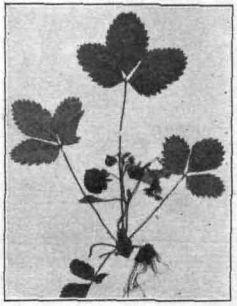

FIGURE 112.—Virginia strawberry (*Fragaria virginiana*)

VIRGINIA STRAWBERRY

Fragaria virginiana Duchesne. (Fig. 112.)

Other common names.—Scarlet strawberry.

Habitat and range.—This wild form of strawberry is found in dry soils from Newfoundland to South Dakota, Florida, and Oklahoma.

Description.—The Virginia strawberry is a small, rather stout, dark-green, hairy herb growing from a thick rootstock which sends out long, stout runners. The leaves, consisting of three thick, broadly oval, toothed leaflets, grow directly from the rootstock, the leaf stems being erect and from 2 to 6 inches long. The flowers and fruit bear much resemblance to the cultivated strawberry, but the fruit is much smaller.

Part used.—The leaves. In limited demand only.

WAHOO

Euonymus atropurpureus Jacq. (Fig. 113.)

Other common names.—Burningbush, spindle tree, Indian arrowwood, bursting-heart, strawberry-tree, strawberry bush, American spindle tree, bitter ash, pegwood.

Habitat and range.—Wahoo is found in woods and thickets from Ontario and the eastern United States to Montana.

Description.—This shrub or small tree, which is from 6 to 25 feet in height, more often reaching only 10 feet, has an ashy gray bark and rather thin, pointed

leaves from 1½ to 5 inches in length and about half as wide. The purple flowers are produced in June in loose, slender-stemmed clusters of from 5 to 15 flowers each. The pale-purple fruit consists of four deeply cleft, flattened lobes. In autumn the capsules open and disclose the seed surrounded by a red, false seed coat, giving the bush a bright and showy appearance.

The name wahoo is applied indiscriminately to *Euonymus atropurpureus* and *E. americanus* L., the latter a low and trailing bush having roughened, crimson capsules, to which the name burningbush more properly belongs.

Part used.—The bark of the root and the stem. In reasonably constant demand.

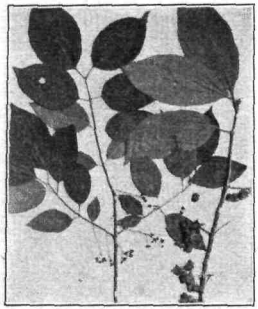

FIGURE 113.—Wahoo (*Euonymus atropurpureus*)

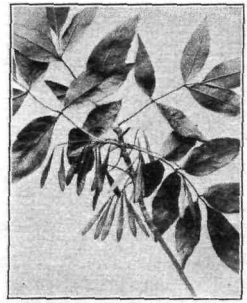

FIGURE 114.—White ash (*Fraxinus americana*)

WHITE ASH

Fraxinus americana L. (Fig. 114.)

Synonyms.—*Fraxinus alba* Marsh.; *F. acuminata* Lam.

Other common names.—Ash, American white ash, cane ash.

Habitat and range.—The white ash is native in rich woods, from Nova Scotia to Minnesota, south to Florida and Texas, but chiefly in the Northern States and Canada.

Description.—This tree usually attains a height of from 60 to 80 feet, but occasionally reaches 120 feet. The leaves, which appear late in the spring, are about 12 inches long and consist of from five to nine leaflets from 3 to 5 inches long and about half as wide. The small, whitish-green flowers which appear from April to June are arranged in loose clusters, and the fruits which follow are in the form of clustered, winged seeds each of which is from 1 to 3 inches long, narrow, flat, and 1-seeded.

Another species.—The black ash (*Fraxinus nigra* Marsh., syn. *F. sambucifolia* Lam.) is also a native, inhabiting swamps and wet woods from Canada to Virginia and Arkansas. Other names applied to it are hoop ash, swamp ash, water ash, and basket ash. It reaches a maximum height of 100 feet and has leaves about 16 inches long composed of 7 to 11 leaflets 3 to 6 inches long.

Part used.—The bark of the trunk and root of both species. In limited demand only.

WHITE MUSTARD

Brassica alba (L.) Boiss. (Fig. 115.)

Synonym.—*Sinapis alba* L.

Other common names.—Yellow mustard, charlock, kedlock, senvre.

