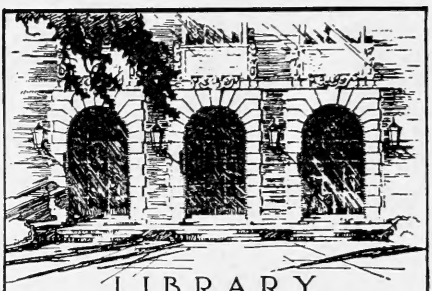

The

DRUG PLANTS OF ILLINOIS

LEO R. TEHON

ILLINOIS NATURAL HISTORY SURVEY

CIRCULAR 44

STATE OF ILLINOIS
ADLAI E. STEVENSON, *Governor*
DEPARTMENT OF REGISTRATION AND EDUCATION
NOBLE J. PUFFER, *Director*

The Drug Plants of Illinois

LEO R. TEHON

Drawings by KAY H. WADSWORTH

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The frontispiece is a reproduction of "The Mystic Book of Hypocrates," from a rare old engraving by Pierre Francois Bason (1723–1797), in the Fisher Collection of Alchemical and Historical Pictures in Pittsburgh, Pennsylvania. Bason's engraving is based on an original oil painting by David Teniers, Jr. (1610–1690). The engraving is reproduced here through courtesy of the Fisher Scientific Company.

As stated on the title page, the drawings of drug plants are the work of Mrs. Kay H. Wadsworth. The drawings of a drying shed and drying shelves are by Earl S. Perrine. The cover design is by Mrs. Olga K. Durham.

The Drug Plants of Illinois

LEO R. TEHON

ABOUT 900 plant species are used directly or yield some product employed in the American drug trade. Of this large number, about 350 grow as native, naturalized, or cultivated plants somewhere in the United States. No accurate estimate can be made of the amount of drug plants collected annually, because of variations in demand for individual kinds of plants and in the supplies of them available from year to year. The total in both pounds and money value is great.

To this total, Illinois is not at present one of the major contributors. However, significant amounts of crude drugs are collected in various parts, particularly the southern part, of the state. These collections find their way into the drug trade through local buyers and such principal markets as those in St. Louis, Missouri, Asheville, North Carolina, and Marion, Virginia.

Nearly 300 plant species used as drugs grow wild or are cultivated in Illinois. A few of these are rare. Many however, are common, even abundant, and constitute a natural resource of considerable potential value. There is opportunity for residents of the state to engage more actively than they do now in the collection of crude drugs and, thereby, to increase their incomes by small to large amounts. It is the purpose of this publication to encourage the use of this natural resource by furnishing instructions for collecting, drying, packing, and marketing crude drugs and by listing, describing, and picturing those kinds of plants which are demanded by the drug trade.

Collecting, Drying, and Marketing

What plants to collect.—Generally it is best for the beginner not to collect any and every drug plant that is available. For many drug plants, the demand is small and irregular, and is likely to be supplied by established collectors. To spend effort in collecting such plants may result in loss of the collector's time and effort, because of the possibility that what has been collected cannot be sold. Other plants, though always in large and regular demand, may from time to time bring so small a price that the money received from their sale will hardly cover the transportation cost which the collector must pay on them from his home to the market, and will leave him little or no cash return for the labor of collecting.

Before beginning the season's collecting, the prospective collector should write to one or more of the large firms that purchase crude herbs and roots and ask for want lists. Large purchasing firms issue periodical, usually monthly, lists of the crude drugs they wish to buy and give the price per

pound they are willing to pay for each kind, delivered at their warehouses. Such lists also state what drug plants are not wanted—a helpful feature to the collector, since he can then avoid collecting what he cannot sell. Most want lists also indicate what items the purchasing firm most desires to obtain.

Certain plants, for example ginseng, always bring high prices. These, if available in the collector's territory, may be gathered even in small quantities. However, since most plants bring only moderate prices, the collector should plan to collect plants that are available to him in quantity, concentrating on the collection of a number of selected plants which, want lists and other marketing information indicate, are likely to yield an adequate return for the time and labor expended in collecting and preparing them for sale.

Especially with experienced and reliable collectors, some large buying firms are often willing to contract beforehand to purchase either specified quantities or the full season's collections of specific kinds of crude drugs, thus assuring their own supply and to some extent protecting the collectors as to price. Unless a contract exists or a definite order has been given the collector, a buying firm can refuse to accept what is shipped to it; one large company reserves the privilege of taking not more than 1 ton of any one article or not over 100 dollars worth in total value, without previous contract.

General requirements.—While for certain plants special procedures are necessary, there are fundamental requirements that must always be observed in collecting and handling drug plants. These requirements may be listed as follows:

1. Collect at the time of year proper for each plant. The amount of effective medicinal material present in certain drug plants may vary with such factors as season, the age of the plant, and the stage in development or maturity of the plant. Generally, the plant or plant part should be collected when the active constituent is present in greatest amount:

a. Barks. As a rule, collect when shrubs or trees are "in sap," that is to say, in very late winter or early spring.

b. Herbs. Take usually in full flower, since they are then at their maximum of growth and will afford both the largest bulk and the largest amounts of medicinal principles.

c. Bulbs. Take either in fall or winter, when the plant is dormant, or in early spring, when growth is starting.

d. Roots. With a few notable exceptions, gather during the growing season, while the plants are green and active, and in the fall and winter, when the roots are filled with concentrated, stored materials. In general, the later roots are collected the better. They are often collected after the tops of the plants have died down but can still be seen and recognized.

2. Thoroughly dry, or "cure," collected material before offering it for sale. Some rules governing this drying are as follows:

a. Air-dry the material in circulating air and out of direct sunlight.

b. Speed the drying process sufficiently to prevent the development of molds, and, in many plants containing volatile oils, to prevent dissipation of these oils during slow drying. (*This rule does not apply if artificial heat is used.*)

c. Endeavor to retain in dried herb and leaf material as much of the natural green color as possible.

d. Cut large, fleshy roots and rhizomes into pieces to hasten drying. (*Ginseng is an exception to this rule.*)

3. See that all materials are clean and that they conform to the best standards for crude drug material. Roots and rhizomes should be washed clean of soil; blossoms should have a minimum of leaf and stem parts; herbs should be free of foreign material, clean and free of dust, and as little shattered and broken as possible; seeds should be clean, free of contaminating seeds, and free of pod, shell, and hull fragments.

4. Protect all dried material, during storage and prior to shipment, from becoming infested with insects or from being invaded by molds.

5. See that, when shipped, the materials are dry, free from insects, not moldy, and well packaged or baled.

6. Before the drug plant is collected, identify it beyond any possible doubt. This is extremely important, for the wrong plant material would, of course, be refused when offered for sale. Inexperienced collectors can submit sample material to firms purchasing crude drugs or obtain help from veteran collectors. In any event, a person intending to become a general collector should obtain some knowledge of the botanical characteristics of plants and learn to use botanical descriptions and illustrations in the identification of doubtful plants.

Herbs and leaves.—*Herbs* are generally understood as being the entire above-ground parts, including stems, branches, leaves, flowers and, at times, some fruit or seed. *Leaves* include only leaves and should be whole and free of stem fragments. It is of prime importance that herbs and leaves, when offered for sale, be of a bright, natural green color, free of mold, and thoroughly dry, and that they contain no hard stems or stem fragments. For retention of natural greenness and prevention of molding, the drying should not be too rapid and should be done in the shade or indoors, the material being spread in thin layers or hung in such a manner as to permit free circulation of air. Exposing of herbs and leaves to strong sunlight causes them either to fade unduly or to turn dark; also it may lessen the medicinal value. Herbs usually are cut at the point on the stem where whole, green, functioning leaves begin, the lower, hard, worthless part of the stem being discarded. Leaves must be entire, uninjured by insect or fungus attack, clean, green, and in prime vigor. Consequently, brown or dead leaves must never be taken, nor leaves ever gathered from the ground.

Roots.—*Roots* include the underground structures known as rhizomes, rootstocks, corms, bulbs, and tubers, as well as true roots. After being

collected, roots must be cleaned and dried. The cleaning must be thorough and include the removal of all tops. In general, roots bring higher prices if they are also cleaned of their fibrous rootlets, but there are exceptions to this rule which should be carefully noted. With the single exception of the rootstock of the male fern, which must not be washed, roots should be rinsed in clean water to remove all soil. When clean, they may be dried in the shade or indoors. To speed up the drying and prevent molding, all large roots *except those of ginseng* may be cut into slabs or sections. Some roots, for example those of burdock and pokeberry, are usually cut lengthwise into slabs, while other roots, elecampane and Indian turnip for example, may be sliced crosswise. After being dried, roots should be stored in a dry place to make certain they do not become moldy. In general, the storage period should be as short as possible. Some roots, those of bloodroot and dandelion for example, can be adversely affected by being stored improperly or for a long time. For this reason and others, purchasers of crude drugs urge the collectors to make frequent shipments of small lots rather than delayed shipments of large lots.

Barks from trunks.—*Trunk barks* peel most readily in the spring of the year, when "the sap is up," and they can be gathered easily then. Slippery elm bark must have all the outer, rough, corky part removed, that is, the bark must be *rossed* immediately after it is peeled from the tree; the inner part is then dried under pressure, to keep it flat. Heavy, rough barks, such as those of the oaks, may be rossed before being peeled or shaved from the trunks. Other barks may be gathered and dried directly. All trunk barks must be dried flat. Although some barks can be sold unrossed, most barks bring a higher price in the rossed condition. Barks, like most other crude drugs, must be thoroughly dried before being offered for sale.

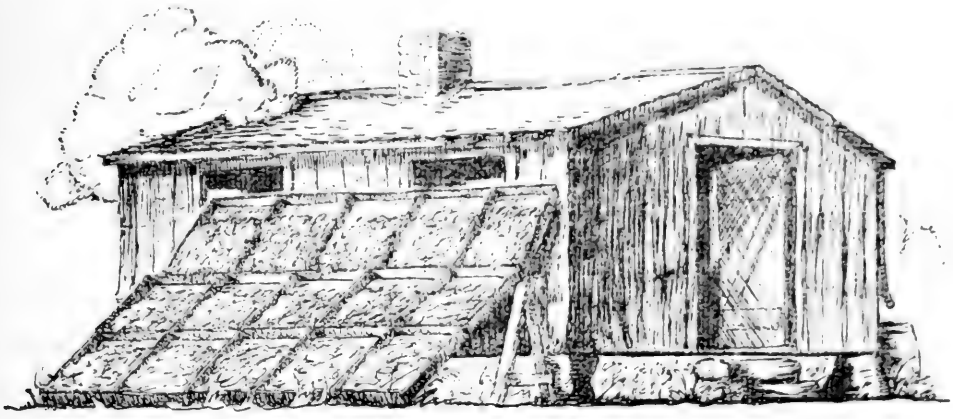
Barks from roots.—All *root barks* must be cleaned and dried; also, they must be completely free of the wood of the root.

Flowers.—*Flowers* are usually the whole flowers, though in the case of the Compositae flowering heads are gathered and in a few instances only certain parts, for example, the petals, are gathered. These, like all other plant parts, should be gathered clean, whole, and fresh. They must, as a rule, be dried with particular care to preserve the volatile oils for which they usually are gathered. They should be spread thinly on cloth- or wire-bottomed trays and dried indoors without artificial heat or with very carefully controlled, low artificial heat.

Fruits.—*Fruits* gathered as crude drugs consist of the whole fruit. Usually they are soft and juicy and, therefore, require particular care in drying. They must, of course, be clean, fresh, whole, and, with the exception of a few kinds, ripe. Usually they are dried in the open sunlight, after being spread in a thin layer on mesh-bottomed trays. They may also be dried in an oven, or kiln, at a temperature not exceeding 120 degrees F.

Seeds.—*Seeds* are generally understood to be the seeds alone, without any parts of the fruits in which they are borne. Seeds must, of course, be uncontaminated, clean, and ripe. They must also be well dried, or cured, and free of mold; otherwise they tend to heat and become moldy when in storage.

Drying methods.—For drying crude drugs, various kinds of equipment can be used, ranging from the very simple things needed for the handling of a few kinds of drug plants in small lots to the extensive and costly equip-



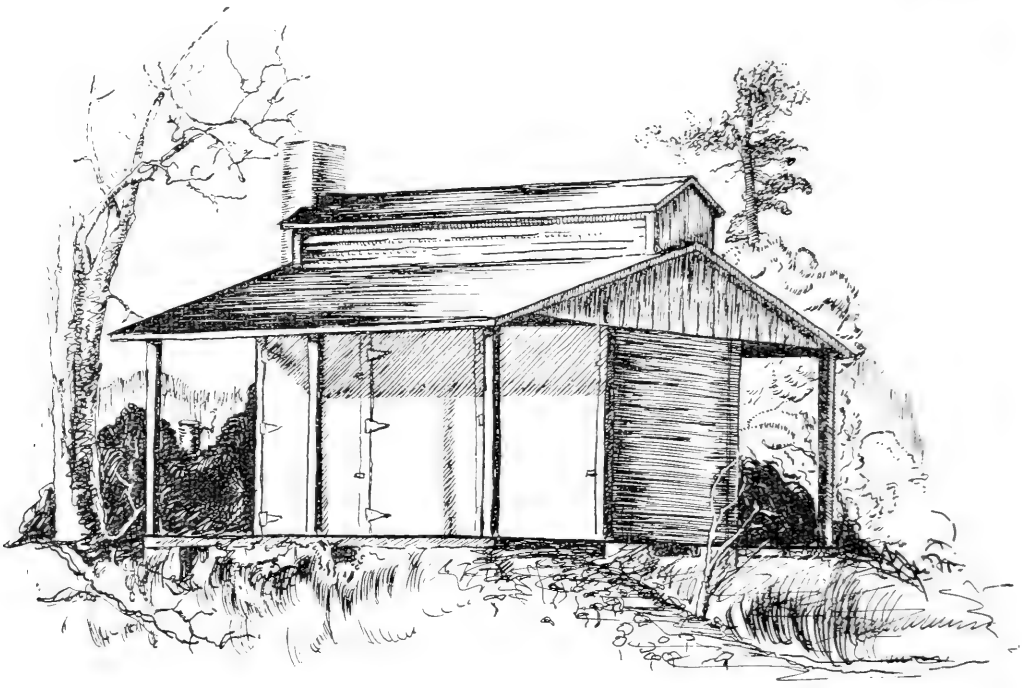
Drying drug plants in the open air. After the drug plants have been gathered, they are spread in thin layers in trays with wood sides and cloth or wire mesh bottoms. The loaded trays are then propped up so that air can circulate freely through them. They are placed where they will not be exposed to strong, direct sunlight throughout the day. Air drying permits the use of equipment that may be already available. (After United States Department of Agriculture Farmers' Bulletin 1231.)

ment necessary in handling many kinds in large lots. Drying is done by the use either of natural air temperatures and movements or of artificially heated and circulated air. Of the two methods, the artificial is better, if properly controlled and if the quantity of crude drug material handled is sufficient to justify the cost of the necessary equipment.

Air drying under natural conditions permits the use of equipment that may be already available and the exercise of some ingenuity. Roots, fruits, and other materials that may be dried in direct sunlight can be spread on clean boards, canvas, burlap, sheets, or paper on open ground, on shed roofs or drying floors exposed to the sun, or they can be spread in trays set in the open to face the sun. Herbs, leaves, and other parts that must not be exposed to direct sunlight can be spread on floors, cloth, or paper in shade furnished by large trees; they can be hung on wires in open sheds or in a well-ventilated part of a barn; or they can be spread on slat- or mesh-bottomed shelves or trays in drying cabinets or buildings erected for the purpose. Particularly in the drying of whole herbs, hanging them on wires is a convenient and effective method, as suitable places for the wires can be found easily. A good arrangement is to string the wires so that they are

about 2 feet apart vertically and 1 foot apart horizontally. Wire will accommodate 1 to 1½ pounds of green herb per linear foot.

Drying with artificial heat requires the construction of special equipment. Such equipment can range from small, oil-stove-heated or electrically heated chambers with space for 50 to 75 pounds of green herbs to furnace-heated buildings capacious enough to receive 1,000 pounds of green



A large, specially constructed drying house for drug plants. The fresh plants are spread on trays like those shown in the drawing on page 5, and the loaded trays are carried in through the doors and stacked one above another. A furnace in the basement supplies a continuous current of warm, dry air which absorbs moisture from the plants and carries it out through the ventilating structure at the top. (After United States Department of Agriculture Farmers' Bulletin 1231.)

herbs or 2,000 pounds of fresh roots. Directions for the construction of special equipment of this kind are given in United States Department of Agriculture Farmers' Bulletin 1231.

In the use of artificial heat, best results are obtained if a few fundamental principles are observed. Free circulation of the heated air must be provided in such a way that water-laden air is being continually discharged from the drying chamber and constantly replaced by fresh, dry, warm air. A high drying temperature must not be used. Plants and plant parts containing volatile oils lose much of their oil content at high temperatures and, therefore, throughout the drying process should be kept at a temperature not greatly exceeding that of the outside air. With most other plants, the temperature can be increased gradually, as the plants dry, until it reaches 120 degrees F., or, with most barks, 170 degrees F.

Two emphatic exceptions must be made to the general statements in the

preceding paragraph. In the drying of ginseng roots, under no circumstances may artificial heat be used. In the drying of sassafras bark with artificial heat, the temperature must never be allowed to exceed 120 degrees F. Also, no roots of any kind should be dried near a heated oven, for, with such drying, roots tend to lose weight unduly and to become parched or burnt; in that condition they have very little value.

When artificial heat is used, careful attention must be given to the circulation of air. In the early stages of drying, when moisture is being taken up readily by the air from the surfaces of the drug material, too-free air movement results in a hardening of the plant surfaces, through too-rapid drying, and thus impedes the later stages of drying. Because of the variety of material that must be dried and the variation in atmospheric conditions, no definite rules can be given for adjusting temperature and air circulation. Drying must be learned by experience. In general, it is better to prolong drying by the use of only a slightly increased temperature and air movement than to speed it up with a high temperature and rapid air movement.

Packing drug plants.—Dried crude drugs may be packed in any of several suitable manners. Generally they are packed in used or secondhand burlap bags and sometimes in barrels or boxes. For herbs in quantity, some method of baling is desirable, and a paper-baling machine is very satisfactory, since bales of any convenient size can be made. Before being baled, the herb material should be allowed to lie on a clean floor or in a bin for several days, so that by absorbing some moisture from the air it will become less brittle and more easily handled. Small bales can be packed in cartons; large bales should be securely wrapped in burlap.

In packaging there must be no mixing of drug plants. Each kind must be packaged or baled separately. Also, every package, box, barrel, or bale should be accurately and plainly labeled as to its contents. Small packages of different kinds of drug plants may, of course, be packed together in boxes or bags for shipment, but the shipper should be sure that each package is so well packed that it cannot break open and its contents become mixed with other goods during handling.

Shipment of crude drugs.—A number of the larger firms purchasing crude drugs will, if requested, supply shipping tags and bill forms. They also give shipping advice on their want lists. Certain drugs, including especially ginseng and golden seal, which usually can be collected only in small amounts and should be sold as soon as they are dry, may be shipped by parcel post, insured, or by express. One large buyer of drug plants advises collectors that they save money by shipping over 50 pounds by freight, from 20 to 50 pounds by express, less than 20 pounds by parcel post.

The collector pays the cost of transporting his crude drug material to the buyer. He may prepay the transportation charges or, in the case of freight shipments for which he has received an order, he may have the transportation charges paid for by the buying firm and the amount deducted in the settlement of the account.

Cultivation of Drug Plants

The cultivation of drug plants has appealed to many persons as a means of getting larger returns from small acreages. While in some instances large returns may be possible, no person should undertake to grow any drug plant, expecting profit, without first giving consideration to a number of factors. It is worth considering that among all the plants, totaling nearly 900 species, used in the drug trade, there are perhaps not more than 10 or 12 that are indispensable. Of the half dozen of these that can be grown in the United States, amounts sufficient to supply this entire country probably can be produced on no more than 3,500 acres of land each year. A large amount of hand labor is required with all kinds of cultivable drug plants, including planting, cultivating, weeding, controlling insects and diseases, harvesting, drying, cleaning, sorting, and packing. For many kinds, it is very difficult to obtain seed. In the case of biennial and perennial plants, a minimum of 2 years must elapse before any harvest can be obtained. At present very little is known, even in a broad way, of the climatic, soil, and cultural requirements of most drug plants. An inexperienced grower faces the possibility of complete or partial failure. He may choose a plant not adapted to his climate, or he may produce a crop not satisfactory for drug use because of an unsuitable soil or other cultural limitations. Finally, a number of drug manufacturers have begun to grow some or all of the supplies they require, and it is likely that they will increase this phase of their business.

Undoubtedly, many plants used in the drug trade, now either gathered in the wild or imported, could be grown as cultivated crops. A person undertaking to grow any of them should realize that at first he must do so experimentally and that to be successful he must produce a crop superior in drug quality to what can be obtained otherwise.

In the United States, greatest success has attended the cultivation of plants yielding essential oils. This is true of *Mentha piperita,* which yields oil of peppermint; *Mentha spicata,* which yields oil of spearmint; and *Mentha arvensis* var. *piperascens,* the Japanese mint from which menthol is obtained. The oils of these plants, besides being useful as medicines, have commercial importance as flavoring agents. A plant of this kind offering possibilities in cultivation is *Satureja hortensis,* the source of oil of savory.

Closely allied groups of plants which perhaps offer better opportunity for cultivation are those used in the manufacture of perfumes and insecticides and as condiments. Some of these plants are also valuable sources of drugs. About seven kinds of commercially important condiment plants could probably be grown somewhere in Illinois; these comprise anise, caraway, coriander, dill, fennel, marjoram, and mustard. Caraway, for example, is a biennial plant adapted to large-scale cultivation by machine methods. At a normal price of 8 cents per pound for the seed, it might net $80 per acre or, at an abnormal price of 30 cents or more per pound, it might net as much as $250 per acre.

Angelica (*Angelica Archangelica*), a plant native in Europe but introduced and escaped in some parts of the United States, might repay efforts at cultivation, for it is a very important plant to many American industries. Oil obtained from its roots is used in the perfume industry, and the root itself is used in large quantities in the distillation of gin. The seed is used for its flavor, and oil from the seed is used in the manufacture of gin cordials, vermouth, and certain other beverages. The stem, crystallized in sugar, was formerly imported from France in large quantities, and its use as candy and cake decorations is, in itself, a very large business.

A field that has not been sufficiently explored is the growing of plants yielding insecticides. For the production of rotenone and similar insect poisons more than 6,500,000 pounds of roots were imported into the United States in 1940. For the control of grubs and lice on cattle and ticks on sheep, 2,900,000 pounds of 5 per cent rotenone were required in the winter of 1946–47. Some 15 to 16 million pounds of pyrethrum are imported annually. Special races of the native American plant known as devil's shoestring (*Tephrosia virginiana*) have been developed, which yield 4 to 5 per cent of rotenone. As the plant is native to Illinois, some of these special races of it might be found which would be suitable for growth in this state, or native Illinois strains might be selected and grown here commercially. Pyrethrum (*Chrysanthemum cinerariaefolium*) also seems to be a possible plant for at least some parts of Illinois.

The soil, cultural, and climatic requirements of a number of the most important foreign-grown drug, condiment, and insecticide plants have been collated in mimeographed circulars prepared by the federal Bureau of Plant Industry's Division of Drug and Related Plants. These circulars ought to be consulted carefully by anyone considering an attempt to grow any of these plants for profit.

Kinds of Drug Plants

Plants included.—An effort has been made to include every plant native to or grown in Illinois that has been officially designated as a drug or is now used otherwise than as a home remedy in medicine. Only a few of these plants are now "official"; they are indicated in the text by page references (for example, *U.S.P. XI, p. 331*) to the Eleventh Decennial Revision of *The Pharmacopoeia of the United States of America,* which has been official since June 1, 1936. Most of the plants included have, however, been listed as official drugs or as the sources of official drugs in one or more of the earlier editions of the *Pharmacopoeia.* Many, too, are to be found in the *National Formulary.* Even though no longer official, many are still used extensively or limitedly in medical practice and in the manufacture of medicinal compounds or such closely allied products as candies, flavorings, and perfumes. Hence, the demand for them must be supplied. Also, certain plants which have no known medicinal value and have never been official are listed because they are used in medicinal compounds, to which they lend flavor or color.

Scientific names.—The scientific names used for native plants, and as far as possible for introduced and cultivated plants, are those of the Seventh Edition of *Gray's New Manual of Botany* (American Book Company 1908). Otherwise, the scientific names of introduced and cultivated plants are those generally in use by the drug trade. When the nomenclature of *Gray's Manual* is not the same as that of the drug trade (see, for example, *Agrimonia*), an explanation is given, which will enable the collector to gather the right plants.

Common names.—No attempt has been made to give complete lists of the common names by which individual plants are known. Where possible, one or more of the most frequently used names are given and, if they exist, one or more names referring to the medicinal property or use of the plant. Care must be exercised in the collecting of plants on the basis of their common names, for the same common name not infrequently is used for plants of entirely different kinds of properties. Hemlock, for example, is a harmless tree (*Tsuga canadensis*) from which pitch is obtained, or either of two extremely poisonous herbs (*Cicuta maculata* and *Conium maculatum*) containing toxins and alkaloids. At least eight different plant species are known as snakeroot.

Species discussions.—The discussions given herein of drug-plant species follow a standardized order. Species are listed in the alphabetical order of their scientific botanical names. For each species, there is given one or more common names, the botanical family to which the species belongs, and, if the plant is official, a citation to the *Pharmacopoeia*. Following these items is a botanical description (omitted in the case of well-known cultivated species), brief but sufficient for the identification of the species. Following the description are statements of the part of the plant to be collected, of the time when collecting is to be done, and of the abundance, preferred situations, and range of the species in Illinois. Finally, as additional information, there is given a statement of the medicinally effective contents of the plant and of the medicinal uses attributed to the drug.

Availability of native drug plants.—Among almost 300 plants listed and described in the text, all to be found within the state of Illinois, a few are so rare and some are so narrowly restricted in occurrence that they will hardly repay the time spent in searching for them. Other plants are common but restricted to well-defined parts of the state or to some general type of habitat, while still other plants are abundant everywhere in the state. To assist the prospective collector, a brief statement covering the frequency, distribution, and habitat of each species has been given in the text.

The collecting season.—Crude drugs can be collected during all of the open months of the year. The proper season for collecting any given plant is determined by the time when the plant part is available, the time when it contains the greatest amount of medicinal principle, or the time when it can be

gathered most easily. For any plant that must be collected at a particular time, a statement of the proper time is given in the text. Also, for any plant collected as an herb, the flowering season in Illinois is usually indicated.

Medicinal principles.—The effectiveness of plants as drugs depends on the fact that they contain various constitutents, or principles, which, when taken into or applied on human or animal bodies, produce beneficial results. These principles are of many kinds, but they can be classified generally under the following heads.

1. Common vegetable principles. All plants contain in greater or smaller amounts such substances as sugar, starch, cellulose, proteins, albumins, fats, and vitamins, all of which may be regarded as nutritional. Certain plants reputed to have curative properties, *Hepatica,* for example, contain only these common principles.

2. Crystalline substances. Certain plants either contain or yield crystalline substances. The commonest of these substances is, perhaps, calcium oxalate, which is to be found, for example, in the corms of *Arisaema* and the berries of grapes and Virginia creeper. Other crystalline substances may be more complex and may resemble alkaloids or glucosides in the effects they produce. They often are acrid and act as narcotics. Many of them have not been identified chemically.

3. Mucilaginous principles. Many species contain mucilaginous material. This, as a drug, is probably effective only through its mechanical action. The seeds of flax, psilla, and mistletoe are especially mucilaginous.

4. Gums. Some plants are valuable because of the gums they yield. Gum arabic is perhaps most familiar, though *Acacia Senegal,* the plant from which it is taken, does not grow in Illinois. American styrax is obtained from the sweet gum, *Liquidambar Styraciflua.* Many gums are similar to mucilages.

5. Resins. Resins are peculiar plant products about the chemical structure of which little is known. Some are highly important in commerce (pine resins are the basis of the naval stores industry), and a few are important in medicine. Some of them are mixed with gums, as is true of asafetida and myrrh; and they may contain or yield poisonous and narcotic principles, as is true of the resin from hemp. The flower heads of *Grindelia squarrosa* are collected solely for the resin with which they are coated.

6. Acids. Many plants contain organic acids of various kinds. Most common are tannin, which is important in industry as well as in medicine, and gallic acid. Alum root (*Heuchera americana*) contains 18 to 20 per cent of tannin, and oak "nut galls" may contain from 25 to 75 per cent gallic acid (actually digallic, or gallotannic, acid). Other organic acids appear to be peculiar to definite genera or species of plants and are not found in others; examples of such acids are polygalic acid, obtained from *Polygala Senega,* sarracenic acid, obtained from species of *Sarracenia,* and fumaric acid, obtained from *Fumaria officinalis.*

7. Saponins. Numerous compounds, occurring in more than 400 species of plants, are called saponins from the fact that, with water, they form colloidal solutions which foam readily, stabilize emulsions of fats and oils, and greatly reduce surface tension. Chemically, they are glucosides. Their physiologic action is usually toxic. Two well-known plants yielding saponins are bouncing Bet (*Saponaria officinalis*), whose crushed leaves produce a soaplike emulsion in water, and foxglove (*Digitalis purpurea*), from which a complex of no less than five saponins, or glucosides, is derived for the treatment of diseases of the heart.

8. Alkaloids. Numerous chemically complex, nitrogen-containing, oily or crystalline substances occur in plants and are termed alkaloids because of their basic, or alkaline, reactions. They are rather limited in their distribution in the plant kingdom, being found principally in members of the Solanaceae, Rubiaceae, Ranunculaceae, Papaveraceae, and Leguminosae. They include such well-known principles as strichnine, quinine, nicotine, cocaine, and morphine. They rarely occur alone. Usually at least two or three occur together; 24 are known in cinchona bark and 20 in poppy juice (opium). They, with the glucosides, constitute the striking anomaly among drugs, for in small doses they can induce very desirable physiological effects, while in large doses they prove extremely toxic or, often, fatal. Some alkaloids cannot be used medicinally, because the minimum fatal dosage differs too little from the minimum medicinal dosage.

9. Glucosides. Even more abundant in plants than alkaloids are the chemically very complex principles known as glucosides. These compounds, found most often in fruit, bark, and roots, but also in some leaves, are widely distributed in the plant kingdom. Usually they occur in small amounts and are extremely difficult of chemical isolation and identification. They consist basically of a combination of some sugar, usually glucose, and one or more other, usually aromatic, substances. They are crystalline, colorless, soluble in water or alcohol, and bitter. Like the alkaloids, they may induce favorable physiologic reactions in small dosages but become toxic, even fatal, in larger dosages. Among the common glucosides are amygdalin, found in the almond; sinigrin, found in black mustard seeds; salicin, found in willow bark; and dhurrin, found in sorghum.

10. Aromatics. The great majority of plants contain at least small amounts of substances that give off characteristic odors. These substances are, chiefly, essential oils, also known as volatile oils. Chemically they are not, however, fats or compounds of fatty acids. In some plants or in some groups of plants—the mints, for example—they may be present in considerable quantity. Camphor oil, cedar oil, pine oil, and wintergreen oil, as well as many others, are important commercially outside the drug trade. In some plants essential oils occur in very small amounts; 8 tons of rose petals yield only 1 pound of attar of roses, and 1,000 pounds of orange blossoms yield only 1 pound of orange-blossom oil. Widely different in chemical composition, essential oils have many valuable uses as medicinal

principles, as well as being useful to impart flavors and odors. Essential oils well known for their medicinal values are menthol, thymol, turpentine, and camphor.

Medicinal uses of plants.—The medicinal uses which the individual drug plants are reputed to have are stated briefly in the text. It is, perhaps, unnecessary to include a warning that plant drugs, like other drugs, if used without a physician's direction, can prove very harmful or, sometimes, fatal. The plant principles which produce medicinal effects usually are poisons; in small amounts they may only stimulate, but in larger amounts they begin to produce stronger physiological reactions. If the dosage is not properly adjusted for the effect desired, the taking of a drug may actually produce effects worse than the illness the drug was intended to counteract.

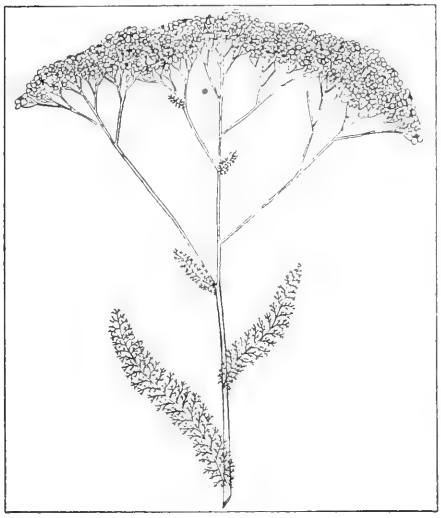
Acknowledgments

In the compilation of this circular, information relating to the collection, drying, marketing, properties, and uses of plants entering into the drug trade has been drawn from so large a number of books, bulletins, pamphlets, trade publications, and other sources that a listing of the sources would be impossible. In the evaluation of this information, however, much assistance has been given by Professors E. N. Gathercoal (*emeritus*) and E. H. Wirth of the University of Illinois College of Pharmacy and by Messrs. W. W. Bell of S. B. Penick & Company, E. L. Donzelot of Eugene Donzelot & Son, William S. Fink of Peek & Velsor, Inc., C. R. Greer of R. T. Greer & Company, and H. L. Schaefer of the St. Louis Commission Company. Through their criticisms, suggestions, and contributions of particular facts, each of these men has added materially to the accuracy and usefulness of the circular. For their cordial interest and unstinted help, our sincere appreciation is expressed here.

The Plants and Their Pictures

Plants described here are arranged in the order of their scientific names. In each case the scientific name is followed by one or more common names and the name of the family to which the plant belongs. In most cases, a description of the plant is given, which is followed by mention of the part or parts collected, the distribution in Illinois, the medicinal contents, and the drug uses.

For common cultivated plants, no descriptions are given. For a few plants, medicinal contents and uses are not given. These plants often are used in specialized food, condiment and candy industries, or, without known medicinal properties, may be used in compounding bitters or patent medicines.



ACHILLEA MILLEFOLIUM L. **Yarrow, milfoil.** ***Compositae.***—A stiff herb 1 to 3 feet tall, perennial; stem upright, straight, more or less woolly, much branched at the top; leaves alternate, linear to narrowly oblong, subdivided into numerous small parts, more or less hairy; flowers white, or rarely pink, minute, in numerous small heads capping the apical branches.

Entire herb, except the roots, collected when the plant is in full flower. Common throughout Illinois on grazed land, in abandoned fields and along roadsides; June to November.

Contains a volatile oil and the alkaloid achilleine. Used as a stimulant, tonic, astringent, and diaphoretic.

ACONITUM NAPELLUS L. **Aconite, monkshood, wolfsbane.** ***Ranunculaceae. U. S. P. XI, pp. lxvi, 31–2, 391, 485.***

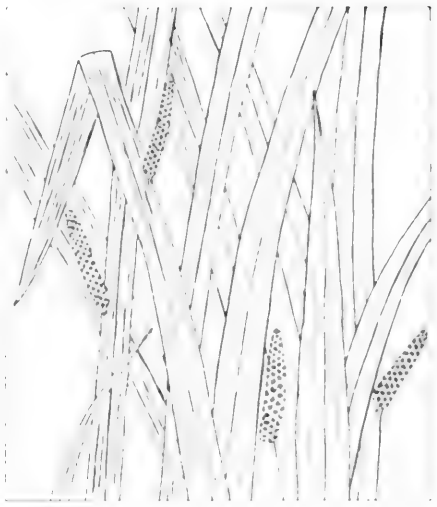
Leaves and root collected; the official drug is the dried tuberous root. Introduced, frequently grown in gardens, not known to have escaped.

Yields the extremely poisonous alkaloid aconitine. Used externally as a local anodyne to relieve neuralgic and rheumatic pain; poisonous.

ACORUS CALAMUS L. Sweet flag, calamus, flag root. *Araceae.*—An erect, stemless, glabrous herb, perennial; rootstock long, branched, horizontal; leaves arising directly from the rootstock, linear and swordlike, 2 to 6 feet long, up to 1 inch wide, sharp-pointed, sharp-edged; midvein rigid; flowers minute, yellowish-green, crowded on a spikelike spadix 2 to 3½ inches long and ½ inch thick.

Rootstock collected in early spring or late fall. Not abundant in Illinois; restricted to localized occurrences along streams and in swampy situations; May to November.

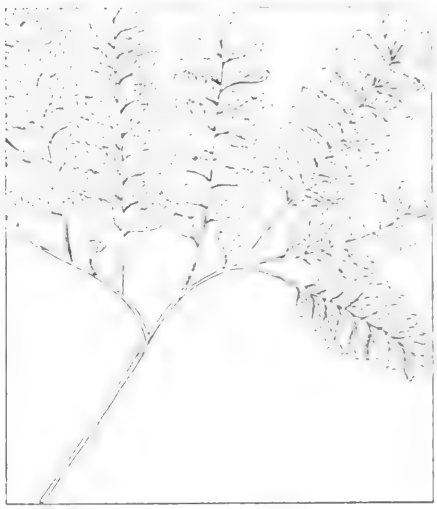
Contains a volatile oil and the bitter principle acorin. Used as a carminative and as an aromatic bitter to aid digestion.



ADIANTUM PEDATUM L. Maidenhair fern. *Polypodiaceae.*—An herb 8 to 20 inches tall, perennial; rootstock creeping, slender, chaffy; leaves (fronds) raised on black, polished stipes each forked at the summit, divided into numerous short-stalked, obliquely triangular-oblong pinnules cleft and spore-bearing on the outer margin.

The leaves (fronds) collected. Occasional to locally abundant in all wooded regions in the state.

Medicinally effective constituents unknown; has a bitter, aromatic taste. Used as a demulcent and pectoral.

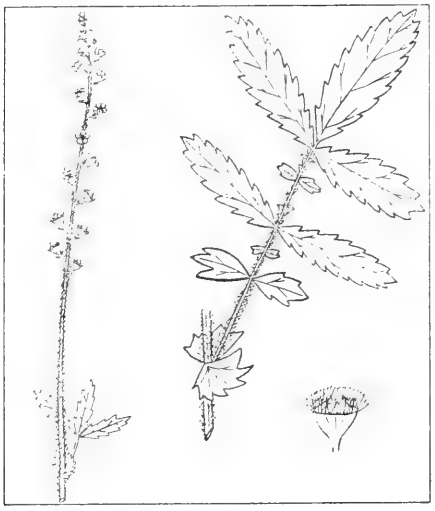


AESCULUS HIPPOCASTANUM L. Horse-chestnut. *Sapindaceae.*

The bark, especially that of younger trees, collected in the fall; also the seed. To be seen occasionally as an ornamental tree; not native and, so far as known, not established as an escape.

The bark contains tannin and the glucosides aesculin and fraxin. Used as a tonic and astringent.

[The collection of native species is to be avoided, because they contain a poisonous, narcotic alkaloid.]



AGRIMONIA GRYPOSEPALA Wallr. Agrimony, feverfew, beggar-ticks. ***Rosaceae.***—An herb 2 to 6 feet tall, perennial; roots fibrous; stem erect, branched, covered with soft, spreading hairs; leaves alternate, large, compound, thin, bright green, composed of mostly 7 coarsely toothed leaflets and 2 or 3 pairs of smaller, interposed leaf segments; stipules conspicuous; flowers yellow, up to ½ inch wide, in spikelike racemes; petals and sepals 5; fruit top-shaped, armed on its rim with numerous hooked bristles.

Entire herb collected when in flower. Common throughout Illinois in thickets, especially on broken, ravine-cut land along streams and in woods borders; June to September.

Contains tannin and a volatile oil. Used as a simple vegetable astringent.

[*Agrimonia Eupatoria* of drug manuals includes the species described above, *A. striata* Michx., and perhaps *A. mollis* (T. & G.) Britt. All three species have about the same habitat and may be collected without discrimination.]

AGROPYRON REPENS (L.) Beauv. Dog grass, quack grass, wheat grass, couch grass, triticum. ***Gramineae.***—An herbaceous grass 1 to 4 feet tall, perennial; rootstocks long, creeping, bright greenish-yellow; roots fibrous; leaves bright green or glaucous, flat or inrolled, narrow, rough on the upper surface; spikelets 3 to 8 flowered, set in two rows on opposite sides of the stem to form a terminal spike 3 to 8 inches long; glumes sharp-tipped or awned, strongly nerved.

The rootstocks (not the roots) collected in the spring. Introduced and established along railroads and roadsides and in pastures and fields; abundant throughout the northern two-thirds of Illinois.

Contains the carbohydrate principle triticin. Used as a demulcent; is said to possess diuretic properties also.

ALETRIS FARINOSA L. Star grass, colic-root, ague grass, true unicorn root. ***Liliaceae.***—A stemless, glabrous herb, perennial; roots fibrous, numerous, tough; leaves directly from the crown, lanceolate, acuminate at the tip, narrowed to the base, pale yellow-green, 2 to 6 inches long, up to ¾ inch wide; flowers white or yellow tipped, about ¼ inch long, closely set in a spike 4 to 12 inches long at the top of a slender, striate flower stalk 1½ to 3 feet tall.

Rootstock and roots collected in the fall. Limited to wooded sandy regions and occurring chiefly in the northeastern quarter of the state; July through August.

Contains a bitter principle. Used as a uterine tonic, diuretic, emetic, and diaphoretic.

ALNUS SERRULATA Willd. [A. ***rugosa*** **(Du Roi) Spreng.] Tag alder, black alder, smooth alder, red alder.** ***Betulaceae.***—A shrub up to 20 feet tall; stems usually several; bark smooth, reddish brown to gray, thin; twigs hairy at first, later smooth and covered with small, dark specks; leaves alternate, obovate, serrate, 3 to 5 inches long, wedge-shaped at the base, often somewhat hairy on the veins below; the veins prominent below, straight, ending in the marginal teeth; male flowers in catkins 2 to 4 inches long; female flowers and fruit in ovoid, woody cones ½ to ¾ inch long.

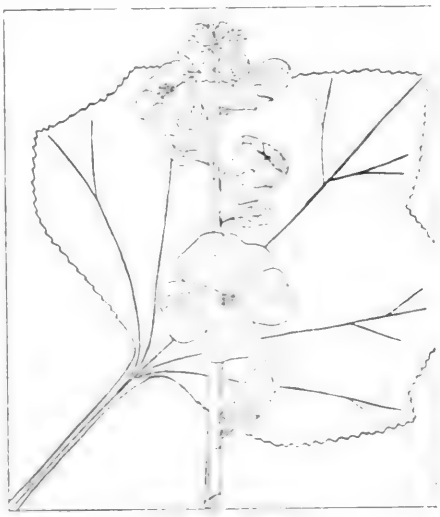
Bark of the stems collected in early spring or late fall. Rare along streams in wooded, hilly regions in southern Illinois.

Contains tannin. Used as an alterative and astringent.

ALTHAEA ROSEA Cav. Black malva, hollyhock. ***Malvaceae.***

The flowers collected. Grown as a decorative plant throughout the state and commonly escaping but not becoming established.

Contains mucilage. Used as a demulcent and emollient.

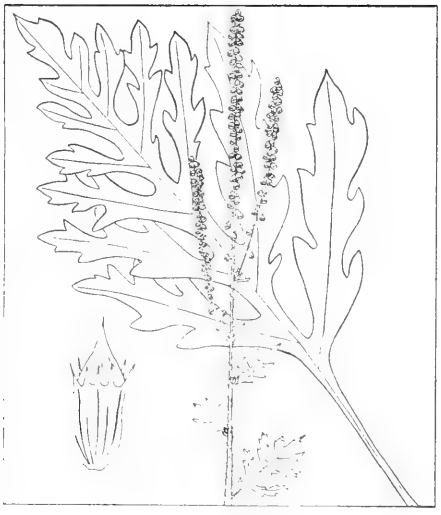


AMARANTHUS RETROFLEXUS

L. Amaranth, pigweed, rough green amaranth, red-root. ***Amaranthaceae.***— An erect, strict herb branched above, roughish pubescent, 1 to 6 feet tall, annual; taproot long, fleshy, red or pink; leaves alternate, petioled, 3 to 6 inches long, dull green, rough hairy, ovate or rhombic, wavy-margined; flowers small, greenish, 3-bracted, crowded in dense axillary and terminal panicles; seed glossy black, lens-shaped, small, notched at the narrow end.

Pollen is collected; also there is occasional demand for the herb and root. Common as a weed along railroads and roads and in pastures, fields, and waste places throughout the state; August to October.

Medicinal constituents unknown. Used as an astringent and detergent; pollen extract is used as an antigen in certain types of hay fever.



AMBROSIA ARTEMISIIFOLIA L.

Common ragweed, hog-weed, bitter-weed. ***Compositae.***—An herb 1 to 3 feet tall, more or less hairy throughout, annual; roots fibrous; stem erect, straight, much-branched; leaves alternate, divided and subdivided into numerous lobes, 2 to 4 inches long, white-hairy beneath; male flowers in small green heads crowded in numerous spikes 1 to 5 inches long; female flowers greenish, in small clusters in the axils of upper leaves.

Leaves and tops collected while the plant is in flower; also the pollen. Extremely abundant in waste places throughout Illinois; occurs in nearly pure stands in grain fields after harvest; July through October.

Contains a bitter principle and a volatile oil. Used principally as a topical astringent.

[The pollen of this plant is the principal cause of hay fever in August and September. Pollen is collected and extracted; and the extract is used as a prophylactic and cure for hay fever.]

AMBROSIA TRIFIDA L. Giant ragweed, horse-weed. ***Compositae.*** — A very coarse herb up to 15 feet tall, annual; stems strong, straight, branched, rough-hairy; leaves large, opposite, petioled, serrate, often 10 to 12 inches wide, 3-nerved, mostly 3-lobed, the lobes sharp-pointed; male flowers in green heads, the heads in loose to compact spikes up to 10 inches long; female flowers clustered in the axils of upper leaves.

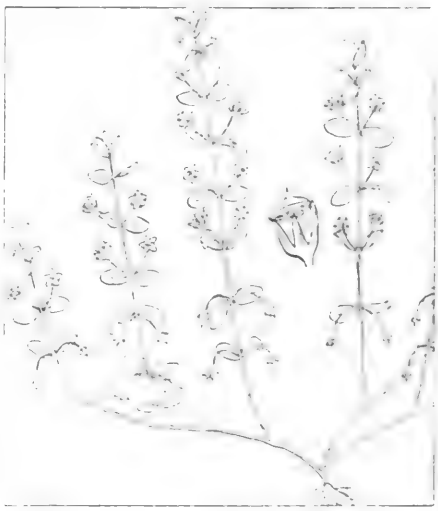
Leaves and tops collected when the plant is in flower. Extremely abundant along streams and roadside ditches, on overflowed low land, and as a weed in vacant places; July to November.

Has the same properties and uses as common ragweed.