Habitat and range.—White mustard is a weed found in cultivated fields and waste places, but it is not so abundant nor so widely distributed as the black mustard. It is cultivated on a commercial scale in California.

Description.—The white mustard grows from 1 to 2 feet in height. It is more or less hairy, with stiff, spreading hairs. The lower leaves, which are 6 to 8 inches in length, are deeply lobed, but the upper ones are lance shaped. The surface of the leaves is rough hairy. The light yellow flowers are borne in clusters at the ends of the stems from about June to September. The narrow, spreading seed pods which follow are rough hairy, contracted between seeds, and are about an inch in length, containing numerous roundish, pale-yellow seeds.

Part used.—The seed, the pods being collected when they are nearly ripe but not ready to burst open. After drying, the seed may be readily threshed or shaken out. In limited demand only.

FIGURE 115.—White mustard (*Brassica alba*)

FIGURE 116.—White oak (*Quercus alba*)

WHITE OAK

Quercus alba L. (Fig. 116.)

Other common names.—Stone oak, stave-oak.

Habitat and range.—The white oak is found in woods from Maine to Minnesota and south to Florida and Texas but is most abundant in the North Central and Middle Atlantic States.

Description.—This tree is usually from 60 to 80 feet high, but in dense woods it sometimes reaches a height of 150 feet. The trunk attains a diameter of 3 to 4 feet with many wide-spreading branches. The leaves are red and hairy when young, becoming smooth and thin when older. In autumn they turn a beautiful red. The leaves are 4 to 7 inches long, borne on short stems, and are usually divided into five to nine lobes. When the leaves appear the very small greenish or yellowish flowers are produced. The male flowers are borne in slender, usually drooping spikelike clusters and the female flowers singly. The acorns mature in the autumn.

Part used.—The bark, preferably that from trunks or branches 10 to 25 years old, which should be collected in the spring. The outer layer is first scraped off. In limited demand only.

WHITE PINE

Pinus strobus L. (Fig. 117.)

Other common names.—Northern pine, Weymouth pine, American white pine, *American* deal pine, soft deal pine, spruce pine.

Habitat and range.—The white pine native in this country occurs in woods from Canada south to Georgia and Iowa.

Description.—This large, handsome evergreen tree is sometimes 200 feet in height, with horizontal branches. The slender, pale-green leaves or needles are borne five in a sheath and are from 2 to 5 inches long. The flowers are inconspicuous, and the drooping, cylindrical, cigar-shaped, resinous cones are about 5 inches long and about 1 inch in thickness until in fall when the scales spread out to permit the seeds to fall out. It requires two seasons for the cones to mature.

Part used.—The inner bark. In reasonably constant demand.

FIGURE 117.—White pine (*Pinus strobus*)

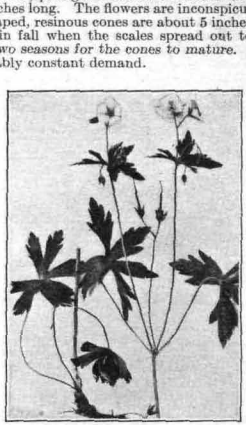

FIGURE 118.—Wild geranium (*Geranium maculatum*)

WILD GERANIUM

Geranium maculatum L. (Fig. 118.)

Other common names.—Crane's-bill, spotted crane's-bill, wild crane's-bill, stork's-bill, spotted geranium, alumroot, alum-bloom, chocolate-flower, crowfoot, dove's-foot, old-maid's-nightcap, shameface.

Habitat and range.—Wild geranium flourishes in low grounds and open woods from Newfoundland to Manitoba and south to Georgia and Missouri.

Description.—This plant, although generally only about a foot in height, will sometimes reach a height of 2 feet. It is erect, usually unbranched, and hairy. The leaves, which are 3 to 6 inches wide, are deeply parted into three or five divisions, each of which is again cleft and toothed. The rose-purple, pale or violet-purple flowers, which appear from April to June, are borne in loose clusters and are from 1 to 1½ inches wide. The fruit capsule, which springs open when ripe, consists of five cells each containing one seed. The rootstock is 2 to 4 inches long, thick, with numerous branches and with scars showing the remains of stems of previous years. When dry it has a somewhat purplish color internally.

Part used.—The root, collected just before the flowering period. In limited demand only.

WILD-SARSAPARILLA

Aralia nudicaulis L. (Fig. 119.)

Other common names.—False sarsaparilla, Virginian sarsaparilla, American sarsaparilla, small spikenard, rabbitroot, shotbush, wild licorice.