ANAGALLIS ARVENSIS L. Red chickweed, scarlet pimpernel. ***Primulaceae.***—A prostrate, spreading, smooth herb with branches 4 to 20 inches long, annual; leaves ovate, ¾ inch long, opposite, entire, sessile; flowers red, small, wheel-shaped, solitary on slender, axillary peduncles; fruit a small, many-seeded capsule opening by a circular lid.

The leaves and flowering tops collected. Introduced in Illinois; infrequent in fields and waste places, especially near large cities.

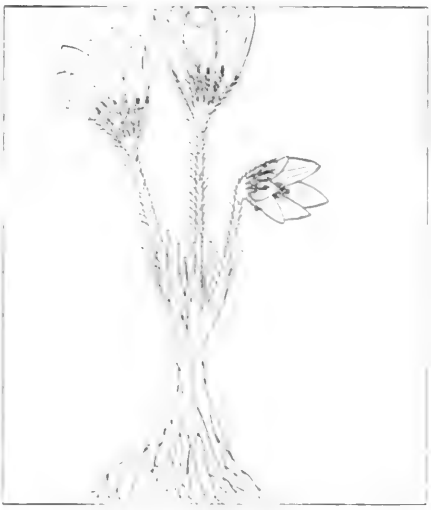
Contains two glucosidal saponins and a pepsin-like substance. Used as an expectorant and nervine; has been used in the treatment of rheumatism; poisonous.

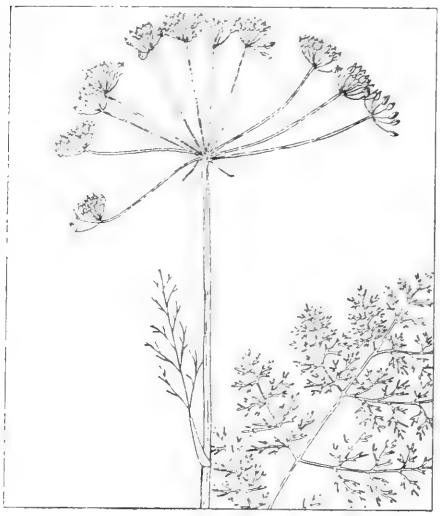


ANEMONE PATENS L. Pasque flower, headache-plant, pulsatilla. ***Ranunculaceae.***—A silky-hairy, low, stemless herb 6 to 18 inches tall; rootstock thick; leaves much divided into linear, acute lobes; flowers light bluish-purple, solitary at the tip of the flower stalks, arising from a much-divided leafy involucre; fruit a silky achene tipped by a plumose style.

The herb collected. Occurs sparingly on gravelly hills in Winnebago and Jo Daviess counties.

Yields the drug pulsatilla; contains a volatile oil which yields the acrid principle anemonin. Used as an irritant, diuretic, expectorant, and emmenagogue.





ANETHUM GRAVEOLENS L. Dill. *Umbelliferae.*

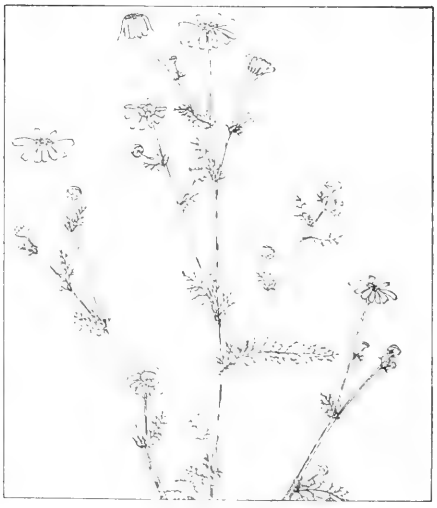
The seed collected. Grown in home gardens in many parts of the state.

Contains a volatile, aromatic oil. Used as an aromatic, carminative, condiment, and flavoring agent.

ANGELICA ATROPURPUREA L. Great angelica, Aunt Jerichos, archangel. *Umbelliferae.*—A stout, glabrous herb 4 to 6 feet tall, biennial; taproot thick, often branched; stem erect, very stout, jointed, hollow, usually dark purple; leaves alternate, ternately decompound, very large, and with very broad petioles, the lower ones often 2 feet wide; leaflets lanceolate to ovate, serrate, often incised; flowers white, small, in 9 to 15 umbelled heads; petals inflexed at the tip; umbels up to 10 inches wide, with rays 2 to 4 inches long.

The root collected in late fall. An occasional, sometimes abundant, plant on alluvial soils along streams in the northeastern fourth of the state.

Contains a volatile oil and the acrid resin angelicin. Used as an aromatic stimulant and tonic, emetic, and diaphoretic.



ANTHEMIS NOBILIS L. Chamomile, Roman chamomile. *Compositae.*—A pubescent, aromatic herb 6 to 18 inches tall, perennial; stem round, with many procumbent branches; leaves alternate, 1 to 2 inches long, compactly subdivided into numerous filiform lobes; flower heads about 1 inch wide, with 12 to 18 white ray flowers, solitary at the ends of bare peduncles terminating the branches.

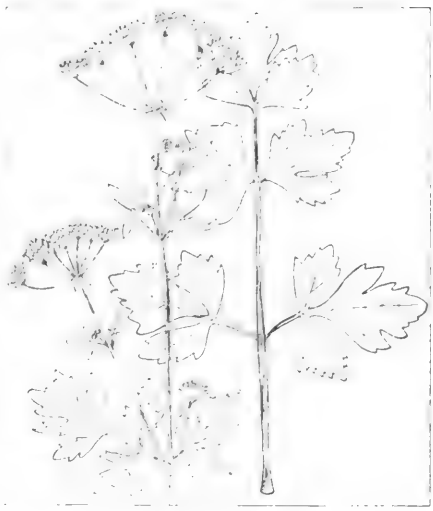
Flower heads collected just before they expand. May possibly be found sparingly near old gardens, as an escape from cultivation.

Contains a volatile oil and a bitter principle. Used as a tonic, aromatic bitter, mild stimulant, emetic, diaphoretic, and fomentatory.

APIUM GRAVEOLENS L. Celery. *Umbelliferae.*

The seed collected. Grown in truck and home gardens throughout the state.

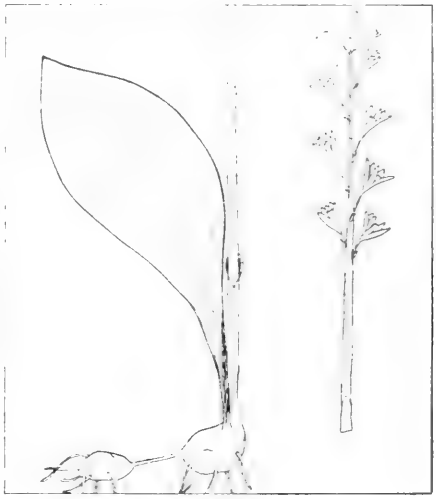
Contains a volatile oil. Used as an aromatic stimulant, carminative, and stomachic; also as a condiment and flavoring agent.



APLECTRUM HYEMALE (Muhl.) **Torr. Adam-and-Eve root, putty-root.** *Orchidaceae.*—A stemless, smooth herb 1 to 2 feet high, perennial; corm round, with a few fibrous roots, usually attached to at least one older corm; leaf 1, elliptic, 4 to 6 inches long, parallel-veined, arising from the corm at the side of the flower stalk; flowers yellowish-brown mixed with purple, about 1 inch long and wide, several in a raceme at the top of the 3-scaled, tall flowering stalk; fruit a capsule.

The corm collected. Rare but widely distributed in shady woods through most of the state.

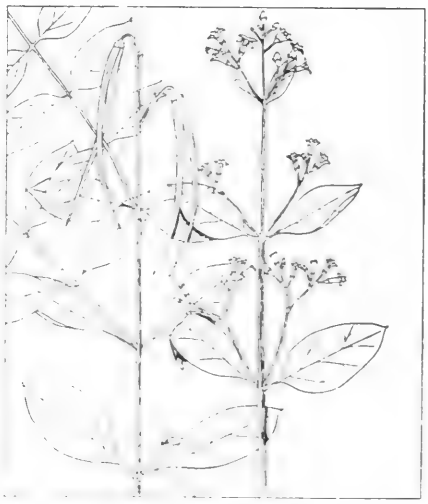
Contains mucilage. Used as a demulcent pectoral.



APOCYNUM ANDROSAEMIFOLIUM L. Dogbane, rheumatism wood, wild ipecac, spreading dogbane. *Apocynaceae.*—A spreading, mostly glabrous herb 1 to 4 feet tall, perennial; sap milky; rootstock horizontal; root fibrous; stem erect, often purplish, woody at the base and with tough, fibrous bark; branches broadly spreading; leaves opposite, oval, short-petioled, with entire margins and mucronate tips, dull green above, pale and somewhat hairy below, 2 to 4 inches long, 1 to 1½ inches wide; flowers pink, bell-shaped, 1/3 inch long; the 5 petal tips spreading; calyx minute, green; fruit a long, slender pod (usually in pairs) containing numerous small, silk-tipped seeds.

Roots and rootstocks collected in late fall. State-wide in distribution and common; often occurring in large patches in open cutover woods, thickets, and barrens.

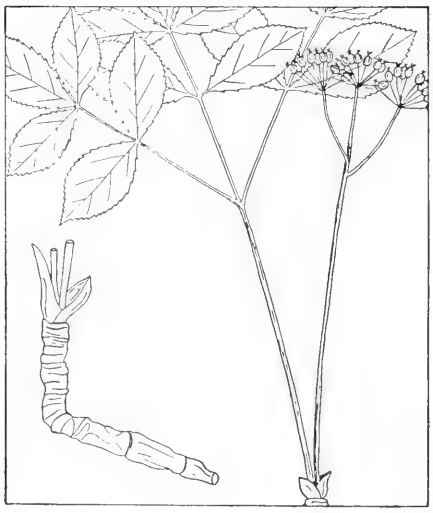
Contains the glucoside apocynein, the toxic resin apocynin, and several other toxic substances, including cymarin, which yields cymarigenin. Used as a cathartic, diaphoretic, diuretic, emetic, and cardiac stimulant.



APOCYNUM CANNABINUM L. Black Indian hemp, Amy root, rheumatism root, Indian physic, Choctaw root. *Apocynaceae.*—An erect, mostly glabrous, glaucous herb 2 to 10 feet tall, perennial; sap milky; root and rootstalk vertical, deep, soon branching; stem extensively branched, woody at the base; bark tough, fibrous; branches erect, exceeding the main stem; leaves opposite, oblong-to oblong lanceolate, nearly sessile, entire, mucronate-tipped, pale green, at most sparingly pubescent beneath; the flowers greenish-white, in dense terminal clusters; the 5 petal tips erect; calyx as long as the corolla tube; fruit a long, slender pod (usually in pairs) containing numerous brown, slender, silk-tipped seeds.

Roots and rootstocks collected in late fall; the top, woody part of the rootstock, which is valueless, should be removed. State-wide in distribution; of very common occurrence along streams on moist, gravelly, or sandy flats.

Contents and uses the same as those of the preceding species.



ARALIA NUDICAULIS L. Wild sarsaparilla, sarsaparilla, small spikenard. *Araliaceae.*—An almost stemless herb 8 to 16 inches tall, perennial; roots long, horizontal, aromatic; leaf 1, long-stalked, compound, with 3 primary divisions each bearing 5 oblong-ovate to oval-pointed, serrate leaflets; blossoms greenish white, in 2 to 7 umbels at the top of the flower scape; fruit a purplish-black berry 1/4 inch long, 5-lobed when dry.

Root collected in the fall. Infrequent to rare on rocky, wooded bluffs across the northern third of the state.

Contains a bitter, pungent volatile oil and a resin. Used as a substitute for the true sarsaparilla, which is obtained from certain species of *Smilax*. It is an aromatic stimulant, diaphoretic, and alterative.

ARALIA RACEMOSA L. Spikenard, American sarsaparilla, old man's root. ***Araliaceae.***—A divaricately branched herb 3 to 5 feet tall, perennial; roots large, fleshy, aromatic; leaves alternate, decompound; the leaflets cordate-ovate, pointed, downy, doubly serrate, 2 to 6 inches long; flowers greenish, small, in umbels forming large compound panicles; fruit dark purple to reddish brown, berrylike, 5-seeded.

The roots collected in the fall. Common to rare in rich woods throughout the state.

Contains a bitter volatile oil and a resin. Used as an aromatic, stimulant, diaphoretic, and alterative.

ARALIA SPINOSA L. Prickly elder, Hercules' club. ***Araliaceae.***—A spine- and prickle-armed shrub up to 20 feet tall; leaves alternate, bipinnately compound, very large; leaflets many, ovate, serrate, glabrous, 1 to 3 inches long, ½ to 2 inches wide; flowers white, small, in umbels of 10 to 30 forming a very large, branched panicle; fruit black, globose, juicy, 5-seeded.

The bark collected. Occurs locally in dry, open places on wooded slopes in the southern tip of the state.

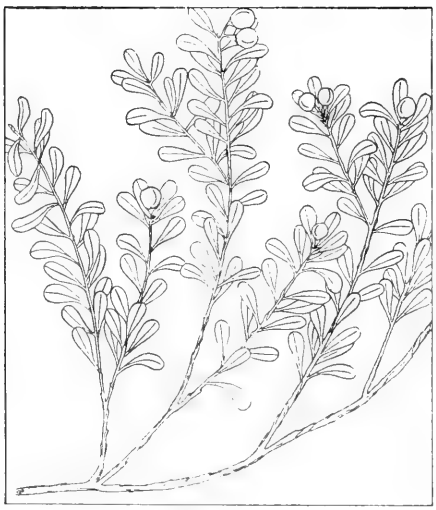
Contains the saponin aralien, a volatile oil, and an acrid resin. Supposed to have stimulant and diaphoretic properties.

ARCTIUM MINUS Bernh. Burdock, smaller burdock, clotbur, cuckoo button. ***Compositae.***—A large-leaved, coarse, hairy herb up to 5 feet tall, biennial; taproot long, up to 3 inches in diameter; stem the second year erect, stout, ridged; leaves up to 12 inches long, cordate, pale hairy beneath, with ruffled entire to dentate margins, in rosettes from the crown the first year, alternate on the stem the second year; petioles hollow; flower heads pink to purple, globular, compact, burlike, clustered in the leaf axils, armed with inwardly hooked spines.

The root collected in the fall of the plant's first year, seeds the second year. State-wide in distribution; occasional to abundant as a weed in farmyards, pastures, abandoned fields, and open land.

Source of the drug lappa; contains inulin and the glucoside lappin. Used as a diuretic and alterative.

[*Arctium Lappa* L., the great burdock, is the European plant from which the drug lappa is obtained. It has been introduced into Illinois but is not nearly so common as the species above. It can be recognized by the solid petioles of its leaves.]

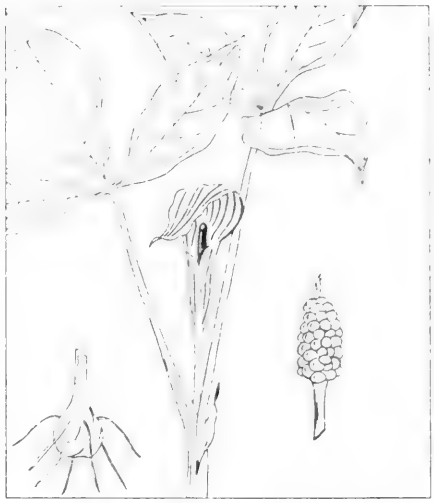


ARCTOSTAPHYLOS UVA-URSI (L.) Spreng. Uva-ursi, bearberry. ***Ericaceae.***—A low, trailing, evergreen shrub, 4 to 16 inches tall; roots thick, woody, creeping; stems numerous, spreading, 2 to 3 feet long; bark shredding, reddish-brown; leaves evergreen, shining, leathery, alternate, broadly obovate, ½ to 1 inch long, half as wide; flowers rose-tinted, small, urn-shaped, 5-parted; fruit a red, globose, dry-mealy drupe containing 5 coalescent nutlets.

The leaves collected in the fall. Occasional to abundant on sandy slopes and crests in the extreme northeastern corner of the state.

Contains the glucosides arbutin and ericolin, the crystalline principle ursone, tannin, and gallic acid. Used as an astringent, tonic, and diuretic.

ARISAEMA TRIPHYLLUM (L.) **Schott. Indian turnip, Jack-in-the-pulpit.** *Araceae.*—An herb 8 inches to 3 feet tall, perennial; corm turnip-shaped, wrinkled, intensely acrid; leaves mostly 2, compound; leaflets 3, veiny, elliptical ovate; petioles tall, sheathing the flower stalk; flowers minute, crowded at the base of a club-shaped spadix, the latter inclosed by a hoodlike and tubular, variegated, more or less colored spathe; fruit a scarlet, 1- to 5-seeded berry.



The corm collected in summer or autumn. In open or dense woods, common to abundant throughout the state.

Contains a volatile acrid principle, mucilage, possibly an alkaloid, and calcium oxalate crystals. Used as a stimulant, expectorant, irritant, and diaphoretic.

ARISTOLOCHIA SERPENTARIA L. Virginia snakeroot, serpentaria. *Aristolochiaceae.* *U. S. P. XI, p. 331.*—An upright herb 6 to 18 inches tall, perennial; roots fibrous, from a short, thin, bent, aromatic rhizome with the odor of turpentine; stems several, simple or branched only at the base, swollen at the nodes, often red-tinged below; leaves ovate or oblong, cordate or halberd-shaped at the base, pointed, entire, petioled, and alternate; flowers on basal scaly branches, S-shaped, contracted in the middle, dull brownish-purple; the fruit a 6-angled, 6-valved, many-seeded pod.

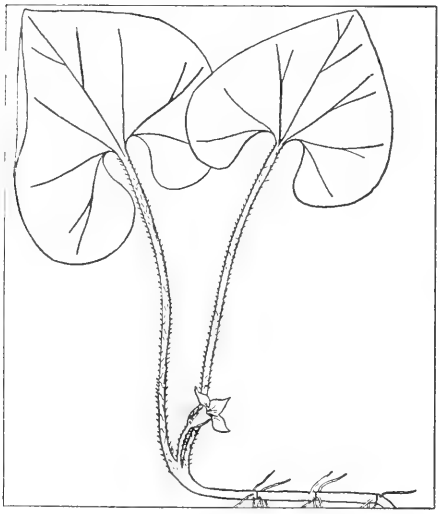
The roots and rhizome collected in the fall. Rare to frequent, sometimes common, in moist woods throughout the state south of Peoria.

Source of the drug serpentaria; contains a volatile oil containing borneol, the amorphous bitter principle aristolochin, and the alkaloid aristolochinine. Used as an aromatic, bitter stimulant; is often given with other drugs, such as cinchona, to increase their absorption and activity.

ARTEMISIA ABSINTHIUM L. Wormwood, absinthe, sage. ***Compositae.***—A branching, silky-hoary, aromatic herb 2 to 4 feet tall; perennial; stems erect, much-branched, woody at the base; leaves pinnately divided into numerous linear to obovate obtuse lobes, 2 to 5 inches long, alternate; uppermost leaves entire, linear, and smaller; flowers yellow, in numerous drooping, short-peduncled, small heads.

The leaves and tops collected when in flower. Introduced and sparingly established along roadsides and in waste places throughout the state; July to October.

Contains a volatile oil, the bitter principle absinthin, and tannin. Used as a stimulant, tonic, and flavoring for certain alcoholic drinks.



ASARUM CANADENSE L. Wild ginger, Canada snakeroot, Indian ginger. ***Aristolochiaceae.***—A low, stemless, soft pubescent herb, 6 to 12 inches tall, perennial; rhizome slender, creeping, aromatic, pungent, jointed about every half inch, with thin roots from each joint; leaves 2, kidney-shaped, 4 to 6 inches wide, on long petioles; flower solitary, dull purple, bell-shaped, the calyx 3-parted, no corolla present; stamens 12; style 6-lobed at the summit, with 6 radiating stigmas; fruit a fleshy, globular pod ½ inch or more in diameter.

The rhizome and roots collected in the fall. Infrequent to common in rich woods throughout the state.

Contains an aromatic volatile oil, a pungent resin, and the fragrant principle arasol. Used as an aromatic stimulant, carminative, and tonic.

[Other species are collected and used without distinction.]

ASCLEPIAS SYRIACA L. Milkweed, silkweed, cotton weed. ***Asclepiadaceae.***—An upright, unbranched, coarse herb with milky sap, 3 to 5 feet tall, perennial; rootstock horizontal, long, creeping; stems stout, simple, finely pubescent above; leaves broadly oval to oblong, 4 to 8 inches long, opposite, smooth and green above, downy and pale beneath; flowers purplish, in simple, many-flowered terminal and axillary peduncled umbels; fruit a hairy, soft-spiny pod 3 to 5 inches long, borne upright on the recurved peduncle; seeds dull brown, tufted with silky hairs at the base.

Rootstock and roots collected. Common throughout the state in waste places, fields, and pastures, especially where the land is sandy or gravelly.

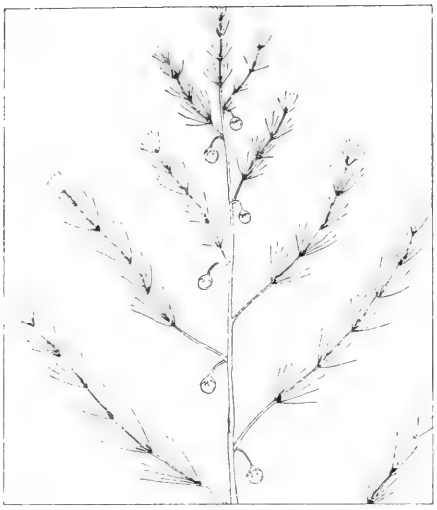
Contains a latex. Used as is the following species.

ASCLEPIAS TUBEROSA L. Butterfly-weed, pleurisy-root, orange milkweed. ***Asclepiadaceae.***—An erect, hirsute, little-branched herb without milky sap, 1 to 3 feet tall, perennial; rhizome large, fleshy; stems several, densely clustered; leaves linear to narrowly oblong, 2 to 6 inches long, alternate, obtuse, and cordate; flowers orange, in simple, terminal and axillary umbels; fruit a hoary, dark brown pod 4 to 5 inches long; seeds brown, flat, tufted with silky hair at the base.

The rhizome and roots collected in the autumn. Occasional or locally abundant in waste places and dry and sandy fields throughout the state.

Contains two resins and the glucoside asclepiadin. Used as a diuretic, purgative, emetic, expectorant, and diaphoretic, especially in pulmonary and bronchial affections, and in rheumatism.

[*Asclepias incarnata* L., swamp milkweed, is also sometimes collected. It is important that collections of the roots of the different milkweed species should not be mixed, as drug buyers specify that the roots shall be true.]



ASPARAGUS OFFICINALIS L. Asparagus. *Liliaceae.*

Root and seed collected. Grown commercially in several regions, also an occasional escape from gardens in all parts of the state.

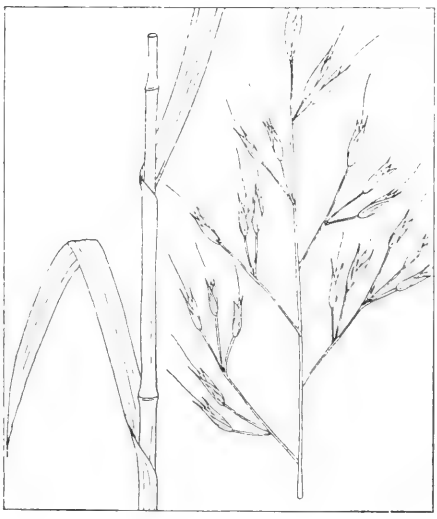
Contains asparagine. Used as a diuretic and aperient.