Habitat and range.—Wild-sarsaparilla grows in rich, moist woods from Newfoundland west to Manitoba and south to North Carolina and Missouri.

Description.—This plant produces a single, long-stalked leaf and flowering stalk from a very short stem. The leafstalk is about 12 inches long and is divided at the top into three parts each bearing about five leaflets from 2 to 5 inches long.

The flowering stalk produces in May to June three flower clusters consisting of from 12 to 30 small greenish flowers followed later in the season by round purplish black berries. The *rootstock is rather long*, creeping, somewhat twisted, and possesses a very fragrant, aromatic odor and a warm, aromatic taste.

Other species.—The American spikenard (*Aralia racemosa* L.), known also as spignet, spiceberry, Indian root, petty-morrel, life-of-man, and old-man's root, is used for the same purpose as *A. nudicaulis*. It is distinguished from this by its taller form, its much-branched stem from 3 to 6 feet high, and very large leaves. The flowers are arranged in numerous clusters instead of only three, as in *A. nudicaulis*, and they appear several months later. The range of this species extends as far south as Georgia.

Part used.—The root, collected in autumn. In reasonably constant demand.

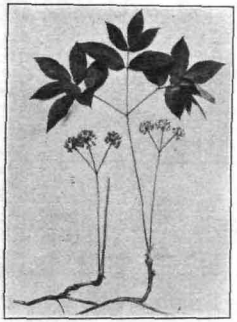

FIGURE 119.—Wild-sarsaparilla (*Aralia nudicaulis*)

FIGURE 120.—Wild yam (*Dioscorea villosa*)

WILD YAM

Dioscorea villosa L. (Fig. 120.)

Synonym.—*Dioscorea paniculata* Michx.

Other common names.—Dioscorea, colicroot, rheumatism root, devil's-bones.

Habitat and range.—Wild yam grows in moist thickets, trailing over adjacent shrubs and bushes, its range extending from Rhode Island to Minnesota and south to Florida and Texas. It is most common in the central and southern portions of the United States.

Description.—The wild yam is a vine growing to a length of 15 feet with a smooth stem and heart-shaped leaves from 2 to 6 inches long and 1 to 4 inches wide, hairy on the under side, borne on long, slender stems. The small, greenish-yellow flowers are produced from June to July, the male flowers being borne in drooping clusters about 3 to 6 inches long and the female flowers in drooping, spikelike heads. The fruit, which is a yellowish-green 3-lobed capsule, ripens in September and remains on the vine for some time during the winter. The rootstock runs horizontally underneath the surface of the ground. It is only about one-fourth to one-half inch in diameter.

Part used.—The rootstock, generally collected in autumn. In reasonably constant demand.

WINTERGREEN

Gaultheria procumbens L. (Fig. 121.)

Other common names.—Gaultheria, spring wintergreen, creeping wintergreen, aromatic wintergreen, spicy wintergreen, checkerberry, teaberry, partridgeberry, grouseberry, spiceberry, chickenberry, deerberry, groundberry, hillberry, ivyberry, boxberry, redberry tea, Canadian tea, mountain tea, ivory plum, chinks, drunkards, red pollom, rapper dandies, wax cluster.

Habitat and range.—This small native plant frequents sandy soils in cool, damp woods, especially under evergreen trees in Canada and the northeastern United States.

Description.—Wintergreen is an aromatic, evergreen plant with an underground or creeping stem producing erect branches not more than 6 inches in height, the lower part of which is smooth and naked, while near the ends are borne the crowded, leathery, evergreen leaves. From June to September the solitary, white, waxy, somewhat urn-shaped flowers are borne at the axils of the leaves. These are followed by roundish, somewhat flattened berries, which, after they ripen in autumn, are bright red, mealy, and spicy, and remain on the plant sometimes until spring. All parts of the plant are aromatic.

Part used.—The herb or leaves, collected in the autumn. The plant when distilled with steam yields oil of wintergreen. The distillation of this oil is an established industry in some localities where the plant grows in sufficient abundance.[12] In limited demand only.

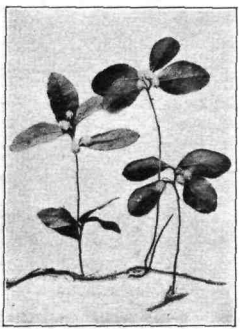

FIGURE 121.—Wintergreen (*Gaultheria procumbens*)

FIGURE 122.—Witch-hazel (*Hamamelis virginiana*)

WITCH-HAZEL

Hamamelis virginiana L. (Fig. 122.)