ASPIDIUM MARGINALE (L.) Sw. Male fern, leatherwood fern, shield fern. *Polypodiaceae. U. S. P. XI, p. 246.*—An herbaceous, evergreen fern 1 to 2 feet tall, perennial; rhizome densely covered with glossy brown chaff, 3 to 6 inches long, ½ to 1 inch thick, with stipe remnants 2 to 3 inches in diameter; stipes chaffy at the base; fronds leathery, bipinnate; pinnae lanceolate, broadest at the base, their segments (pinnules) oblong, obtuse, entire; sori rather large, nearly marginal.

The rhizome only collected, from July through September; must be carefully cleaned, *but not washed,* dried rapidly in the shade, and marketed at once. Common in woods on rocky hillsides from Kane and Henderson counties southward.

Contains an oleoresin which yields filicin. Used as a vermifuge for tapeworm.

[*Aspidium Filix-mas* (L.) Sw., male fern, is the official plant (*U. S. Pharmacopoeia XI, p. 76*). It does not, however, occur in Illinois.]



AVENA SATIVA L. Oats. *Gramineae.*

The inflorescence and grain collected. Grown in large acreages throughout the state as a farm crop.

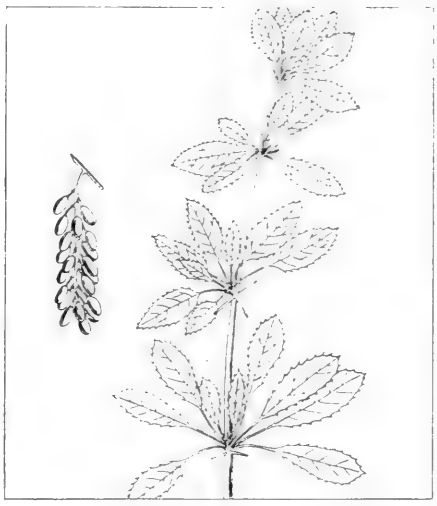
Contains starch, a protein, and avenin. Used as a stimulant and nutrient.

BAPTISIA TINCTORIA (L.) R. Br. Wild indigo, rattlebush, yellow broom. ***Leguminosae.***—An erect, much-branched, smooth herb 2 to 3 feet tall; perennial; stems slender, glaucous; leaves compound, 3-foliate, petioled, alternate; leaflets obovate, ½ to 1½ inches long; stipules minute, soon lost; flowers yellow, pealike, ½ inch long, in few-flowered, terminal racemes; fruit an ovoid to globose, slender-tipped, stalked, inflated pod.

The root collected, also the herb itself. Infrequent to rare in dry, waste, and wooded land; very much localized.

Contains the glucoside baptisin and the alkaloid cytisine. Used as an emetic, cathartic, and coloring agent.

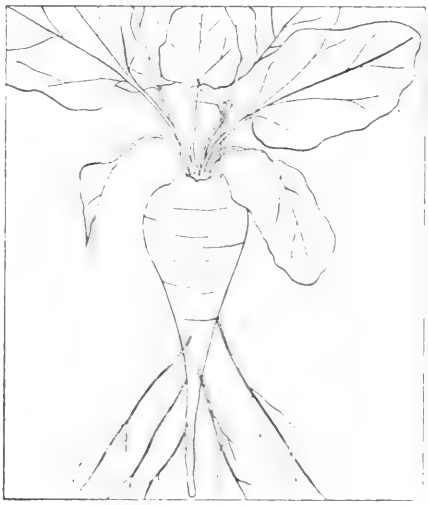
[*Baptisia bracteata* (Muhl.) Ell., *B. leucantha* T. & G., and *B. australis* (L.) R. Br. also grow in Illinois and are all more abundant than the foregoing species. *B. leucantha,* white wild indigo, is the most common. Because of the difficulty in distinguishing species, they may have been collected without discrimination. However, each appears to have distinctive toxic properties.]



BERBERIS VULGARIS L. Yellow-root, common barberry. ***Berberidaceae.***—An upright, spiny shrub 4 to 8 feet tall; roots with whitish, shining bark; stems gray; wood yellow; leaves ovate, with sharp, bristly teeth; flowers yellow, small, in long, drooping, axillary racemes; sepals and petals each 6; fruit a small, scarlet, 2-seeded, acid, astringent berry.

The barks from stem and root collected; also the berries. Introduced, widely escaped in the northern quarter of the state, and now almost eradicated.

The bark contains several alkaloids, including berberine; the berries are acid but contain no medicinal principle. The bark is used as a bitter tonic; the berries are used to flavor drinks employed in the treatment of fevers.



BETA VULGARIS L. Sugar beet. ***Chenopodiaceae.***

The root is harvested. Grown usually in small acreages in the northern half of the state.

Yields sucrose (sugar), which is used as a food and flavoring agent.

BETULA LENTA L. Sweet birch, cherry birch, black birch, spice birch. ***Betulaceae.***—An aromatic tree 50 to 80 feet tall; bark of the trunk thick and rough, that of the branchlets shiny and reddish-brown; leaves bright green, ovate, acute, 2½ to 4 inches long, sharply serrate, petioled, alternate; flowers in catkins; fruit a winged nutlet, produced in erect, oval cones about 1 inch long.

The bark of the trunk collected. Rare in the state, occurring in Lee County and in the bogs of Lake County.

Contains an aromatic oil similar to wintergreen oil and the glucoside gaultherin; methyl salicylate is obtained from the glucoside. Used as a flavoring agent, an antiseptic, and an antirheumatic.

BRASSICA ALBA (L.) Boiss. (*Sinapis alba* L.) White mustard, yellow mustard, charlock, kedlock, senvre. ***Cruciferae.***—An erect, spreading-branched, stiff-hairy herb 1 to 2 feet high, annual; lower leaves deeply pinnately lobed and with a large terminal lobe, 6 to 8 inches long; stem leaves tending to be less lobed and lanceolate; flowers yellow, 4-parted, small; pods narrow, about 1 inch long, spreading, constricted between seeds, rough-hairy; seed roundish, pale yellow.

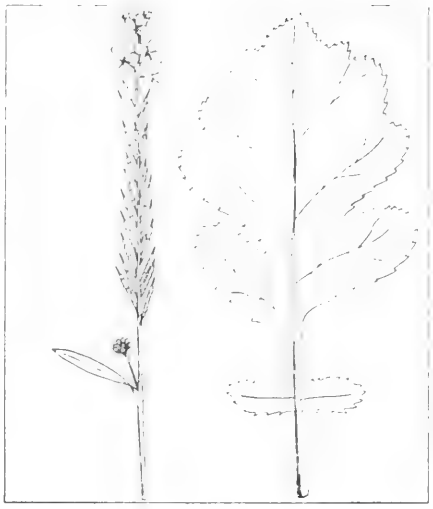
The seed collected when ripe but before the pod is ready to burst. Introduced and often escaping but apparently failing to become established.

Contains the glucosides sinalbin and myrosin, and these in the presence of water form a pungent fixed oil. Used as an emetic and rubefacient.

BRASSICA NIGRA (L.) Koch. Black mustard. ***Cruciferae.*** *U. S. P. XI, pp. 268, 333.*—An erect, alternate-leaved, hairy herb 3 to 6 feet tall, annual; stem branched and spreading above; lower leaves lyrate, with a large terminal lobe; upper leaves entire, lanceolate, tapered at the base; flowers yellow, in long, slender racemes, 4-parted, on erect, appressed pedicels; pods erect, appressed, ½ to ¾ inch long, beaked; seeds dark brown to light reddish-brown, ellipsoidal, reticulated.

The seed collected; may not contain more than 5 per cent of other seeds or foreign organic matter and must yield at least 0.6 per cent of volatile oil of mustard. Frequent as an introduced weed in fields, pastures, and neglected places throughout at least the northern half of the state.

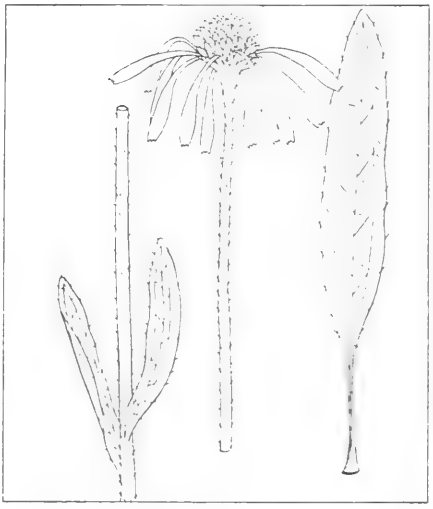
Dried ripe seeds contain sinigrin and myrosin, glucosides yielding volatile oil of mustard. Used as an aid to digestion, an emetic, and a rubefacient.



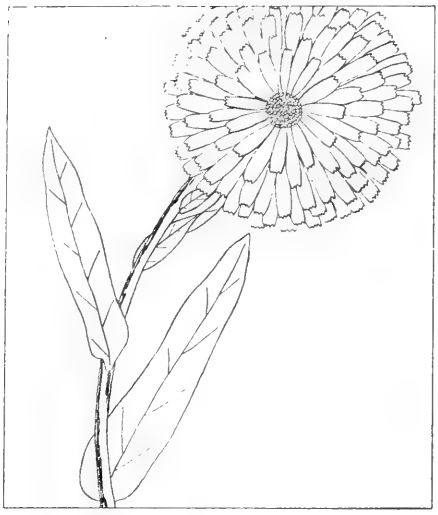
BRAUNERIA ANGUSTIFOLIA (DC.) Heller. Purple cone-flower, narrow-leaved purple cone-flower. ***Compositae.***—An erect, usually unbranched, hirsute herb 1 to 2 feet high, perennial; taproot thick, long, breaking to show numerous black lines radiating from the center to the outer edge of a black circle; stem strict, slender, hispid; leaves lanceolate, pointed at both ends, petioled, 3 to 8 inches long, ½ to 1 inch wide, strongly 3-nerved; flower heads long-peduncled, usually solitary, with spreading, purple rays notched at the tips and about 1 inch long.

The root collected in the fall. In the prairie regions of the state, occasional to frequent as far south as the northern slopes of the Ozarks.

Yields the drug echinacea, which contains resins but no alkaloids. Used as alterative, stimulant, diaphoretic, and sialagogue.



[*Brauneria pallida* (Nutt.) Britt., Kansas snakeroot, and *B. purpurea* (DC.) Britt., black Sampson, occur in prairie regions and along railroad tracks. More abundant than the foregoing species, they probably can be collected without discrimination.]



CALENDULA OFFICINALIS L. Marigold, pot marigold, calendula. ***Compositae.***

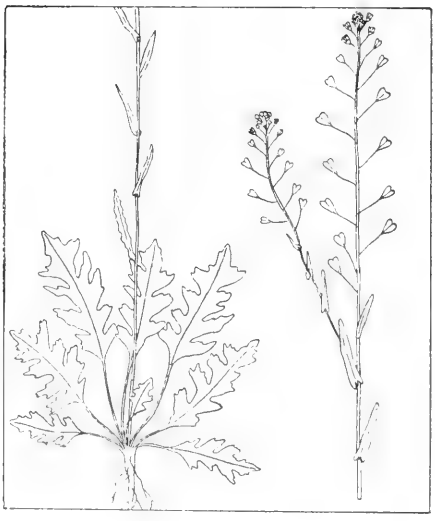
The flower heads collected when in full blossom. Grown extensively in gardens and in greenhouses; not established as an escape.

Contains a volatile oil and a bitter principle. Used as a carminative and mild stimulant.

CANNABIS SATIVA L. Hemp, Indian hemp, red-root, gallow grass, marijuana. ***Urticaceae. U. S. P. XI, pp. lxvii, 104, 155, 169.***—A stout, sparingly branched, rough herb 3 to 6 feet tall, annual; leaves digitately compound, on long, weak petioles, opposite or alternate above; leaflets 5 to 7, linear lanceolate, sharply serrate; flowers small, green, dioecious; pistillate flowers in spikelike clusters; staminate flowers in axillary racemes or panicles; seed yellow to olive-brown, small, ovoid to nearly round, with obtuse edges.

Leaves, seeds, and fruiting tops collected. Established locally, especially near transportation lines, throughout the state; occasionally covers acres.

Contains the resin cannabin and a volatile narcotic oil, from which may be derived the alkaloids cannabinene and tenanocannabine, also cannabinol, a glucoside. Used as a narcotic, analgesic, and sedative.

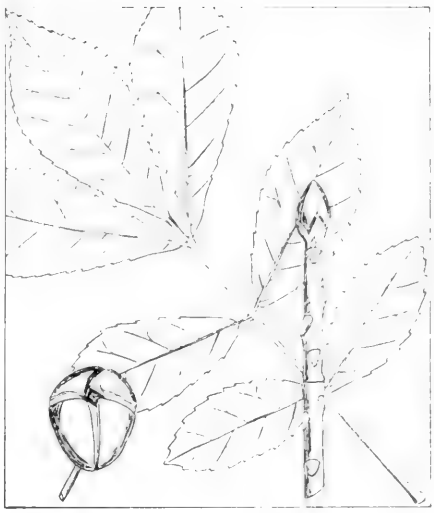


CAPSELLA BURSA-PASTORIS (L.) Medic. Shepherd's purse, pepper plant, case weed. ***Cruciferae.***—An erect, much-branched, smooth herb ½ to 2 feet tall, annual; taproot thin, long, deep; stem slender, pubescent below; leaves variously lobed or toothed, on the stem sessile and arrow-shaped, 2 to 5 inches long, alternate; flowers small, white, 4-parted, pedicellate in slender racemes; pods small, triangular, or purse-shaped.

The herb collected. Introduced and now common in neglected places of all kinds in all parts of the state.

Yields a volatile oil on distillation and has a pungent, bitter taste. Used as a tonic, ascorbutic, and astringent.

CARYA LACINIOSA (Michx. f.) **Loud. King nut, big shell-bark hickory.** ***Juglandaceae.***—A large, shaggy-barked tree 50 to 90 feet tall, with a narrow, oblong crown of short, spreading branches; trunk light gray; twigs somewhat hairy, roughened by orange lenticels; leaves pinnately compound, 15 to 22 inches long, alternate; leaflets 5 to 9, usually 7, sessile except the stalked terminal one, dark green above, pale and soft hairy beneath, sharp-pointed, finely toothed; nut husks 1 to 2½ inches in diameter, roughened with orange lenticels; nuts prominently 4- to 6-ridged.



The bark collected. Occasional on rich, overflowed bottomlands from Peoria County southward.

Medicinal contents unknown. Used as a cathartic.

[*Carya ovata* (Mill.) K. Koch, shag-bark hickory, is also collected and used as the foregoing.]

CASSIA MARILANDICA L. American senna. ***Leguminosae.***—An erect, coarse, smooth herb about 3 feet tall, perennial; stems often in clumps; leaves pinnately compound, alternate; leaflets ovate-oblong, 1 to 2 inches long, about ½ inch wide, in 6 to 9 pairs; petiole with a sessile, club-shaped gland at the base; flowers yellow, in short axillary racemes; pod linear, flat, curved, partitioned, 2 to 4 inches long; seeds flattened, grayish-brown with a darker area on each side.

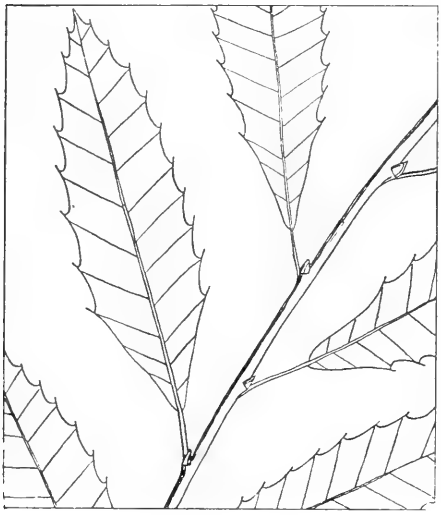
Leaflets collected. Occasional to frequent along roadsides and in fields and pastures on alluvial soils throughout the state.

Contains glucosides similar to those of the imported sennas. Used as a cathartic.

CASTALIA ODORATA (Ait.) **Woodville & Wood. Sweet-scented water lily, white pond lily.** ***Nymphaeaceae.***—A large, aquatic, stemless herb, perennial; rhizome very large, rough, and knotty, up to 6 feet long, thick as an arm; leaves floating, glossy, dark green, orbicular, cordate-cleft to the petiole, 6 to 10 inches wide, crimson- or purple-tinged beneath; petioles semicircular in section, as long as the water is deep; flowers floating, white, pink, or rose, very sweet-scented, 3 to 6 inches wide, on round stalks; fruit maturing under the water, globose, many-seeded.

The rhizome collected. Frequent to abundant in lakes and river sloughs, in extreme northeastern counties and along the Illinois and Rock rivers; infrequent southward.

Contains tannic and gallic acids. Used internally and topically as an astringent.



CASTANEA DENTATA (Marsh.) **Borkh. Chestnut.** ***Fagaceae.***

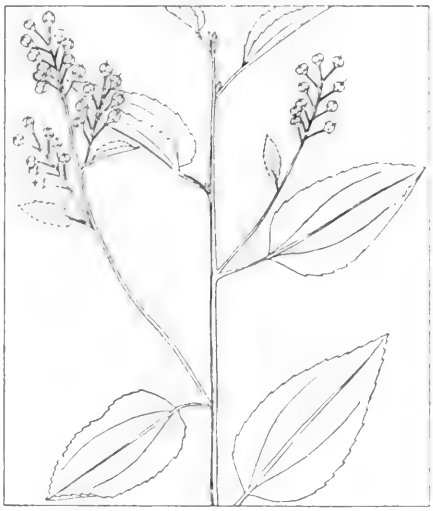
The leaves collected in September or October while still green and bright. Infrequent as a shade or ornamental tree; planted as a nut orchard tree in several localities; no longer native.

Contains tannin. Used as a tonic and astringent.

CAULOPHYLLUM THALICTROIDES (L.) Michx. Blue cohosh, squaw-root, blueberry root. ***Berberidaceae.***—An erect, unbranched, smooth herb 1 to 2½ feet tall, perennial; rhizome horizontal, knotty, somewhat branched; stem glaucous; leaf 1, large, triternately compound; leaflets oval, 3- to 5-lobed at the tip, 1 to 3 inches long; flowers greenish-purple, up to ½ inch wide, in a terminal panicle; seeds blue, fleshy, borne on stout, short stalks.

The rhizome and roots collected. Common in rich woods throughout the state.

Yields the drug caulophyllin; contains two resins and a principle analogous to saponin, as well as glucosides and the alkaloid methylcytisine. Used as an alterative, a diuretic, and an emmenagogue.



CEANOTHUS AMERICANUS L. New Jersey tea. ***Rhamnaceae.***—A freely branching shrub 2 to 4 feet high; rootstock dark red; stems pubescent when young; leaves oblong-ovate, serrate, 2 to 3 inches long, strongly 3-ribbed, alternate, short-petioled; flowers white, in dense clusters at the ends of long terminal or axillary peduncles, 5-parted; fruit a bluntly triangular, dry, leathery capsule containing 3 smooth, light brown, small seeds.

Leaves, rootstock, and bark of the rootstock are collected. Frequent in dry, usually woody situations in the northern quarter of the state; becoming rare southward; flowering in June and early July.

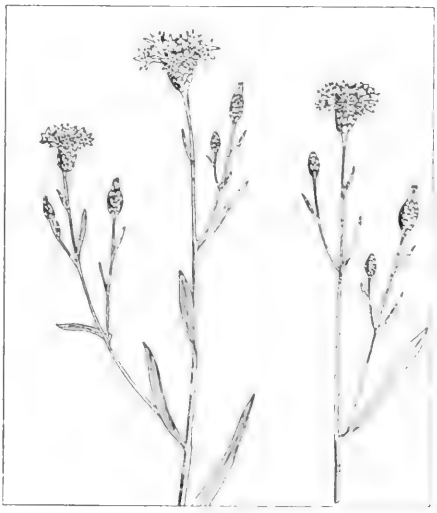
Contains tannin and the active principle ceanothin, which tends to increase blood clotting in wounds. Used as an astringent.

CELASTRUS SCANDENS L. Bittersweet, false bittersweet, American bittersweet. ***Celastraceae.***—A twining, woody, smooth vine; stems moderately slender, climbing to 20 or 30 feet; leaves ovate, pointed, 4 to 5 inches long, finely serrate, short-petioled, alternate; flowers small, greenish-yellow, in racemes; fruit an orange capsule that opens and folds backward to expose 3 crimson, seed-containing arils.

Bark of the root, also that of the stem, collected. Abundant to rare in woods and along fences, more or less throughout the state.

Medicinally effective constituents unknown; said to contain euonymin. Used as a diaphoretic, diuretic, alterative, and mild narcotic, also as an insecticide.

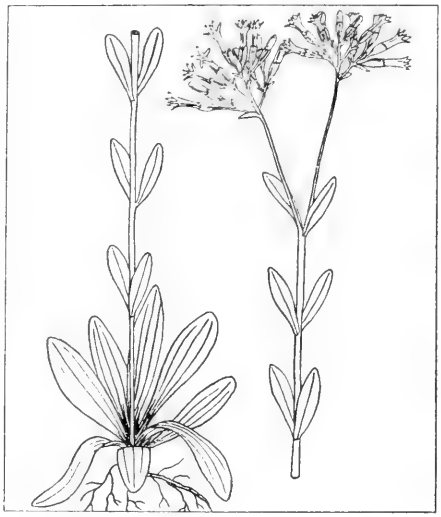
[The true bittersweet is *Solanum Dulcamara;* it and the above should not be confused.]



CENTAUREA CYANUS L. Cornflower, bachelor's button. ***Compositae.***

Commonly grown, and persisting, in home gardens throughout the state.

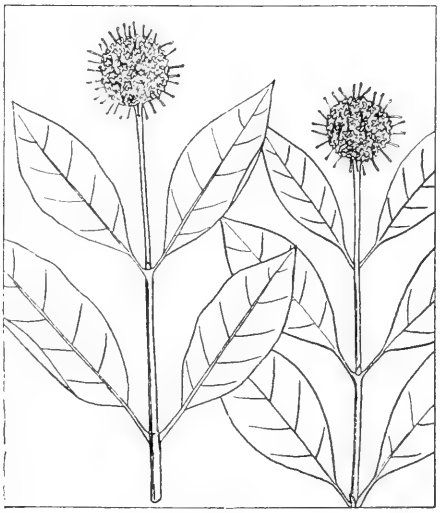
Contains the glucoside cyanin.



CENTAURIUM UMBELLATUM Gilib. (*Erythraea Centaurium* Pers.) Centaury, bloodwort, bitter herb. ***Gentianaceae.***—An erect, usually branched, smooth herb 4 to 20 inches tall, annual; leaves oblong, obtuse, narrowed at the base; basal leaves 1 to 2½ inches long; stem leaves opposite, sessile; flowers purplish-rose, ½ to ¾ inch long, in terminal, dense, compound cymes; fruit an oblong, 2-celled, many-seeded capsule.

The herb collected. Not known to be established in the state but might be found in the vicinity of large cities; should not be confused with American centaury.

Contains several active principles, including erythrocentaurin. Used as a tonic and febrifuge.

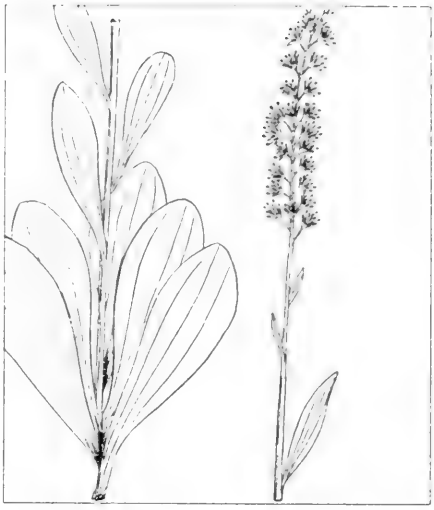


CEPHALANTHUS OCCIDENTALIS L. Buttonbush. ***Rubiaceae.***—A spreading smooth shrub 4 to 10 feet tall; stems often rough-barked; leaves oval to lanceolate, pointed, 3 to 5 inches long, opposite, petioled, entire-margined, more or less hairy beneath; flowers white, small, in dense, globular, peduncled heads; fruit a small capsule, arranged in the same dense, globular heads as the flowers.

The bark collected. Abundant in low, wet ground about swamps, ponds, and sloughs and along slow-moving streams.

Contains tannin, a substance similar to saponin, two resins, and the glucosides cephalanthin and cephalin. Used in the treatment of fevers.

CHAMAELIRIUM LUTEUM (L.) **Gray. Star root, false unicorn root, grub root, blazing star, devil's bit, starwort.** ***Liliaceae.***—An erect, unbranched, slightly fleshy, smooth herb 1½ to 2 feet tall; rootstock tuberous, ½ to 2 inches long and curved upward at one end like a horn, dark brown, wrinkled, fibrous-rooted; stem wandlike; basal leaves spatulate, obtuse, tapered below, 2 to 8 inches long; stem leaves lanceolate, sessile, smaller; flowers white, small, starlike, in a terminal, narrow raceme; fruit a many-seeded, ovoid, membranous pod.

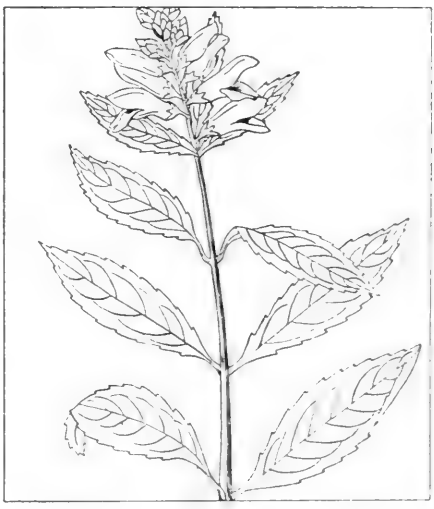


The rootstock collected in the fall. Extremely rare in low ground in the southern tip of the state.

Contains the bitter principle chamaelirin. Used as a uterine tonic and anthelmintic.

[The true unicorn root is *Aletris farinosa,* or star grass; it and the above are not to be confused.]

CHELONE GLABRA L. Balomy, turtlehead, true snakehead. ***Scrophulariaceae.***—An erect, slender, smooth herb 1 to 3 feet tall, perennial; stem not usually branched, obtusely 4-sided; leaves lanceolate, acuminate, serrate, 3 to 6 inches long, opposite, short-petioled; flowers white to purplish, 2-lipped, about 1 inch long, in terminal, dense, bracted spikes; fruit an ovoid, many-seeded capsule.



The herb collected, also the leaves alone. Frequent in swampy places, wet woods, and along streams throughout the state.

Contains an unidentified bitter principle. Used as a laxative and purgative.

CHENOPODIUM ALBUM L.

Lamb's quarters, pigweed. ***Chenopodiaceae.***—An erect, branched, white-mealy herb 2 to 8 feet tall; stems angular or ridged; leaves ovate-lanceolate, gray-green above, white-mealy beneath, 1 to 4 inches long, coarsely few-dentate, 3-nerved; flowers greenish, small, sessile, in spikes clustered in the upper leaf axils; seed small, glossy black, lens-shaped.

The pollen collected, rarely the leaves. Common in waste places about homes and farm buildings throughout the state; a weed.

An extract of the pollen is used to a slight extent as a hay fever antigen; the leaves are said to be antiscorbutic.

CHENOPODIUM AMBROSIOIDES L., var. ANTHELMINTICUM (L.) Gray.

Wormseed. ***Chenopodiaceae. U. S. P. XI, p. 251.***—An erect or decumbent, much-branched, spreading, strong-scented herb 1 to 3 feet high, annual; stems angular, ridged; leaves bright green, variable, ovate, deeply to shallowly sinuate, thin, smooth, not mealy, 1 to 5 inches long, alternate, glandular beneath; flowers greenish, small, in dense, small, axillary clusters; seed minute, glossy, brown to black, lens-shaped.

Flowering and fruiting parts, and the seed especially, collected. Introduced; occasional or frequent in yards, fields, and waste places.

Yields a volatile oil, which contains the active principle ascaridol. The oil is used only as a vermifuge for roundworms, hookworms, and intestinal amoebae.

CHIONANTHUS VIRGINICA L.

Fringe-tree. ***Oleaceae.***

The bark of the root collected. Frequently planted as an ornamental.

Contains the bitter glucoside chionanthin. Used as a tonic, diuretic, febrifuge, and alterative.

CICHORIUM INTYBUS L. Chicory, coffee weed, succory, blue sailors. ***Compositae.***—An erect, much-branched, pubescent herb 2 to 3 feet high, perennial; taproot large, deep; stem stiff, hispid, round, hollow; juice milky; leaves oblong to lanceolate, clasping, entire to dentate or (the lower) pinnatifid, 1 to 6 inches long, alternate, hairy; flower heads blue, 1 to 1½ inches wide, 1 to 4 together in clusters on the nearly leafless branches.

The root is collected. Common along roadsides and railroads and in pastures and fields throughout the state.

Contains inulin and the bitter glucosidal principle chicorin. Used to increase appetite and aid digestion; also as an adulterant of coffee and as a coffee substitute.

CICUTA MACULATA L. Hemlock, water hemlock, musquash root. ***Umbelliferae.***—An erect, stout, branched, smooth herb 3 to 6 feet tall, perennial; roots fleshy, tuberous; stems pointed, purple-streaked, hollow but with internal partitions at the base; leaves ternately decompound, often 1 foot long, alternate; leaflets lanceolate, serrate, acuminate, 1 to 5 inches long, the veins leading to the marginal notches; flowers white, small, in compound, loose, terminal umbels; seeds broadly oval, flat on one side, 5-ridged on the other side.

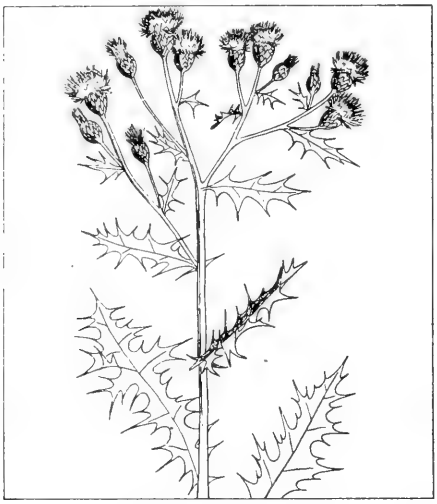
Roots, rootstocks, and seed collected. Widespread, occasional, or, sometimes, abundant in wet meadows and pastures throughout the state.

Contains a yellowish aromatic oil and the resinlike poison cicutoxin. Used, though rarely, because of its extreme poisonousness, in cases of barbital poisoning.

CIMICIFUGA RACEMOSA (L.) Nutt. **Black cohosh, black snakeroot, squaw-root, rattle root.** ***Ranunculaceae.***—An erect, several-stemmed herb, 4 to 8 feet tall, perennial; rhizome thick, horizontal, knotty and rough, dark brown, 2 to 6 inches long, with the form of a cross inside when broken; stems slender, not usually branched, leafy about midway to the top; leaves bright green, decompound, very large, 2 or 3 in number, alternate; leaflets thin, smooth, cut-serrate, 1 to 3 inches long; flowers white, ½ inch wide, ill-scented, numerous, in a long, terminal raceme, opening from the base to the top; fruit a dry pod about ¼ inch long.

The rhizome and roots collected after the fruit has ripened. Rare and very local in rich, open woods in the extreme southern part of the state.

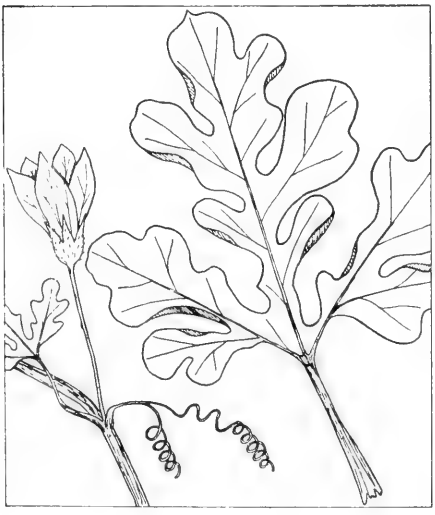
Contains several resins and tannin. Used as a tonic, astringent, bitter, and sedative.



CIRSIUM ARVENSE (L.) Scop. **Canada thistle.** ***Compositae.***—An erect, heavily spine-armed, rigid, branched, nearly smooth herb 1½ to 3 feet high, perennial; rootstock and root system creeping, extensive, deep; leaves oblong, irregularly much-lobed and armed with long, spiny teeth, alternate; flower heads rose-purple, 1 inch wide, their bracts spineless, in terminal and axillary clusters; seeds light to dark brown, small, capped by a cottony tuft of hairs which soon is lost.

The leaves, also the root, collected. Widely distributed in the state as a weed of fields and waste places.

Used as an antiphlogistic, tonic, and diuretic.



CITRULLUS VULGARIS Schrad. **Watermelon.** ***Cucurbitaceae.***

Seed of the black-seeded varieties collected. Cultivated in farm gardens in all parts of the state and as an important crop in most of the state's sand regions.

Contains a resin-yielding cucurbital and a fixed oil. Used as a diuretic and anthelmintic.

CLAVICEPS PURPUREA (Fries) **Tul. Ergot.** *Clavicipitaceae. U. S. P. XI, lxix, 147, 171.*—The darkened, enlarged, fungus-filled grains of rye infected with the disease known as ergot. Ergot grains are several times the size of normal grains, violet to almost black, curved, hard, and hornlike; they protrude conspicuously from rye heads in the field, and in threshed grain they can be easily recognized by their size, color, and hardness.

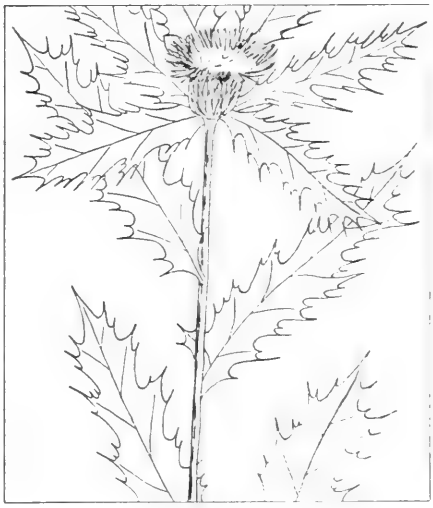
The ergot collected. Occurs sporadically as a rye disease and is often abundant on rye growing in wheat; in all parts of the state.

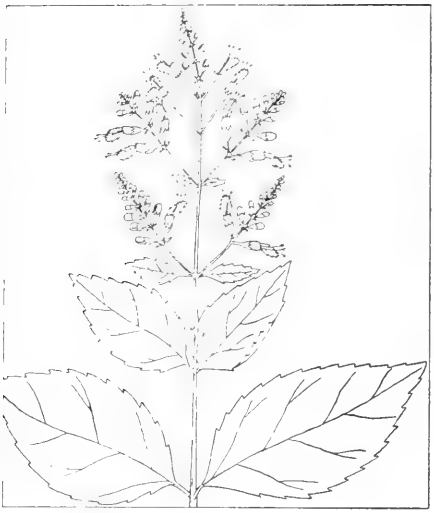
Contains the alkaloids ergonovine, ergotoxine, and ergotamine, also tyramine and histamine. Used in obstetrical practice to induce contraction of the uterus and to relieve hemorrhage.

CNICUS BENEDICTUS L. Blessed thistle. *Compositae.*—An erect, hairy, spiny-leaved herb, up to 2½ feet tall, annual; stems much branched; leaves oblong-lanceolate, dentate or lobed and spiny, 3 to 6 inches long, the uppermost clasping the stem, alternate; flower heads yellow, 1 inch wide, sessile, and solitary among the leaves at the ends of branches; bristles capping the seed in 2 rows, the inner row longer and stronger than the outer.

Leaves and flowering tops are collected in the first blooming, also the seed when ripe. Occasionally grown in herb gardens and for ornament, but not known to have escaped from cultivation.

Contains the principle cnicin. Used as a bitter tonic and as a uterine sedative and hemostatic.

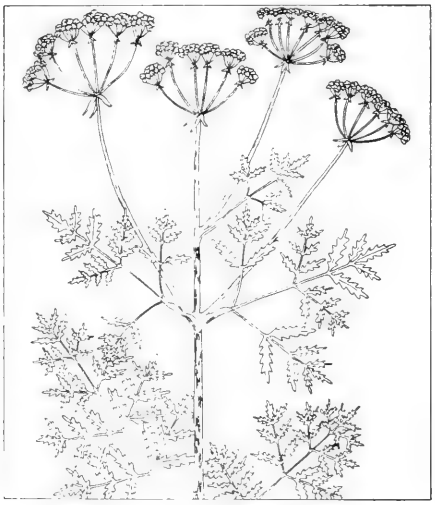




COLLINSONIA CANADENSIS L. Stone-root, horse balm, citronella. *Labiatae.*—An erect, somewhat branched, aromatic, smooth herb 2 to 3 feet tall, perennial; rootstock thick, hard; stem stout, often glandular above; leaves ovate, acuminate, dentate, 6 to 10 inches long, slender-petioled or the upper ones sessile, opposite; flowers light yellow, about ½ inch long, 2-lipped, lemon-scented, in racemes on the branches of a large panicle.

The roostock and the herb collected. From Champaign County south and southwestward in dry, rich woods, becoming common in the Ohio River valley; rare in the north.

Contains a glucoside and a resin; the leaves also contain a volatile oil. The root is used as a diuretic and tonic.



CONIUM MACULATUM L. Poison hemlock, deadly hemlock, poison parsley. *Umbelliferae.*—An erect, branched, smooth herb 2 to 5 feet tall, biennial; taproot large, white, parsnip-like; stem stout, ridged, purple-spotted, hollow; leaves decompound, large; leaflets ovate, dentate, thin; flowers white, small, in large, open, compound umbels terminal on branches; umbels bracted; seeds gray-brown, small, oval, granular, conspicuously wavy-ribbed.

Fruit is gathered green but fully developed and the leaves are collected at flowering time. Formerly cultivated; escaped and now locally established along roadsides, in pastures, and on waste ground throughout the state.

Contains the volatile, poisonous alkaloid coniine, also conhydrine and methylconiine. Used as an antispasmodic, sedative, and anodyne. Both the fresh plant and the dried fruit are highly poisonous.

CONVALLARIA MAJALIS L. Lily of the valley. *Liliaceae.*—A low, stemless, smooth herb 4 to 12 inches tall, perennial; rootstock slender, running; roots fibrous, numerous; leaves 2 to 3 in number, broad-bladed, parallel-veined, and smooth-margined, 4 to 12 inches long; flowers white, ¼ inch wide, fragrant, drooping, in loose, 1-sided racemes on a somewhat angular flower stalk up to 12 inches tall; fruit a few-seeded, small, red berry.

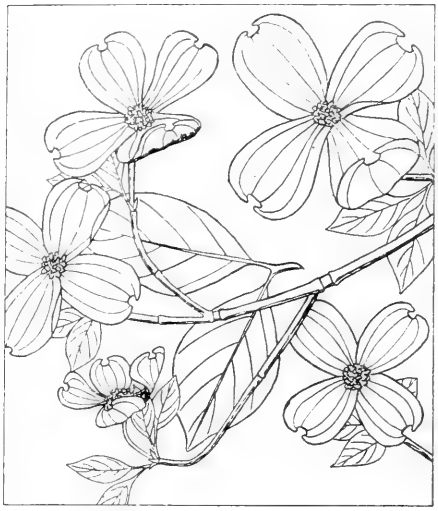
Rootstock and roots collected, also flowers. Introduced; grown commercially for the blossoms and for decoration about homes; persistent about abandoned home sites.

Contains two glucosides, convallarin and convallamarin. Used as a cardiac tonic.

CORALLORRHIZA ODONTORHIZA (Willd.) Nutt. Coral root, Crawley root. *Orchidaceae.*—A yellow-brown to purplish, leafless, rootless herb 6 to 16 inches tall, perennial; rootstock coral-like, branched, bulbous, large, and massed; stem upright, smooth, scaly below; flowers dull purple to white and crimson-spotted, small, 6 to 20 in number in a loose terminal raceme; fruit an oblong reflexed pod ¼ to ½ inch long.

The rootstock collected. Widely distributed throughout the state but localized to sandy, humus-bearing soil of black oak and white oak woods.

Medicinally effective constituents unknown. Used as a diaphoretic.

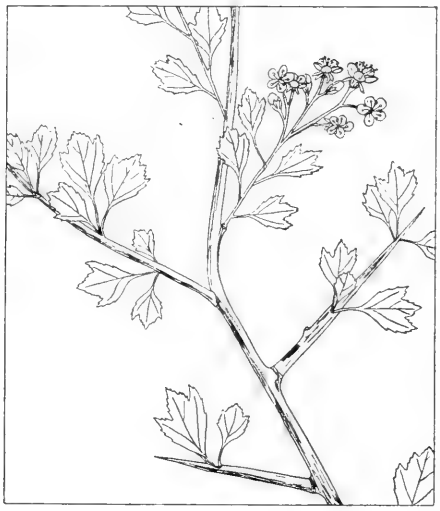


CORNUS FLORIDA L. Flowering dogwood. ***Cornaceae.***—A small, bushy, flat-crowned tree 10 to 30 feet tall; branches and branchlets spreading, slender, up-tilted at the ends; leaves bright green, firm, oval, pointed, 3 to 6 inches long, opposite; flowers small, greenish, in clusters surrounded by large, white, petal-like bracts notched at the apex; fruit a bright scarlet drupe containing 1 or 2 pale brown seeds.

The bark of the roots collected. Frequent, often abundant, in rich, dry woods throughout the state south of the Rock River.

Contains the bitter principle cornin, or cornic acid, also gallic acid and tannin. Used as a tonic and astringent.

[*Cornus circinata* L'Her., round-leaved dogwood, *C. Amomum* Mill., silky dogwood, and perhaps other species also collected.]



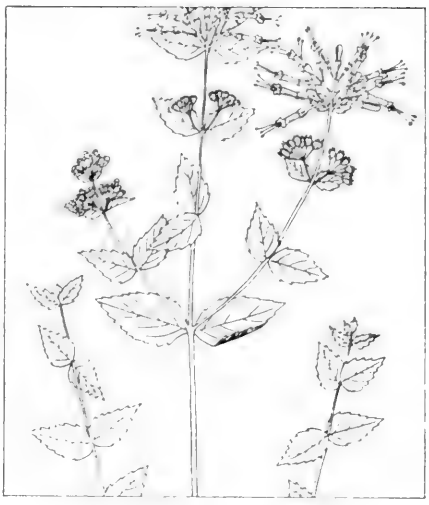
CRATAEGUS OXYACANTHA L. (*C. monogyna* Jacq.) Hawthorn, English hawthorn. ***Rosaceae.***

The fruit collected and, when dried, sold as hawthorn berries. Grown about dwellings as an ornamental tree; rare as an escape in a few widely separated localities.

CUCURBITA PEPO L. Pumpkin. ***Cucurbitaceae.***

Seed collected. Grown as a market and garden vegetable throughout the state.

Contains an active resin. Used as an anthelmintic.



CUNILA ORIGANOIDES (L.) Britt. Dittany, stone mint. *Labiatae.*—A tufted, much-branched, aromatic herb 8 to 20 inches tall, perennial; stems slender, stiff, purplish, smooth; leaves ovate, serrate, sessile, ½ to 1½ inches long; flowers purple-pink, 2-lipped, half as long as the 2 stamens, numerous in terminal, loose clusters.

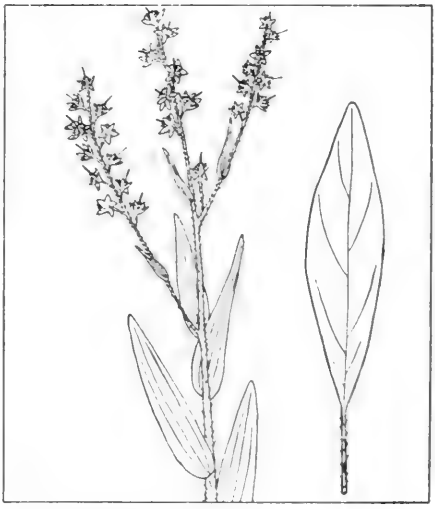
The herb collected. Infrequent on summits and slopes of dry, wooded ridges in the Ozark region of Illinois; rare northward to Shelby and Macoupin counties.

Contains a fragrant volatile oil. Used as an aromatic, stimulant, and carminative.

CYDONIA VULGARIS Pers. Quince. *Rosaceae.*

The seed collected to some extent in the United States but most of the quince seed used in the American drug trade imported from Persia and Spain. Grown occasionally in home and farm plantations and to a small extent in orchards.

Contains mucilage. Used as a demulcent.



CYNOGLOSSUM OFFICINALE L. and other species. Hound's tongue, wild comfrey. *Boraginaceae.*—An erect, leafy, branched, hairy herb 1½ to 3 feet tall, biennial; stems stout, leafy to the top; basal leaves oblong, 6 to 12 inches long, smooth-margined, slender-petioled; upper leaves sessile or clasping, lanceolate; flowers reddish purple, about ¼ inch wide, 5-parted, numerous in several racemes; fruit an aggregate, ½ inch wide, of 4 prickle-studded nutlets.

The leaf and root collected. Introduced, escaped, and naturalized throughout the state; often common along transportation lines and in dry field and woods pastures.

Contains the principle consolidin and the alkaloid cynoglossine. Used as a demulcent and sedative.

CYPRIPEDIUM PARVIFLORUM Salisb. Yellow lady's slipper, nerve root, American valerian, yellow Indian shoe. *Orchidaceae.*—An upright, glandular hairy, ill-smelling herb 1 to 2½ feet tall, perennial; rhizome horizontal, crooked, bearing tufted, thick, fibrous roots; stems hairy, leafy; leaves oval, 2 to 6 inches long, 3 or 4 in number, strongly parallel-ribbed, alternate; flower pale yellow, lined or blotched with purple, much inflated and slipper- or moccasin-shaped, the "slipper" ½ to 1 inch long, sepals purplish.

Rhizome and roots collected in fall. Rare in boggy places in northern half of state.

Contains a minute quantity of volatile oil, a volatile acid, and a glucosidal resin. Used as a mild nervous stimulant and antispasmodic.

[Var. *pubescens* (Willd.) Knight, large yellow lady's slipper, with "slippers" 1 to 2 inches long, is rare to infrequent in moist or dry woods probably throughout state. Collected and used without distinction.]

DATURA STRAMONIUM L. Jamestown weed, thorn apple, Jimson weed. *Solanaceae. U. S. P. XI, p. 360.*—An erect, coarse, branched, smooth herb 1 to 3 feet tall, annual; stem coarse, green, its branches spreading; leaves large, ovate, irregularly and angularly toothed or lobed, up to 8 inches long, strongly scented, alternate, petioled; flowers white, large, about 4 inches long, standing on short peduncles in the axils of the branches; fruit an ovoid, densely prickly capsule about 2 inches long.

Leaves and flowering tops collected when plant is in flower, also seed when mature. Infrequent to common as a weed in fields, waste places, and cattle yards on farms.