Other common names.—Snapping hazel, winterbloom, wych-hazel, striped alder, spotted alder, tobacco wood.

Habitat and range.—The home of this native shrub is in low damp woods from New Brunswick to Minnesota and south to Florida and Texas.

Description.—Witch-hazel, while it may grow to 25 feet in height, more frequently reaches a height of only 8 to 15 feet. It has a crooked stem and long, forking branches with smooth, brown bark. The leaves are from 3 to 5 inches long, thick, and borne on short stalks. A peculiar feature of the plant is the lateness of the threadlike, yellow flowers, which do not appear until late in autumn or in early winter after the leaves have fallen. The seed capsule does not mature until the following season, when it bursts open, scattering the shining black, hard seeds with great force and to a considerable distance.

Part used.—The leaves, twigs, and bark, collected in autumn. These contain a volatile oil the distillation of which for the production of witch-hazel extract is a well-developed industry in southern New England.[13] In reasonably constant demand.

[13] SIEVERS, A. F. Op. cit. (See footnote 4.)

WORMSEED

Chenopodium ambrosioides anthelminticum (L.) A. Gray. (Fig. 123.)

Synonym.—*Chenopodium anthelminticum* L.

Other common names.—Chenopodium, American wormseed, Jerusalem-oak.

Habitat and range.—Wormseed occurs in waste places from New England to Florida and westward to California.

Description.—This common weed has a much-branched stem from 2 to 3 feet in height and numerous, lance-shaped leaves, the lower ones 1 to 3 inches in length and the upper ones much smaller. The greenish flowers are produced from July to September in closely crowded spikes mixed with leaves and are followed by small, green, roundish fruits each of which contains a very small black seed. The entire plant has a strong, disagreeable odor due to the volatile oil which is present.

Part used.—The fruit, collected when ripe, and the volatile oil distilled from the fruit or from the entire plant. Wormseed is grown commercially mainly in central Maryland for the production of the oil.[14] In limited demand only.

FIGURE 123.—Wormseed (*Chenopodium ambrosioides anthelminticum*)

FIGURE 124.—Wormwood (*Artemisia absinthium*)

WORMWOOD

Artemisia absinthium L. (Fig. 124.)

Other common names.—Absinthium, absinth, madderwort, mingwort, old woman, warmot.

Habitat and range.—Wormwood, naturalized from Europe and mostly escaped from gardens in this country, is found in waste places and along roadsides from Newfoundland to New York and westward. It is cultivated in some localities, especially in Michigan and Indiana, for the production of the volatile oil [14] which it contains.

Description.—This shrubby, aromatic, much-branched plant grows from 2 to 4 feet in height. The growing shoots are silvery white with fine silky hairs; and the grayish-green leaves, which are from 2 to 5 inches long, are divided into small leaflets. The flower clusters, appearing from July to October, consist of numerous small, insignificant, drooping, yellow heads. The plant has an aromatic odor and an exceedingly bitter taste.

Part used.—The leaves and tops, which should be collected when the plant is in flower. In limited demand only.

[14] SIEVERS, A. F. Op. cit. (See footnote 4.)

YARROW

Achillea millefolium L. (Fig. 125.)

Other common names.—Millefolium, milfoil, thousand-leaf, thousand-leaf clover, gordoloba, green arrow, soldiers' woundwort, nosebleed, dog daisy, bloodwort, sanguinary, carpenter grass, old-man's-pepper, cammock.

Habitat and range.—Yarrow is very common along roadsides and in old fields, pastures, and meadows in the eastern and central United States and Canada. Closely related forms occur in the Western States.

Description.—This weed is from 10 to 20 inches high and has many finely divided, feathery dark-green leaves. From June to September the plant produces flat-topped panicles consisting of numerous small, white flower heads. It has a strong odor.

Part used.—The tops, collected when the plant is in flower. In limited demand only.

FIGURE 125.—Yarrow (*Achillea millefolium*)

FIGURE 126.—Yellowroot (*Xanthorhiza simplicissima*)

YELLOWROOT

Xanthorhiza simplicissima Marsh. (Fig. 126.)

Synonym.—*Zanthorhiza apiifolia* L'Hér.

Other common names.—Shrub yellowroot, southern yellowroot.