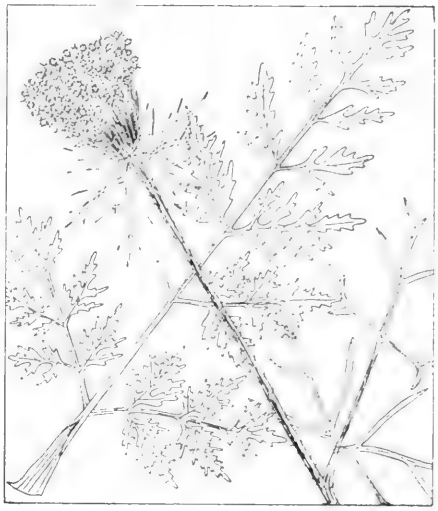
Contains the alkaloids hyoscyamine, atropine, and scopalomine. Used as an antispasmodic, especially in asthma, an anodyne, and a narcotic.

[*Datura Tatula* L., purple thorn apple, differs from Jamestown weed in that it is more robust, reaching a height of 5 feet, and has a purple stem and pale purple flowers. It is not usually distinguished from Jamestown weed.]

DAUCUS CAROTA L. Carrot, wild carrot, Queen Anne's lace, bird's nest, devil's plague. ***Umbelliferae.***—An erect, branching, bristly hairy herb 1 to 3 feet tall, biennial; taproot large (the vegetable carrot); stem slender, ridged, hollow; leaves pinnately decompound, the basal leaves with long petioles, the upper leaves with stem-sheathing bases; leaflets dentate or pinnately lobed or cut; flowers white, sometimes pink, small, numerous in compound umbels surrounded by cleft, linear, long bracts; umbels, as the fruit matures, becoming concave and forming a "bird's nest"; seed light gray-brown, oblong, flat on one side, bristly and prickly along the ribs on the other.

The seed, when mature, collected. Introduced; infrequent to common throughout the state as a naturalized plant and weed.

Contains a volatile oil. Used as a stimulant, diuretic, and aromatic.



DELPHINIUM AJACIS L. Annual larkspur, rocket larkspur. ***Ranunculaceae.***—An erect, somewhat branched, finely pubescent herb up to 3 feet tall, annual; leaves finely cut into very narrow, acute segments, alternate, the lower leaves petioled, the upper sessile; flowers blue to white, with a slender, backward-reaching spur, about 1 inch long; fruit an erect, pubescent pod.

The seed collected. Introduced; occurs sparingly to frequently in fields and woods in many parts of the state; most abundant in the extreme south.

Contains several alkaloids and the glucoside delphinin. Used as an insecticide for the destruction of body parasites.

[*Delphinium carolinianum* Walt., Carolina larkspur, seed is collected when mature.]

DICENTRA CANADENSIS (Goldie) Walp. Turkey corn, squirrel corn. *Fumariaceae.*—A low, stemless, smooth herb 5 to 10 inches tall, perennial; rhizome slender, scaly, creeping, bearing clusters of pealike or kernel-like yellow tubers; leaves ternately compound, 10 to 12 inches long; leaflets glaucous beneath, deeply cut into numerous linear lobes; flowers greenish-white tinged with rose, somewhat flattened and heart-shaped, 4 to 10 in a loose raceme at the end of a slender flower stalk. (Above ground, this plant greatly resembles *Dicentra Cucullaria* (L.) Torr., Dutchman's breeches, which is sometimes collected, also.)

The bulbous tubers are collected. Common, but usually not abundant, on rich, wooded slopes throughout the state.

Contains several alkaloids, including corydaline and the toxic cucullarine. Used as a tonic, diuretic, and alterative.

DIGITALIS PURPUREA L. Digitalis, foxglove. *Scrophulariaceae. U. S. P. XI, pp. 136, 137, 397, 485.*

Leaves collected from the second year's growth. Grown in gardens throughout the state; not known to have become established as an escape.

Contains several glucosides, among which digitoxin, digitalin, and digitonin are the most active. Of great use as a stimulant in treating heart disorders.

DIOSCOREA VILLOSA L. Wild yam, colic-root, rheumatism root, devil's bones. ***Dioscoreaceae.***—A twining herbaceous vine up to 15 feet long, perennial; rootstock slender or stout (to ½ inch in diameter), horizontal, woody; stems slender, smooth; leaves heart-shaped, long-pointed, parallel-veined, 2 to 6 inches long, petioled, pale and pubescent beneath; flowers greenish-yellow, small; male flowers in drooping panicles; female flowers in drooping racemes; fruit a strongly 3-winged, membranous, yellowish-green capsule.

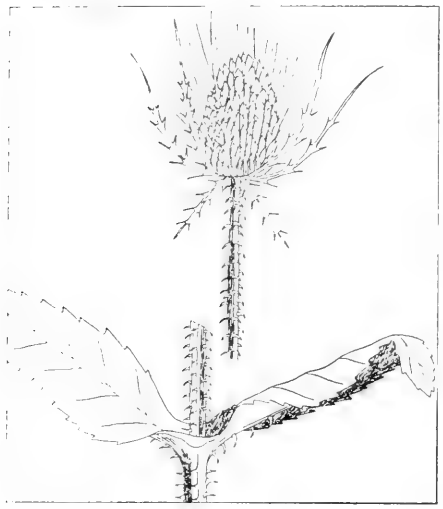
The rootstock collected in the fall. Rare in the southern half of the state, becoming more frequent northward, in moist, rich woods.

Contains an acrid resin and a saponin-like glucoside. Reputedly useful as a uterine sedative and hemostatic.

DIOSPYROS VIRGINIANA L. Persimmon. ***Ebenaceae.***—A less than moderately large, round-topped tree, 25 to 30 feet tall; trunk dark gray to dark brown, its bark square-plated; branches spreading and drooping; leaves oval, pointed, leathery, shiny dark green, 4 to 6 inches long, petioled, alternate; female flowers greenish to creamy white, solitary on short stalks in the leaf axils; male flowers in clusters of 2 or 3; fruit globular, fleshy, astringent when green, reddish-yellow and sweet when ripe (after frost).

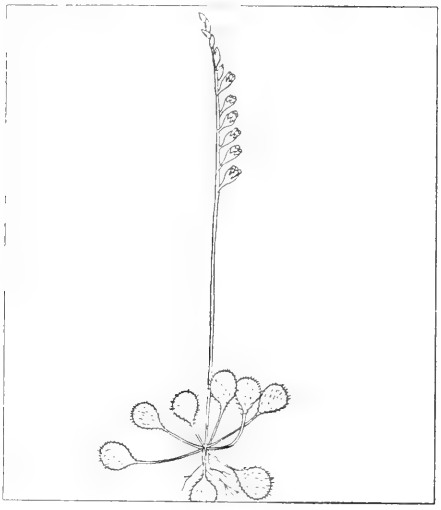
The fruit is collected while still unripe; also the bark. Occurs as a scattered tree in dry woods from Peoria County southward, becoming increasingly common southward.

Contains tannin, gallic acid, and pectin. Used as an astringent, chiefly in internal hemorrhage.



DIPSACUS SYLVESTRIS Huds. Teasel. ***Dipsacaceae.***—An erect, branched prickly herb 3 to 9 feet tall, biennial; stem stiff, stout, angled, coarsely prickly; leaves lanceolate, the lowest leaves sessile, veiny, and very spiny; the stem leaves tending to be connate around the stem, prickly on the margins, irregularly serrate; flowers lilac, small, in dense, cylindric, long-bracted heads 3 to 4 inches long; the head at maturity furnished with numerous long, straight, stiff, barbed awns.

The seed collected. Introduced and naturalized; an infrequent to common plant along transportation lines and roads and in fields and waste places; sometimes a troublesome weed.



DROSERA ROTUNDIFOLIA L. Sundew, round-leaved sundew. ***Droseraceae.***—A low, small, insect-catching herb with flat, round, tentacled leaves ¼ to ½ inch long, which spread on flat petioles up to 2 inches long; flowers red to white, small, in a 1-sided raceme at the top of a 4- to 10-inch flower stalk.

The herb in flower collected. Rare in sphagnum and tamarack bogs in extreme northeastern counties.

Furnishes a bitter, acrid resin. Used as a pectoral.

EPIGAEA REPENS L. Gravel plant, trailing arbutus, ground laurel, May-flower. ***Ericaceae.***—A prostrate, running, low, evergreen shrub up to 4 inches high; stems woody, spreading, rooting at the joints, clothed with stiff, brown hairs; branches upright or trailing, glandular-hairy; leaves oval, leathery, cordate, 1 to 3 inches long, alternate; flowers pinkish, waxy, very fragrant, in small clusters in the axil of the topmost leaf.

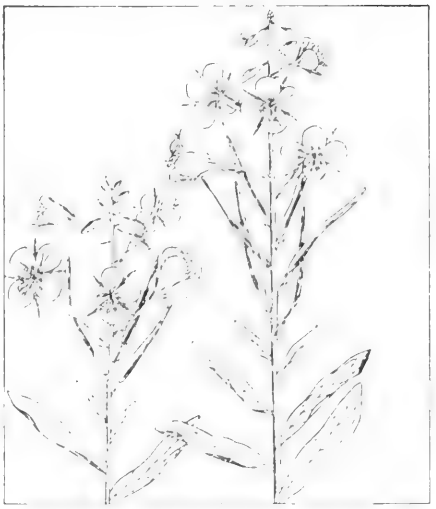
The leaves collected at flowering time. Infrequent to rare, and local, in sandy woods in the extreme northeastern corner of the state.

Contents said to be similar to those of *Arctostaphylos Uva-ursi.* Used as a substitute for or in place of Uva-ursi.

EPILOBIUM ANGUSTIFOLIUM L. Great willow herb. *Onagraceae.*—An erect, unbranched, smooth herb 4 to 7 feet tall, perennial; rootstocks creeping; stems somewhat stout and woody, reddish; leaves lanceolate, sessile, with smooth or undulating margins, alternate, distant; flowers purplish, showy, in long, terminal racemes; fruit a reddish brown, linear, many-seeded capsule 2 inches or more long; seeds with a tuft of long hairs on one end.

The leaves and root collected. Rare, or at most infrequent, in wet, sandy soil in the extreme northeastern part of the state.

Medicinally active contents unknown. Said to have value as a tonic, astringent, demulcent, and emollient.



EQUISETUM HYEMALE L. Scouring rush, tall scouring rush, rough horsetail. *Equisetaceae.*—An evergreen, leafless, usually unbranched, jointed herb 1 to 5 feet tall, perennial; stems stiff, rough, hollow, sheathed at the joints; cones terminal, pointed; rootstock horizontal.

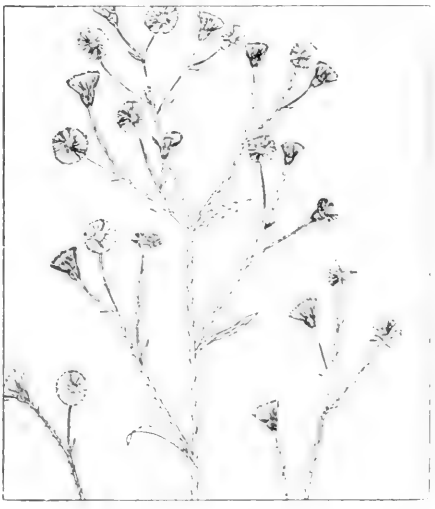
The herb, that is the reed, collected. Infrequent, but sometimes in large colonies, in moist sandy soil along stream banks throughout the state.

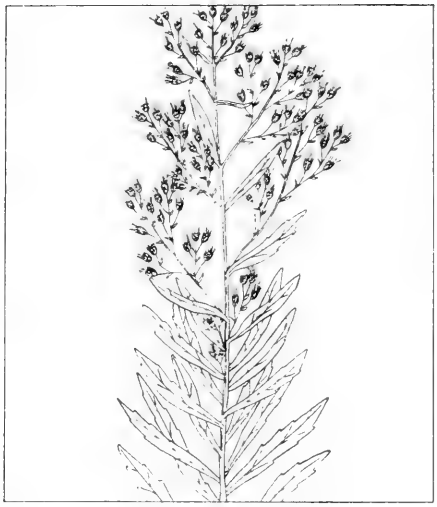
Contains aconitic acid and, probably, the alkaloidal nerve poison equisitine.

ERIGERON ANNUUS L. Fleabane, white top, sweet scabious. *Compositae.*—An erect, upwardly branched herb 6 inches to 5 feet tall, annual or biennial; root fibrous, stem stout, usually hairy; leaves ovate, the lower obtuse, with margined petioles, coarsely dentate, the upper acute, mostly sessile, serrate at the middle; flower heads white or purple-tinged, numerous, about ½ inch wide, in few-flowered clusters terminal on the stem and branches arising from the axils of upper leaves; seeds small, straw-colored, crowned with fragile bristles.

The herb collected. Frequent to common as a weed in fields and pastures and along roadsides throughout the state; blossoming from mid-June to mid-July.

For contents and uses, see *Erigeron canadensis.*



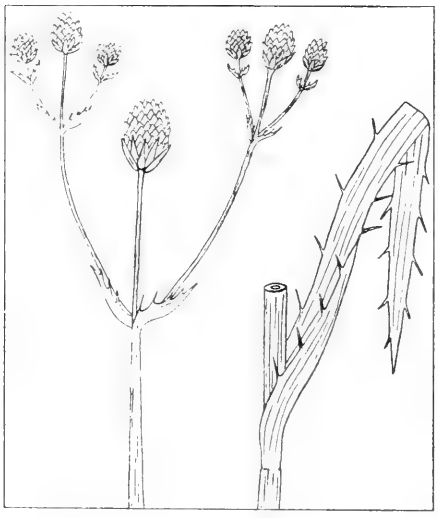


ERIGERON CANADENSIS L. Canada fleabane, mare's-tail, horse-weed, bitter-weed, hog-weed. ***Compositae.***—An erect, unbranched, bristly hairy herb 6 inches to 6 feet tall, annual; stem wand-like; leaves somewhat hairy, alternate, the lower spatulate, petioled, and dentate, the upper linear-lanceolate, sessile, often entire; flower heads greenish-white, small, very numerous, in panicled clusters on numerous axillary and terminal floral branches at the top of the plant.

The leaves and tops are collected while the plant is in bloom. Common as a weed and frequent in open woods and pastures throughout the state; blossoms from mid-August to mid-September.

Contains a volatile oil (oil of fleabane), tannin, gallic acid, and a bitter extractive. Used as a diuretic, tonic, and astringent.

[*Erigeron philadelphicus* L., daisy fleabane, purple-flowered and blossoming in May and June, is collected as other *Erigeron* species and contains the same volatile oil.]



ERYNGIUM AQUATICUM L. Button snakeroot, eryngo, corn snakeroot, rattlesnake master. ***Umbelliferae.***—An erect, coarse, little-branched herb 2 to 6 feet tall, perennial; rootstock stout, knotty, branched, fibrous-rooted; stem stout, stiff, furrowed; leaves linear, grass-like, rigid, 1 to 2 feet long, bristly margined, parallel-veined; flowers whitish, small, in dense ovate or conical heads at the ends of the stout branches of a terminal inflorescence.

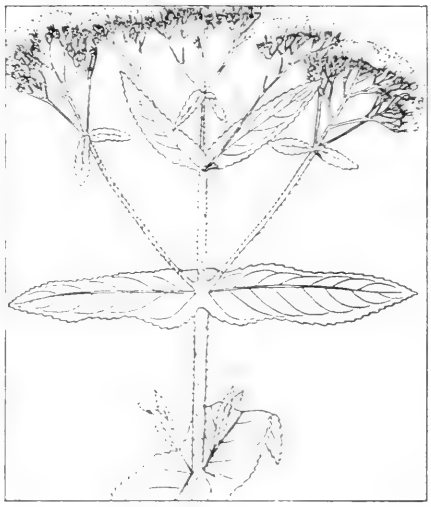
The rootstock collected in the fall. Infrequent in damp soil throughout the state.

Medicinally effective constituents unknown. Used as a diaphoretic, diuretic, expectorant, and, in large doses, as an emetic.

ERYTHRONIUM AMERICANUM Ker. Yellow adder's-tongue, dog's-tooth violet. ***Liliaceae.***—A low, stemless, 2-leaved herb 6 to 12 inches tall, perennial; corm deep, membranous-covered, ½ to 1 inch long, with off-shooting small corms on stems from its base; leaves pale green mottled with purple, oblong-lanceolate, with long, clasping petioles, 3 to 8 inches long; flowers yellow, solitary, and nodding at the top of a smooth stalk up to 12 inches long; fruit an obovate, short-stalked capsule ½ to 1 inch long.

The corm collected. Usually in dense colonies, infrequent to frequent in rich woods throughout the state.

The medicinally effective constituents unknown. Used as an emetic.



EUPATORIUM PERFOLIATUM L. Boneset, thoroughwort, ague weed, feverwort, sweating plant. ***Compositae.***—An erect, usually unbranched, often rather coarse herb 2 to 5 feet tall, perennial; stems stout, rigid, hairy; leaves opposite, grown together around the stem, lanceolate, tough, veiny, wrinkled on both surfaces; flower heads white, small, numerous in a stiff, branched, flat-topped, terminal inflorescence.

The herb collected without large stems, also the leaves and flowering tops when the plant is in flower. Common throughout the state in low ground; late August through September.

Contains the bitter glucoside eupatorin. Used as a tonic, diaphoretic, emetic, and cathartic.

EUPATORIUM PURPUREUM L.

Queen of the meadow, Joe-Pye weed, gravel root, purple boneset. ***Compositae.***—An erect, coarse, unbranched, usually smooth herb 3 to 10 feet tall, perennial; stems stout, green or purple; leaves in whorls of 3 to 6, ovate, pointed, petioled, 4 to 12 inches long, serrate; flower heads purple, small, very numerous in a dense, large, stiffly branched, terminal inflorescence.

The root collected. Infrequent to common in moist and dry woods and along streams throughout the state; from early July to September.

Contains the glucoside euparin. Used as a diuretic.

EUPHORBIA COROLLATA L.

Flowering spurge, white-flowered milkweed. ***Euphorbiaceae.***—An erect, unbranched, light green herb 1 to 3 feet tall, perennial; rootstock stout, long, bright green; stems often several, sometimes spotted; leaves ovate, obtuse, entire, sessile, up to 1½ inches long, alternate but whorled below the inflorescence; flower heads white, small, terminal on the branches of a 5- to 7-stalked, much-forked, terminal inflorescence.

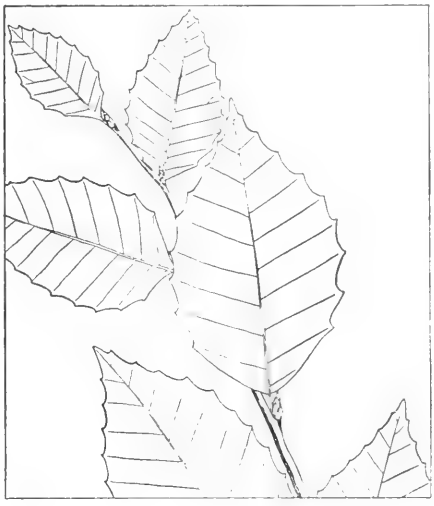
The rootstock collected. Infrequent but well distributed throughout the state; most abundant in dry, sandy soil; seldom found in wet soil.

Said to contain "euphorbon," a poisonous principle. Used as an emetic, cathartic, and diaphoretic.

EVONYMUS ATROPURPUREUS Jacq. Waahoo, burning bush, spindle tree, Indian arrow-wood, pegwood. *Celastraceae.*—A shrub or small tree 6 to 25 feet tall; bark ashy gray; branchlets green, smooth, 4-sided; leaves elliptic, pointed, petioled, 1½ to 6 inches long, serrate, opposite; flowers purple, small, in slender-stalked clusters at the bases of current-season twigs; fruit pale purple to deep red, deeply cleft into 4 flattened lobes, opening to disclose red, fleshy arils.

The bark of the stem and root collected. Infrequent on the alluvial, wooded banks of streams throughout the state.

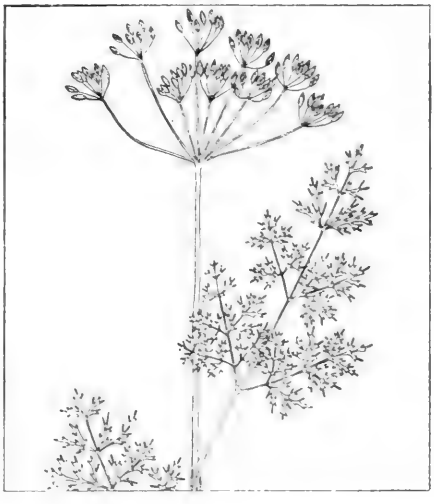
Contains resins and the bitter principle euonymin; used as a mild purgative.



FAGUS GRANDIFOLIA Ehrh. Beech. *Fagaceae.*—A moderate to large, narrow-crowned tree 60 to 80 feet tall; bark dull gray, smooth, mottled with dark spots, thin; twigs bright brown, slender; buds narrow, conical, up to 1 inch long; leaves ovate, pointed, 2½ to 5 inches long, coarsely serrate, alternate; flowers inconspicuous; fruit a short-stalked, prickly bur containing two shiny, brown, 3-sided nuts.

The leaves and bark, also the wood, collected. Rare to infrequent in the extreme northeastern corner and east-central border of the state; common in the Ozark region.

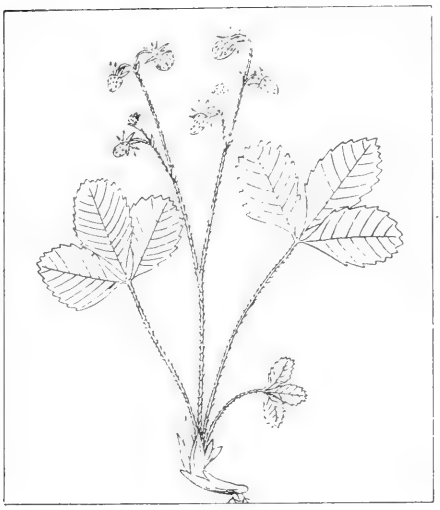
The wood yields creosote upon distillation. The bark is used as a tonic and astringent.



FOENICULUM VULGARE Hill. Fennel. *Umbelliferae. U. S. P. XI, p. 254.*—An erect, branched, smooth herb 2 to 4 feet tall, perennial; leaves large, alternate, dissected in linear or capillary segments, petioled, the petiole clasping the stem; flowers yellow, small, in large, compound, bractless umbels; seed flat on one side, convex and angled on the other.

The ripe fruit is collected. Planted in gardens, but not known to have escaped or become established in the state.

Yields the volatile oil of fennel and contains trigonellin and cholin. Used as an aromatic flavoring, a carminative, and a stomachic stimulant.



FRAGARIA VESCA L. Strawberry. Alpine strawberry. ***Rosaceae.***

The leaves collected, also the fruit. Cultivated in home and farm gardens throughout the state and locally in many places in fields of some size; persists after being planted but does not become established.

The fruit contains salicylic acid and malic acid. Said to have astringent and diuretic properties but is valuable chiefly for the fruit syrup which is used as a pleasant vehicle for medicines.

[*Fragaria virginiana* Dcne., Virginia strawberry, is native throughout the state; except for the small size of its fruit, it is hardly distinguishable from the foregoing species and may be collected also, for both its fruit and leaves. The fruit is said to be refrigerant.]

FRASERA CAROLINENSIS Walt. American columbo, calumba. ***Gentianaceae.***—An erect, coarse, little-branched, smooth herb 3 to 7 feet tall, perennial; taproot large, spindle-shaped; stem stout; leaves lanceolate, on the stem 3 to 6 inches long, petioled, entire, 4 at a node; flowers yellowish white dotted with purple-brown, short-pedicelled, numerous in a large, terminal, cymose inflorescence; fruit an oval, flattened, few-seeded capsule.

The root collected. Infrequent to rare but in all parts of the state in dry oak woods.

Contains the bitter principle gentiopicrin and gentisic acid. Used as an emetic, a cathartic, and a bitter tonic.

FRAXINUS AMERICANA L. White ash. *Oleaceae.*—A moderate to large tree 60 to 80 feet tall; bark of the trunk gray to dark brown, furrowed, thick; branchlets gray to brown; leaves large, odd-pinnately compound, opposite; leaflets thin, dark green, pointed, ovate, dentate, 5 to 9, usually 7, in number; flowers inconspicuous; fruit an oblong, narrow "key" 1 to 2 inches long, with a long, membranous wing.

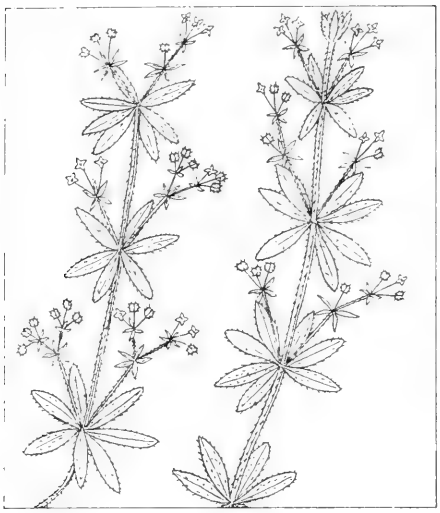
The inner bark of trunk and root collected. Common in woods on uplands, bottomlands, and stream banks throughout the state.

Contains several resins, an alkaloid, and the glucoside fraxin. Reputed to be beneficial in dysmenorrhea; used as a tonic, cathartic, and diuretic.

FRAXINUS NIGRA Marsh. Black ash. *Oleaceae.*—A moderate to large tree 70 to 100 feet tall; bark of the trunk gray, red-tinted, thin, separating into papery scales; branches and twigs ashy gray to orange; leaves large, odd-pinnately compound, opposite; leaflets lanceolate, serrate, sessile except the terminal one, 7 to 11 in number; flowers inconspicuous; fruit a narrowly oblong "key" 1 to 1½ inches long.

The bark of the trunk and root collected. Infrequent but widely distributed in the northern two-thirds of the state, in wet or swampy wooded sites.

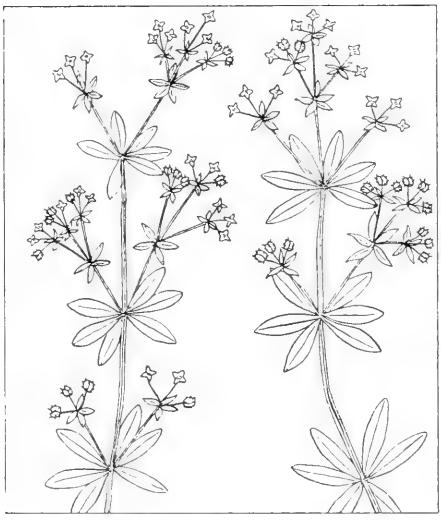
Contains the glucoside fraxin. Used as a tonic and astringent.



GALIUM APARINE L. Cleaver's herb, cleavers, goose grass. ***Rubiaceae.*** —A low, weak, reclining or scrambling, prickly herb, annual; stem square, with recurved prickles, 2 to 5 feet long; leaves oblanceolate, 1 to 3 inches long, 6 or 8 at a node, hispid and rough on the margin and midrib; flowers white, small, in groups (1 to 3) on axillary peduncles; fruit appearing double, fleshy, covered with hooked prickles.

The herb collected. Common throughout the state in gardens, along roads and streams, and in moist woods; May and early June.

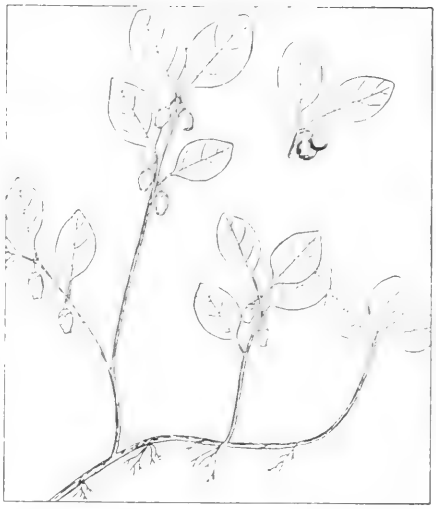
The species of *Galium* contain either galitannic or apertannic acid, other organic acids, and a bitter principle. Used as a diuretic and refrigerant.



GALIUM TRIFLORUM Michx. Sweet-scented bedstraw. ***Rubiaceae.***— A diffuse, low, spreading, mostly unarmed, smooth herb, fragrant in drying, perennial; stems shining, square; leaves narrowly oval, nearly sessile, 6 at a node, cuspidate, 1-nerved; flowers greenish, small, in clusters of 3 or in 3 clusters of 3 at the ends of slender, terminal, and axillary peduncles; the fruit appearing double, covered with hooked bristles.

The herb collected. Common and abundant in moist woods throughout the state.

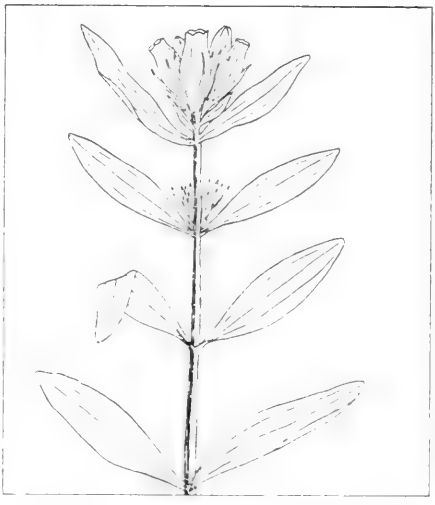
Contains, in addition to the usual *Galium* constituents, coumarin. Used additionally in nerve disorders.



GAULTHERIA PROCUMBENS L. Wintergreen, teaberry. *Ericaceae. U. S. P. XI, p. 234.*—A low, running, evergreen, aromatic shrub up to 6 inches tall; stems creeping, subterranean; branches erect, simple, woolly hairy, leafy at the top; leaves oval to orbicular, leathery, thick, up to 2 inches long, short-petioled; flowers white, small, waxy, urn-shaped, solitary in the leaf axils; fruit bright red, small, flattened globose, mealy, spicy, adhering until spring.

The herb and leaves collected in the fall. Rare, or perhaps now extinct, along the Lake Michigan shore.

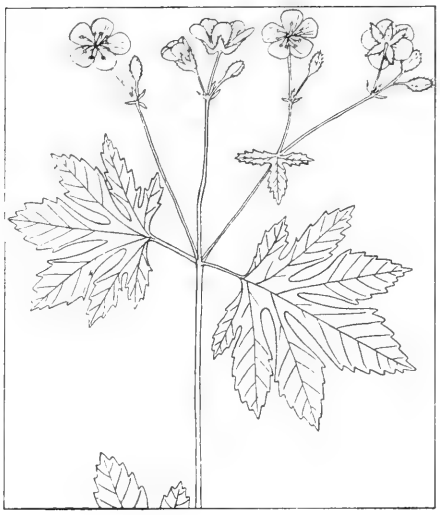
Contains the glucoside gaultherin, tannin, and the crystalline principles arbutin, ericolin, and ursone; gaultherin, upon hydrolysis, yields volatile oil of gaultheria (wintergreen oil), which consists mostly of methyl salicylate. Used as an aromatic stimulant, as a flavoring agent, and in rheumatic fever.



GENTIANA SAPONARIA L. Soapwort gentian, blue gentian. *Gentianaceae.*—An ascending or erect, simple or short-branched, usually smooth herb 1 to 2½ feet tall, perennial; stems slender, round, leafy; leaves lanceolate, opposite, entire, 3- to 5-nerved, rough-margined; flowers blue, 1 to 2 inches long, sessile in terminal and axillary clusters of 1 to 5; fruit a short-stalked capsule.

The root collected. Infrequent in sandy oak woods in northeastern counties and in dry woods in the Ozark region of the state.

Contains tannin in small amount, the glucoside gentiin, and the bitter principle gentiamarin. Used as a simple bitter.



GERANIUM MACULATUM L.

Cranesbill, wild geranium, alum root.

Geraniaceae.—An upright and sparingly branched, hairy herb 1 to 2 feet tall, perennial; rootstock (rhizome) 2 to 4 inches long, thick, with numerous scars from previous years' growths; stem slender, hairy; leaves palmately 3- to 5-parted and the divisions cleft and toothed, mostly basal, long-petioled, 3 to 6 inches wide, usually 2 or more forming an involucre; flowers rose- or violet-purple, 1 to 1½ inches wide, in loose, long-stalked clusters terminating the stems; fruit a slender, dry capsule whose sides, on opening, curl outward and upward.

The root (rhizome) collected just before flowering. Frequent to abundant in moist woods throughout the state; early April to mid-June.

Contains gallic acid and tannin, the latter to the extent of about 25 per cent of the dried drug. Used chiefly as an astringent.

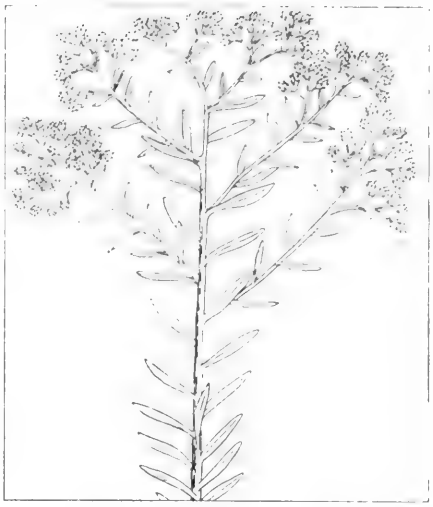
GILLENIA STIPULATA (Muhl.) Trel.

American ipecac, Indian physic.

Rosaceae.—An erect, branching, pubescent herb 2 to 4 feet tall, perennial; leaves compound, nearly sessile, with large, leaf-like stipules; leaflets 3 in number, ovate, acuminate, ½ to 1 inch long, sharply incised-serrate; flowers white or pinkish, about ¾ inch wide, solitary at the ends of slender, flexuous stalks arising from uppermost leaf axils; fruit a cluster of 5 2- to 4-seeded pods lightly adhering within the calyx.

The root collected. Infrequent or locally abundant in dry woods southward from Macon and Clark counties; rare northward to La Salle County.

Contains the bitter principle gillenin, gum, resin, and tannin. Used as an emetic and stomach tonic.

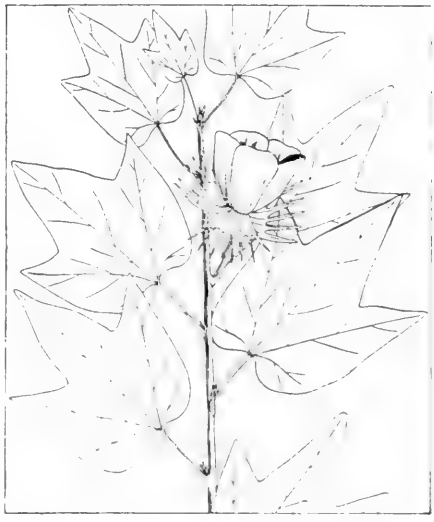


GNAPHALIUM POLYCEPHALUM Michx. Life everlasting, sweet cudweed, common everlasting, sweet balsam. *Compositae.*—An erect, stiff, sparingly branched, white-woolly, fragrant herb 1 to 2½ feet tall, annual; stems woolly, glandular; leaves lanceolate, sessile, alternate, green above, woolly beneath, wavy-margined, 1 to 3 inches long; flower heads shining white, sometimes brown-tinted, ¼ inch long, numerous, in clusters at the tips of the branches of a terminal, panicled inflorescence.

The leaves and tops collected. Infrequent to common in dry, open woods, fields, and pastures throughout the state.

Contains a bitter principle and a volatile oil. Used as a tonic.

[*Gnaphalium uliginosum* L., marsh cudweed or mouse-ear, sometimes collected, occurs locally in the extreme northeastern and southern parts of the state, inhabiting wet or muddy places. It is low, much branched from the base, and ascending; its flower heads, in dense clusters at the ends of branches, are sessile in leafy cups.]



GOSSYPIUM HIRSUTUM L. (*G. herbaceum* L.) Cotton. *Malvaceae. U. S. P. XI, pp. 182, 255.*

The bolls, when ripe, and the bark of the root collected; also the seed. Grown as a crop in the southern tip counties of the state.

The lint furnishes absorbent cotton and pyroxylin; the seed yields cottonseed oil; the fresh root bark contains an active, colorless, resinous substance which becomes inactive and red in color as the bark ages. The root bark is used as an emmenagogue and ecbolic; the oil as an emollient.

GRINDELIA SQUARROSA (Pursh) Dunal. Gum-plant, tar-weed, gum weed, rosin-weed. ***Compositae.***—An erect, branched, gummy, smooth, varnished-looking herb 8 to 24 inches tall, biennial or perennial; stems often reddish; leaves spatulate or oblong, sessile, often clasping the stem, alternate, ½ to 1½ inches long, spinulose-dentate; the flower heads yellow, about 1 inch wide, solitary and terminal on the branches, very gummy and sticky.

The leaves and flowering tops collected during full bloom. Rare to infrequent in gravelly and sandy, open soils and along railroads across northern Illinois and south to La Salle County.

Contains a resinous varnish in which are the active principles, a volatile oil, a resin, and the alkaloid grindeline. Used as a stimulant for mucous membranes and as an antispasmodic.

[*Grindelia robusta* Nutt. of the Pacific coast is the plant that formerly was official. It and the foregoing species are believed to be about equally efficacious and are often mixed.]

HAMAMELIS VIRGINIANA L. Witch-hazel, snapping hazel, striped alder, tobacco wood. ***Hamamelidaceae.***—A moderate-sized shrub 8 to 15 feet tall; stems crooked; branches long and flexuous; bark brown, smooth; leaves suborbicular to obovate, 2 to 5 inches long, short-petioled, alternate, sinuate margined, usually acute, unevenly cordate; flowers yellow, with 4 linear, crinkled petals; fruit a woody, pubescent capsule containing 2 black, oblong seeds.

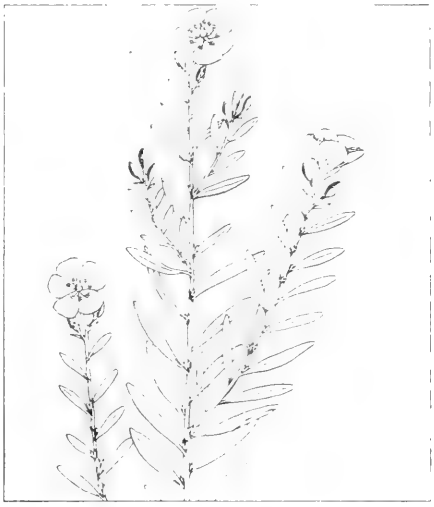
Leaves, twigs, and bark collected in the autumn. Infrequent to abundant in dry woods in the northern half of the state; rare to absent southward.

Contains tannin and a bitter principle; the aqueous distillation of the leaves produces an aromatic principle in the extract (extract of witch-hazel). Used chiefly in treatment of internal hemorrhage.

HEDEOMA PULEGIOIDES (L.) Pers. Pennyroyal, squaw mint. ***Labiatae.***—A low, erect, much-branched, aromatic herb 4 to 12 inches tall, annual; stem slender, 4-angled, pubescent; leaves oblong-ovate, short-petioled, opposite, entire or serrate, ½ to 1 inch long, glandular-dotted; flowers bluish, small, in loose whorls in the leaf axils, 2-lipped; seeds minute, dark brown or black.

The leaves, small stems, and flowering tops are collected in full flower. Common everywhere in the state, occurring in dry soil in open woods and as a weed in fields and pastures and along transportation lines.

Contains and yields oil of hedeoma (oil of pennyroyal). Used as an aromatic stimulant and emmenagogue.



HELIANTHEMUM CANADENSE (L.) Michx. Frostweed, rockrose. ***Cistaceae.***—An ascending or erect, gray-hairy, branching herb 6 to 24 inches tall, perennial; stems simple at first, later branching; leaves oblong, ½ to 1¼ inches long, nearly sessile, alternate, entire, dark green above; flowers bright yellow, showy, about 1¼ inches wide, solitary (later flowers without petals, in axillary clusters); fruit a globose, small capsule.

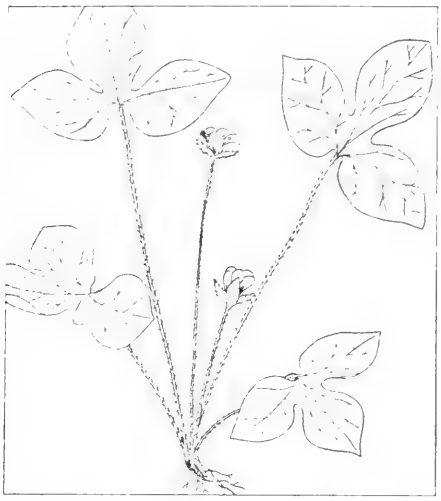
The herb collected. Infrequent to frequent in dry sandy or gravelly oak woods, at least from the Illinois Ozarks northward.

Contains tannin. Used as a mild astringent.

HELIANTHUS ANNUUS L. Sunflower, annual sunflower, common sunflower. ***Compositae.***

The seed collected. Cultivated in many parts of the state, occasionally escaped and established as a weed.

Contains a bland fixed oil. Said to be useful as a diuretic and expectorant.



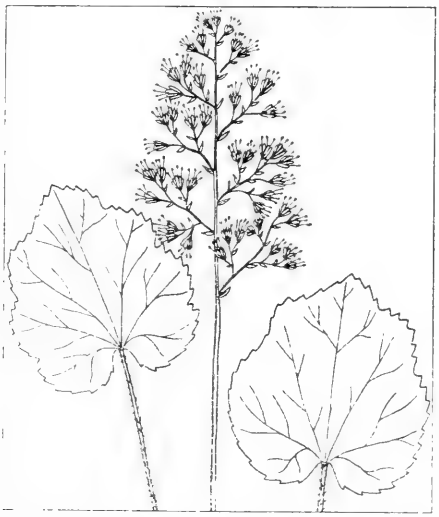
HEPATICA ACUTILOBA DC.

Hepatica, liverwort, liverleaf. ***Ranunculaceae.***—A low, stemless, early-flowering herb 4 to 9 inches tall, perennial; roots fibrous; leaves peculiarly 3-lobed and "liver-shaped," 2 to 2½ inches wide, on slender, hairy, lax petioles 4 to 6 inches long; flowers blue, purple, or white, about ¾ inch wide, solitary on slender, hairy stalks up to 9 inches tall, with 3 small, hairy bracts beneath the perianth; fruit a small, hairy achene (grain).

The leaves collected in April. Infrequent to abundant on wooded slopes along streams.

Contains only tannin and such vegetable constituents as mucilage and sugar. Is inert and without useful properties.

[*Hepatica triloba* Chaix, round-leaved hepatica, is distinguished from the foregoing chiefly by the rounded tips of the lobes of its leaves; it is, also, more prostrate. It is most likely to be found in the northern third of the state; the other species grows throughout the state. Both species may be collected without discrimination.]

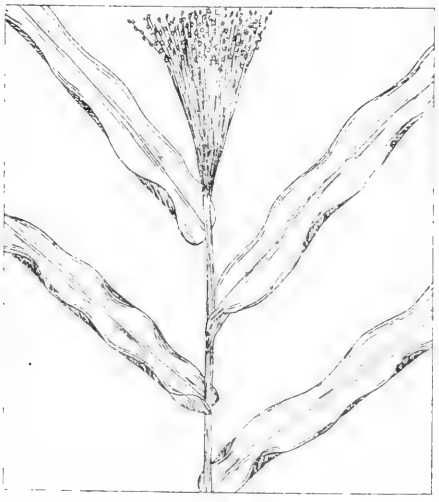


HEUCHERA AMERICANA L.

Alum root, American sanicle. ***Saxifragaceae.***—An erect, stemless herb 2 to 3 feet high, perennial; leaves round-cordate, 3 to 4 inches wide, with 7 to 9 short, rounded, crenate-dentate lobes, rising from the rootstock on long, smooth, or densely hairy petioles; flowering stalk stout, glandular, hairy, sometimes with 1 or 2 small leaves; flowers greenish, small, with protruding stamens bearing orange anthers, numerous in loose panicle; fruit a capsule.

The rootstock collected. Frequent to common throughout the state on dry, wooded slopes.

Contains a large percentage of tannin. Used as a topical astringent.



HOLCUS SORGHUM L., var. TECHNICUS Bailey. Broom corn. *Gramineae.*

The seed collected. Grown in large acreages in Coles and Douglas counties and occasionally elsewhere in the state.

HORDEUM VULGARE L. Barley.

Gramineae. U. S. P. XI, p. 155–159.

The grain collected. Grown as a small grain crop in all parts of the state and in a large total acreage.

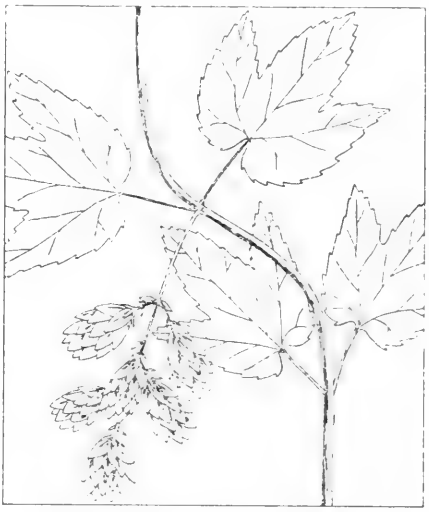
The malted grain furnishes malt extract, which contains amylolytic enzymes, also diastase. Used in the preparation of barley water; a demulcent.

HUMULUS LUPULUS L. Hop.

Urticaceae.

The fruiting catkins (strobiles), also the flowers, collected. Grown occasionally as a cultivated crop; infrequent in the wild state along roadsides, lakes, and streams.

Yields the drug lupulin, which contains a volatile oil and a bitter principle. Lupulin is used as a tonic, sedative, and hypnotic.



HYDRANGEA ARBORESCENS L.

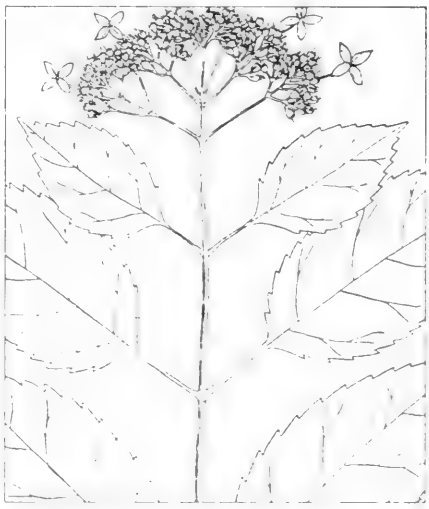
Hydrangea, wild hydrangea, seven bark.