Habitat and range.—Yellowroot grows in woods from southwestern New York to Kentucky and Florida, chiefly in the mountains.

Description.—This slightly shrubby plant, 1 to 2 feet high, has compound slender-stemmed leaves 5 to 6 inches long clustered at the summit of the short stem. The leaves consist usually of five thin leaflets 1 to 3 inches long, with sharp, irregular teeth. The small, purplish-brown flowers are produced in spring, borne either singly or in clusters from terminal scaly buds. A characteristic of this plant is the bright-yellow color and bitter taste of its bark and long roots.

Part used.—The roots. In limited demand only.

YELLOW WILD-INDIGO

Baptisia tinctoria (L.) R. Br. (Fig. 127.)

Other common names.—Baptisia, indigo weed, yellow indigo, American indigo, yellow broom, indigo broom, clover broom, *horsefly weed, shoofly, rattlebush.*

Habitat and range.—This native herb grows on dry, poor land and is found from Maine to Minnesota and south to Florida and Louisiana.

Description.—Yellow wild-indigo is an erect, much-branched, very leafy plant about 2 to 3 feet in height with cloverlike leaves. The flowers are bright yellow, one-half inch in length, and are produced in numerous clusters from June to September. The root, which is round and fleshy, sending out branches and rootlets almost 2 feet in length, has a white interior and a thick, dark-brown bark. The bark root has a bitter, nauseous taste.

Other species.—A related species, said to possess similar properties, is *Baptisia alba* R. Br., called the white wild-indigo. This plant has white flowers and *is found in the Southern States and on the western Plains.*

Part used.—The herb and the root, the latter collected in autumn. In limited demand only.

FIGURE 127.—Yellow wild-indigo (*Baptisia tinctoria*)

FIGURE 128.—Yerba santa (*Eriodictyon californicum*)

YERBA SANTA

Eriodictyon californicum (Hook. and Arn.) Greene. (Fig. 128.)

Synonym.—*Eriodictyon glutinosum* Benth.

Other common names.—Mountain balm, consumptive's weed,[15] bear's-weed, gum plant, tarweed.

Habitat and range.—Yerba santa is common on the Pacific coast along the coastal ranges from central California north to Oregon.

Description.—*This evergreen shrub, which reaches a height of from 3 to 4* feet, has a smooth stem which exudes a gummy substance. The narrow, dark-green, leathery leaves are from 3 to 4 inches in length and are covered with a resinous substance which makes them appear as if varnished. The rather showy, whitish, or pale-blue flowers are borne in clusters at the top of the plant.

Part used.—The leaves. In reasonably constant demand.

---

[15] *This is a popular but misleading name.*

INDEX

Page

Aaron's-rod 42
Abies canadensis 33
Absinth 65
Absinthium 65
Achillea millefolium 66
Acorus calamus 56
Adam's-flannel 42
Aesculus hippocastanum 36
Agropyron repens 49
Ague-bark 36
  grass 4
  tree 49
  root 4
  weed 16
Alten 25
Alder, American 33
  black 25
  common 33
  false 25
  green 33
  hazel 33
  notch-leaved 33
  red 33
  smooth 33
  speckled 33
  spotted 63
  striped 63
  swamp 33
  tag 33
  white 25
Aletris aurea 4
  farinosa 4, 22
  lutea 4
  obovata 4
Aletris 4
Alnus rugosa 33
  serrulata 33
Aloeroot 4
Alum-bloom 62
Alumroot 62
Amara dulcis 11
Amy-root 34
Angelica atropurpurea 48
Angelics, *American* 48
  great 48
  high 48
  purple 48
  purplestem 48
  tree 47
Anise, pickaway 36
Apocynum androsaemifolium 34
  cannabinum 34
Apple of Sodom 36
Aralia nudicaulis 62
  racemosa 63
Arborvitae 8
Archangel, *green* 17
  purple 17
Archangelica atropurpurea 48
Arctium minus 17
Arctostaphylos uva-ursi 10
Arisaema triphyllum 37
Aristolochia reticulata 53
  serpentaria 53
Arrowwood, Indian 28, 59
Artemisia absinthium 65
Arum 37
  three-leaved 37
Arum triphyllum 37
Asarabacca, broad-leaved 19
Asarum canadense 19
Asarum 19
Asclepias incarnata 18
  syriaca 18
  tuberosa 18
Ash 60
  American white 60
  basket 60

Page

Ash, bitter 59
  black 60
  cane 60
  common prickly 47
  flowering 30
  hoop 60
  northern prickly 47
  poison 30
  prickly 47
  pea 47
  southern prickly 47
  stinking 36
  swamp 60
  water 36
  water 60
  white 60
  wild 7
  yellow prickly 47
Aspidium filizmas 39
  marginale 39
Ass-ear 24
Assfoot 24
Asthma weed 40

Backwort 24
Bad-man's-oatmeal 46
Balm 8
  buds 9
  field 32
  garden 8
  Indian 48
  lemon 8
  mountain 67
  stinking 7
Balm-of-Gilead poplar 9
Balmony. See *Turtlehead.*
Balsam poplar 9
  swamp 55
  white 55
Bamboo greenbrier 9
Baptisia tinctoria 67
Baptisia 67
Barberry, California 43
  holly-leaved 43
Bardane 17
Basket ash 60
  fern 39
Basswood 6
  red 6
  yellow 6
Bast tree 6
Bathflower 48
Bathwort 48
Bayberry 10
  northern 10
Bearberry 10
  red 10
  tree 21
Bear corn 6
Bear's bilberry 10
  grape 10
  paw root 39
  weed 67
  whortleberry 10
Bearwood 21
Beaumont root 28
Beaver poison 46
Beetree 6
Beewort 56
Beggar's-buttons 17
Berberis aquifolium 44
  nervosa 44
Bethroot 48
Betony, Paul's 17
  wood 17
Betula lenta 54
Bindweed, blue 11

Page

Birch, black 54
  cherry 54
  mahogany 54
  river 54
  spice 54
  sweet 54
Birthroot 48
Birthwort 48
Bitter ash 59
  buttons 57
  herb 58
  nightshade 11
Bitterroot 34
Bitterweed 11
  American 4
  climbing 4
  false 4
  shrubby 4
Bitterweed 37
Bitterworm 16
Black birch 54
  cherry 11
  choke 11
  hazel 35
  hemp. See Hemp dogbane.
  mustard 12
  willow 13
Blackhaw 12
Blackroot 26
Blackwort 24
Bladder pod 40
Blanket leaf 42
Blazing-star 4, 22
Blessed thistle 13
Bloodroot 14
Bloodstanch 37
Bloodwort 66
Blowball 26
Blueberry root 14
Blue bindweed 11
  cohosh 14
  Mountain tea 29
  pimpernel 41
  vervain 15
Blueflag iris 15
Bog hop 16
  myrtle 16
  nut 16
  onion 37
Bogbean 16
Boneset 16
  wood 16
Bongay 36
Bowmansroot 26, 34
Boxberry 63
Brassica alba 60
  nigra 12
Brauneria angustifolia 27
Brawlins 10
Brier, bamboo 9
  sand 36
Brinton root 26
British tobacco 24
Brook bean 16
Broom, clover 67
  yellow 67
Brown dragon 37
Bruisewort 24
Buck bean. See Bogbean.
Buckthorn, cascara 21
Bugbane 6
  cohosh 23
Bugwort 6, 23
Bugleweed 17
  sweet 17
Buglewort 17
Bullbrier 9

Page

Bull nettle 46
Bullock's lungwort 42
Bull's-foot 24
Bumblebee root 48
Bunk 46
Burdock 17
Burningbush 59
Burren myrtle 10
Bursting-heart 59
Butterflyweed 18
Butternut 18
Butterweed 37
Button-snakeroot 19

Cabbage, meadow 51
swamp 51
Cabinet-cherry 11
Cadlock 12
Cammock 66
Canada-root 18
sweetgale 55
wildginger 19
Canadian tea 63
Cancer jalap 46
Candleberry 10
Candlewick 42
Cane ash 60
Cankerroot 32
Cankerwort 26
Carbenia benedicta 13
Cardus, blessed 13
spotted 13
Carduus benedictus 13
Carolina-jessamine 20
pink 44
pinkroot 44
vanilla 20
Carpenter grass 66
square 28
Carpenter's herb 17
Cascara buckthorn 21
Cascara sagrada. See Cascara buckthorn.
Cashes 46
Cataria 21
Catmint 21
Catnip 21
Catrup 21
Catwort 21
Cat's-foot 32
Caulophyllum thalictroides 14
Caulophyllum 14
Cedar, featherleaf 8
Indian 35
white 8
yellow 8
Celandine 22
garden 22
greater 22
Celastrus scandens 4
Chamaelirium luteum 4, 22
Chamaelirium 22
Chandler's grass 49
Charlock 60
Checkerberry 63
Chelidonium majus 22
Chelidonium 22
Chelone glabra 58
Chenopodium ambrosioides anthelminticum 65
anthelminticum 65
Chenopodium 65
Cherry, birch 54
black 11
cabinet 11
rum 11
whisky 11
wild 11
wild black 11
wood 5
Chickenberry 63
Chimaphila corymbosa 45
maculata 45
umbellata 45
Chinaroot, American 9
false 9
Chinks 63
Chionanthus virginica 30
Chittam wood 21
Chittembark 21

Page

cocolate-flower 62
coctaw-root 34
michaux racemosa 23
cinamon sedge 56
Cinnamonwood 49
Citronella horsebalm 23
Claywed 24
Cleats 24
Clover, marsh 16
Clown's lungwort 42
Cnicus benedictus 13
Coakum 46
Cockfoot 22
Cockle button 17
Codhead 58
Cohosh, black 23
blue 14
bugbane 23
Colicroot 4, 19, 63
Collard 51
Collinsonia canadensis 23
Collinsonia 23
Colt-herb 24
Coltsfoot 24
false 19
Colt's-tail 37
Comfrey 24
Comptonia asplenifolia 55
peregrina 55
Coneflower, hedgehog 27
pale purple 27
Conium maculatum 46
Conium, spotted 46
Consumptive's weed 67
Coonroot 14
Coptis trifolia 32
Coptis 32
Cornel, Florida 28
flowering 28
white 28
Cornelian tree, American 28
Cornus florida 28
Cornus 28
Cost, English 57
Cottagers 29
Cotton, American upland 59
upland 59
wild 34
Couch grass 49
Coughweed 31
Cough wort 24
Cowbane, spotted 46
Cow's lungwort 42
Cow's-tail 37
Crampbark tree 5
Cranberry, highbush 5
mountain 10
tree 5
upland 10
Cranberrybush, American 5
Crane's-bill 62
spotted 62
wild 62
Creashak 10
Creeping Charlie 32
wheatgrass 49
Crosswort 16
Crowberry 10
Crow corn 4
Crowfoot 62
Cuckold dock 17
Cudweed, sweet 55
Culvers-physic 26
root 26
Curcuma, Ohio 31
Curled dock 43
Cypripedium parviflorum 38, 39
pubescens 38, 39

Daddynut tree 6
Daffydowndilly 48
Daisy, Irish 26
Dandelion 26
Datura stramonium 38
Deal pine, American 61
soft 61
Deerberry 63
Deertongue. See Carolina vanilla.
Deerwood 35

Page

Devil's apple 38, 41
bit 4, 22
bite 6
bones 63
ear 37
grass 49
milk 22
trumpet 38
Dewtry 38
Digitalis purpurea 29
Digitalis 29
Dishcloth 48
Dioscorea paniculata 63
villosa 63
Dioscorea 63
Dock, cuckold 17
curled 43
dove 24
elf 27
flop 29
mullein 42
narrow
sour
velvet 2
yellow
Dogbane, hemp 3
Dogberry 7
Dog daisy 66
Dog grass 49
rowan tree 5
Dog's-finger 29
Dog's-tongue 20
Dogwood, American 28
Florida 28
flowering 28
swamp 36
Virginia 28
Doon-head-clock 26
Dove-dock 24
Dove's-foot 62
Dragon's-tongue 45
Dragon-turnip 37
Drunkards 63
Dryopteris filixmas 39
marginalis 39
Duck-retter 6
Duck's foot 41
Dulcamara 11
Dummyweed 24
Durfa grass 49
Durfee grass 49
Dutch grass 49
Dwale 11

Earth gall 6
Echinacea angustifolia 27
Echinacea 27
Elder, American 5
blows 5
flowers 5
horse 27
marsh 5
red 5
rose 5
sweet 5
water 5
white 5
Elecampane 27
Elf dock 27
Elfwort 27
Elk tree 53
Elm, Indian 51
moose 51
red 51
rock 51
slippery 51
sweet 51
Emetic herb 40
English cost 57
Epipana repens 57
Erigeron canadensis 37
Erigeron 37
Canada 37
Eriodictyon californicum 67
glutinosum 67
Eryngium 19
Eryngo 19
water 19
Euonymus americanus 60
atropurpureus 59