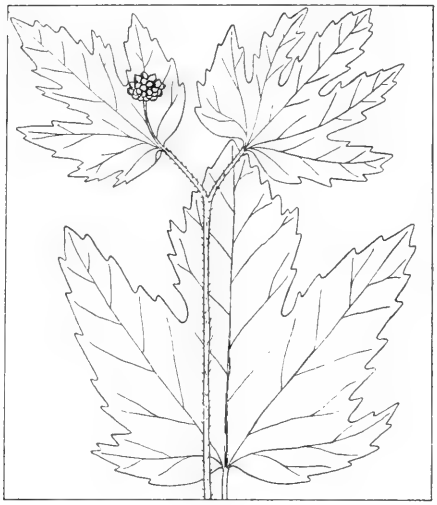
Saxifragaceae.—A moderately high, strict clumpy shrub 3 to 6 feet tall; the bark on old stems shreddy; branchlets pubescent; leaves ovate to orbicular, acuminate, usually cordate, opposite, 2 to 6 inches long, serrate; flowers small, greenish-white, very numerous in terminal, cymelike clusters, among them a number of conspicuous sterile flowers with large, white sepals; fruit a tiny, many-seeded capsule.

The roots collected in the fall. When dry, the root is very tough; it should be cut in short pieces before drying. Frequent in the south half of the state, infrequent northward, on wooded slopes along and near streams.

Contains the glucoside hydrangin, a volatile oil, and a saponin. Used as a diaphoretic and diuretic.

[*Hydrangea cinerea* Small, ashy hydrangea, is a smaller shrub with leaves tomentose on the underside. It occurs sparingly in the southern tip of the state and its root is collected.]



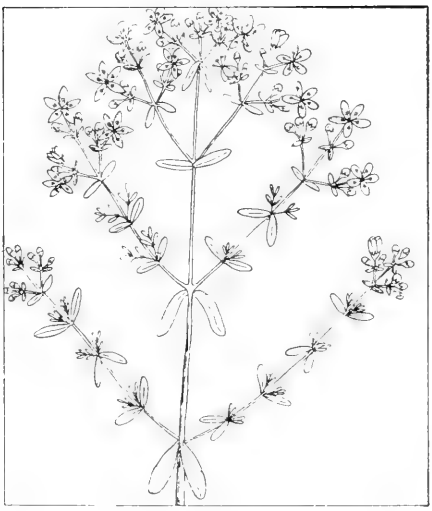


HYDRASTIS CANADENSIS L.

Golden seal, yellow-root, yellow puccoon, Indian turmeric. *Ranunculaceae. U. S. P. XI, p. lxx (not official).*—An erect, pubescent herb about 1 foot tall, perennial; rootstock horizontal, yellow, ½ to 2 inches long, up to ½ inch thick, wrinkled lengthwise, bearing numerous fibrous roots. Upper part of the plant consisting of a basal, long-petioled leaf, and a stem terminating in 2 smaller leaves, one of which subtends the solitary flower. Leaves palmately lobed, 5 to 8 inches broad, serrate; flowers greenish-white, less than ½ inch wide; fruit a crimson, fleshy head resembling a raspberry.

The leaves collected in late summer, the rootstock in the fall after the seeds have ripened. Infrequent in moist, rich woods throughout the state.

Contains the alkaloids hydrastine, berberine, and canadine, a fixed oil, and a black resin. Used as a tonic to the mucous membrane, principally in catarrhal affections.



HYPERICUM PERFORATUM L.

St. John's-wort, Tipton weed, Klamath weed, rosin rose. *Hypericaceae.*—An erect, upwardly much-branched, very leafy herb 1 to 2½ feet tall, perennial; taproot woody; stem slender, somewhat 2-ridged, smooth, dark-ringed at the nodes, with basal runners; leaves elliptic, sessile, entire, opposite, ½ to ¾ inch long, black-dotted; flowers yellow, black-dotted, ¾ to 1 inch wide, numerous in terminal cymes; fruit a many-seeded capsule.

The flowering tops collected. Infrequent to abundant throughout the state as a weed in poor soil, along roads, and in waste places.

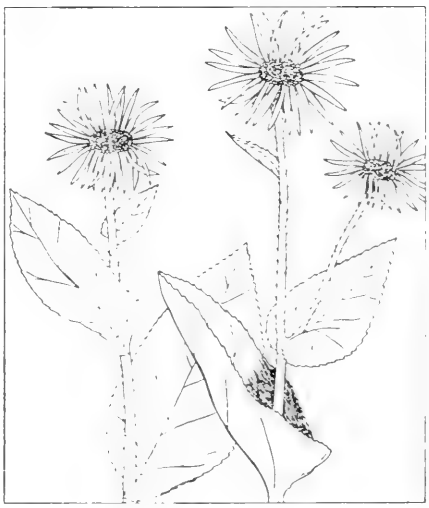
Contains the volatile oil of hypericum (red oil) and the fluorescent substances hypericin and hypericum red. The oil is used as an application to heal cuts and bruises.

ILEX VERTICILLATA (L.) Gray. **Black alder, common winterberry, false alder, fever bush.** *Aquifoliaceae.*—A small to moderate, unarmed, deciduous shrub 6 to 8 feet tall; bark of the stem grayish, warty with corky lenticels; leaves lanceolate, acuminate, serrate, 1 to 4 inches long, alternate, rather thick, turning black in the fall; flowers greenish- or yellowish-white; fruit a small, globose, bright red, 3- to 5-seeded berry.

The leaves and fruit collected, also the bark. Infrequent to rare, and local, in swamps and bogs in the northern third of the state; occurs also in the extreme southern part of the state.

Contains the bitter principle ilicin, ilicic acid, the yellow coloring matter ilexanthin, and caffeine. Used as a diaphoretic and demulcent.

INULA HELENIUM L. **Elecampane, inula, scabwort, yellow starwort.** *Compositae.*—An erect, rough, sunflower-like herb 3 to 6 feet tall, perennial; taproot large, long, yellow; stem produced the second and later years, stout, simple, pubescent; leaves the first year a ground rosette, thereafter on the stems, ovate, pointed, clasping the stem, up to 12 inches long, white-woolly beneath; flower heads yellow, 2 to 4 inches wide, terminal, on stout, hairy peduncles.



The root collected in the fall of the second year. Introduced and escaped as a weed throughout the state.

Contains inulin, helenin, a volatile oil, and alantol. Used as a stimulant and tonic.

IPOMOEA PANDURATA Meyer. Wild potato-vine, man-of-the-earth. ***Convolvulaceae.***—A twining or trailing herbaceous vine; stems stout, 2 to 12 feet long; root very large, fleshy, 2 feet or more long, weighing 15 pounds or more, exuding a milky sap when cut; leaves broadly ovate, pointed, cordate, pinnately veined, petioled, alternate, 2 to 6 inches long; flowers white, 2 to 3 inches long, morning-glory-like; fruit an ovoid, 2- to 4-seeded capsule.

The root collected. Infrequent to frequent in streamside woods and moist woodlands throughout the state.

Contains a milky, resinous juice and the glucoside ipomoein. Used as a purgative.

IRIS VERSICOLOR L. Blue flag, wild iris, flag lily, poison flag. ***Iridaceae.***—A leafy, smooth herb 2 to 3 feet tall, perennial; rootstock horizontal, fleshy, thick, branched, with many long, fibrous roots; leaves swordlike, ½ to 1 inch wide, somewhat glaucous; flowers purplish blue, iris-like, large, handsome, 2 to 6 or more on the stem, rising from the axils of small stem-leaves.

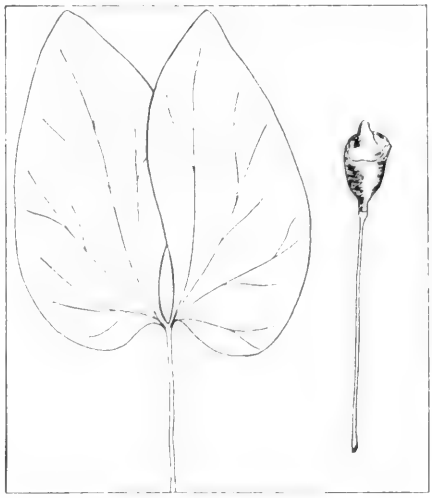
The rootstock and roots collected in the fall; the rootstock is pink when broken (those breaking white or yellow have little medicinal value). Frequent, locally sometimes very abundant, on the banks of sloughs, ponds, streams, and ditches in all parts of the state.

Contains the acrid, resinous substance irisin to the extent of about 25 per cent of the dry drug. Used chiefly as a cathartic and emetic, also as alterative, vermifuge, and diuretic.

IRIS GERMANICA L., I. PALLIDA Lam., I. FLORENTINA L. Iris (cultivated). ***Iridaceae.***

Rootstocks and roots collected. Cultivated in gardens throughout the state.

Yields orris, which has the odor of violets. Used in tooth powders and sachets.



JEFFERSONIA DIPHYLLA (L.) Pers. Twinleaf, rheumatism root, helmet pod, yellow-root. *Berberidaceae.*—A stemless, smooth herb 6 to 18 inches tall, perennial; rootstock horizontal, somewhat fleshy, thick, knotty, yellow-brown, with numerous matted, fibrous roots; leaves arising directly from the rootstock, long-petioled, 3 to 6 inches long, glaucous beneath, divided into 2 broad, somewhat semicircular, sometimes lobed parts; flowers white, about 1 inch wide, solitary at the ends of flowering stems 6 to 8 inches tall; fruit a capsule that at maturity is raised to a height of 16 to 18 inches on the elongated flower stalk and opens in a manner suggesting a helmet.

The rootstock and roots collected in the fall. Infrequent to rare in rich woods in the northern two-thirds of the state.

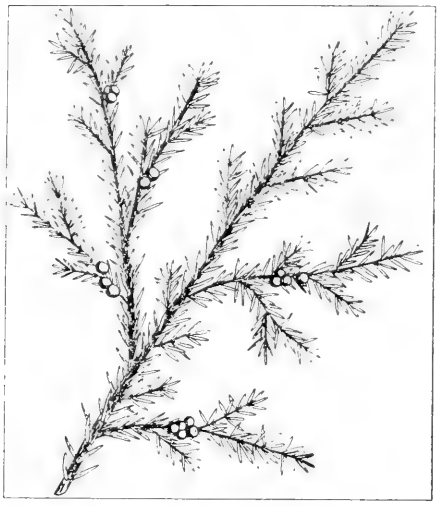
Contains a bitter principle, an acid similar to polygalic acid, and the alkaloid berberine. Used as an alterative, antispasmodic, diuretic, diaphoretic, and expectorant.

JUGLANS NIGRA L. Black walnut. *Juglandaceae.*—A large, round-topped tree 75 to 100 feet tall; bark of the trunk dark brown to blackish, deeply fissured into broad, rounded, scaly-topped ridges, 2 to 3 inches thick; leaves pinnately compound, 1 to 3 feet long; leaflets 11 to 23, ovate, pointed, serrate; flowers inconspicuous; fruit a globular, green, pulpy drupe containing a brown, corrugated nut.

The inner bark of the root, the leaves, and the nuts collected. On rich bottomlands and hillsides throughout the state.

Contains a volatile acid (juglandic acid) similar to nucin. Used as a mild cathartic.

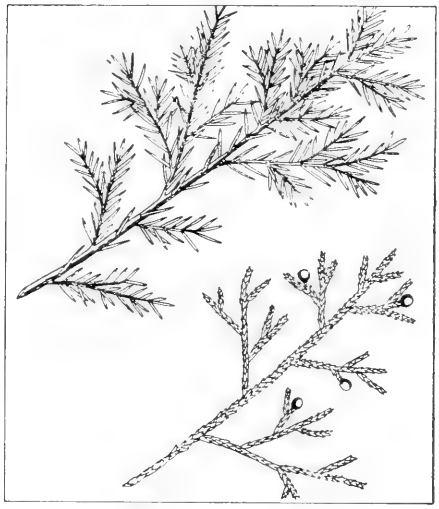
[*Juglans cinerea* L., butternut or white walnut, very similar to the black walnut but a much smaller tree (30 to 50 feet tall), is also sought for its leaves and root bark.]



JUNIPERUS COMMUNIS L. Common juniper, hackmatack, horse savin, gorst. ***Pinaceae.*** *U. S. P. XI, p. 256.*—A low and spreading or upright, small shrub or tree, evergreen; bark of the trunk shreddy; foliage in the form of needles, the needles straight, rigid, sharp-pointed, up to ½ inch long; flowers lacking, cones present instead; fruit blue, glaucous, berry-like, ¼ inch in diameter, 3-seeded.

The fruit collected in fall and winter, when ripe. In cultivation as an ornamental; established near Lake Michigan in Lake County.

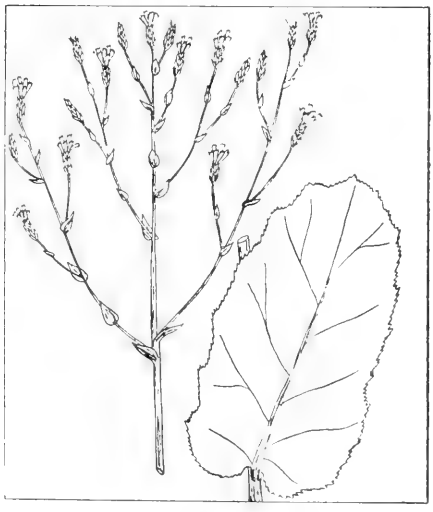
Contains the fragrant oil of juniper. The oil is used as a stimulant, diuretic, carminative, and emmenagogue.



JUNIPERUS VIRGINIANA L. Red cedar, juniper. ***Pinaceae.***—A small, erect, evergreen tree (not shrubby in Illinois) 20 to 50 feet tall; trunk lobed, eccentric, and buttressed, with thin, red-tinted, fibrous, peeling bark; foliage in the form of needles and scales; needles dark green, slender, ¼ to ¾ inch long, 4 ranked; scales closely appressed, 1/16 inch long, 4 ranked; fruit a small, blue, glaucous, globose, 1- or 2-seeded berry.

Throughout the state on rocky bluffs and cliffs, hillsides, wasteland, and abandoned fields.

The wood yields cedarwood oil. The oil is used as a rubefacient.



LACTUCA SATIVA L. Lettuce, garden lettuce. ***Compositae.***

The leaves collected. Grown in home and truck gardens throughout the state.

Contains lactucol, lactucopicrin, and, to a slight extent, hyoscyamine. Reputed to be useful as a sedative.

LACTUCA SCARIOLA L. (*L. virosa* L.) **Wild lettuce, prickly lettuce, wild opium, compass plant.** *Compositae.*—An erect, unbranched, bright green herb 2 to 7 feet tall, annual; stem stiff, rigid; leaves deeply, pinnately lobed, oblong, finely toothed, up to 10 inches long, clasping the stem, alternate but turned to form 2 ranks (pointing north and south), spiny on the midrib beneath; flower heads yellow, small, numerous in a large, open, terminal panicle; seeds black, small, flattened, with an apical, stalked tuft of floss.

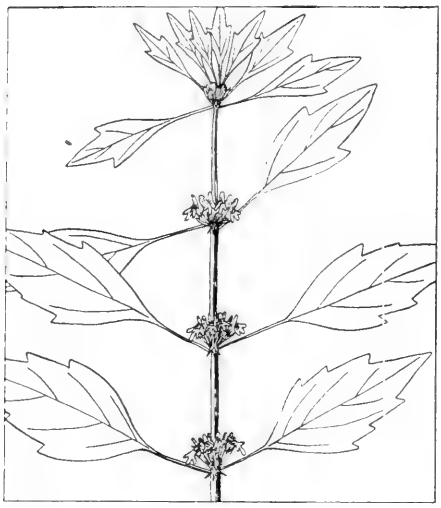
The leaves collected in late summer and early fall. Common to abundant as a weed in all neglected waste places throughout the state.

Yields a white, milky juice (lactucarium), which contains hyoscyamine. Used as a sedative.

LARIX LARICINA (Du Roi) Koch. **Larch, tamarack, American larch, hackmatack.** *Pinaceae.*—A tall, pinelike, deciduous tree 25 to 60 feet tall; bark of the trunk separating into bright, reddish-brown, thin scales; foliage in the form of needles; needles slender, triangular, weak, ½ to ¾ inch long, mostly in crowded bundles from lateral buds, falling in late autumn; fruit a small cone with a few rounded scales.

The inner bark and the resinous exudate collected. Limited to the cold bogs in Lake and McHenry counties.

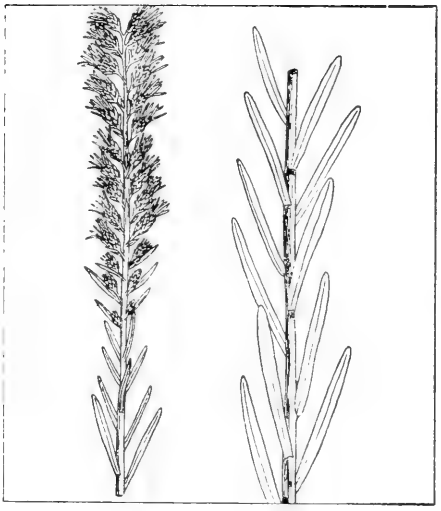
Contains tannin, a volatile oil, and a resin. Used as a laxative, tonic, diuretic, and alterative.



LEONURUS CARDIACA L. Motherwort, lion's-tail, lion's-ear. ***Labiatae.***—An erect, little-branched, nearly smooth herb 2 to 4 feet tall, perennial; stem stiff, 4-angled; leaves palmately 5- or 3-lobed, toothed, long-petioled, opposite, the upper leaves with wedge-shaped bases; flowers purplish to pink or white, small, in dense, axillary whorls, 2-lipped; seeds dark brown, tiny, 3-angled.

The herb (leaves and flowering heads) collected. Introduced, frequent as a weed in fields and waste places and well-established in woods and along roads.

Contains a volatile oil and a bitter principle. Used as a stimulant, tonic, and diaphoretic.



LIATRIS SPICATA (L.) Willd. Button snakeroot, colic-root, devil's bit. ***Compositae.*** — An erect, usually unbranched, leafy, smooth herb 2 to 6 feet tall; perennial; rhizome round, tuberous, bulblike; stem stiff, straight; leaves lanceolate to linear, blunt-pointed, sessile, alternate, the lowest sometimes 1 foot long, progressively shorter upward; flower heads bluish-purple, sometimes white, showy, sessile, crowded in a terminal spike; bracts surrounding the flowers obtuse, not punctate.

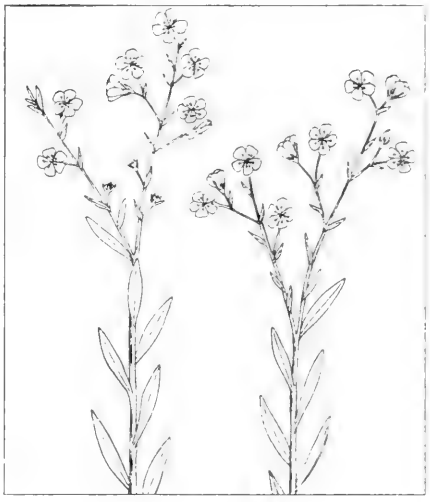
The root collected. Common to abundant in the northern half of the state, infrequent in the southern, in moist prairies, in marshy sites, and on open wooded slopes.

Contains a volatile oil and a resin. Used as a diaphoretic, diuretic, and uterine tonic

LINARIA VULGARIS Hill. Butter and eggs, flaxweed, yellow toadflax, wild snapdragon. *Scrophulariaceae.*— An erect, sparingly branched, smooth herb 1 to 3 feet high, perennial; roots creeping; stems in clumps, glandular above; leaves pale green, linear, sessile, alternate, ½ to 1½ inches long, acute; flowers yellow, orange within, 2-lipped, with a downward-pointing spur, in dense racemes; fruit a 2-celled, many-seeded, oval capsule.

The herb collected. Introduced; now naturalized and common in sandy fields, pastures, and waste places and along roadsides throughout the state.

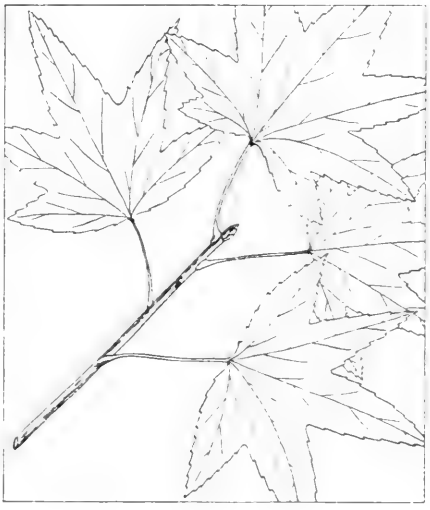
Contains the glucoside linariin. Used as a diuretic and cathartic.



LINUM USITATISSIMUM L. Flax. *Linaceae. U. S. P. XI, pp. 202, 258.*

The seed is harvested when ripe. Cultivated to a considerable extent in several parts of the state; has not persisted as an escape.

Contains oil (flaxseed oil), mucilage, and, under certain conditions, the cyanogenic glucoside phaseolunatin (linamarin). Used as a demulcent and emollient.



LIQUIDAMBAR STYRACIFLUA L. Sweet gum, American storax. *Hamamelidaceae. U. S. P. XI, pp. 363–364.*— A moderate to tall, oblong- and small-crowned tree 80 feet or more tall; bark of the trunk light gray, deeply furrowed; twigs round or corky-ridged; leaves 5- or 7-lobed, star-shaped, finely serrate, on slender petioles 5 or 6 inches long; fertile flowers in globular, long-stalked heads from the upper leaf axils, the heads developing into woody, prickly armed spheres.

A resinous gum, styrax, is collected after exuding from wounds in the bark of the trunk. Frequent to common in low woods from Crawford County south and west to the Ohio and Mississippi rivers.

Styrax contains cinnamic acid, styracin, and the aromatic oily hydrocarbon styrol. Used for catarrhal affections and externally as an ointment.

LIRIODENDRON TULIPIFERA L. Tulip tree. ***Magnoliaceae.***—A straight, narrow-crowned tree of great height; bark of the trunk thin and scaly or, later, 2 inches thick and deeply furrowed; leaves dark green, shiny, 5 to 6 inches long and as wide, with 2 large, pointed lobes on each side and a deep, wide notch at the end, alternate, petioled; flowers greenish-white, inwardly orange-marked, large, showy, resembling a tulip blossom; fruit conelike and scaly, 2½ to 3 inches long.

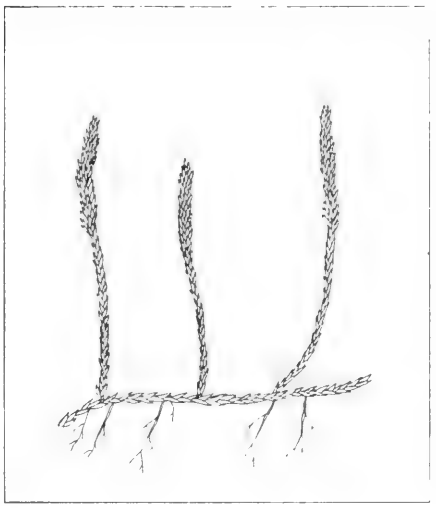
Bark, taken from root, trunk, and branches, collected. An infrequent to common tree southward from Vermilion and Hancock counties among oaks, hard maple, and beech.

Contains the crystalline principle liriodendrin. Used as a simple or bitter tonic, aromatic, and diaphoretic.

LOBELIA INFLATA L. Lobelia, Indian tobacco, asthma weed, gag root. ***Lobeliaceae. U. S. P. XI, p. lxxi (not official).***—An upright, little- to much-branched, mostly smooth herb 1 to 3 feet tall, annual; stem rough-hairy below, containing a milky juice; leaves ovate, toothed, alternate, the lower petioled and 2 inches long, the upper sessile and smaller; flowers pale blue, showy but small, 2-lipped, in loose terminal and axillary racemes; fruit a glossy, yellow-brown, round, ridged capsule containing very many minute, brown seeds.

The leaves and tops collected while the plant is in flower; also the seed. Infrequent to frequent in open woods, fields, and waste places throughout the state, often occurring as a weed; mid-August through September.

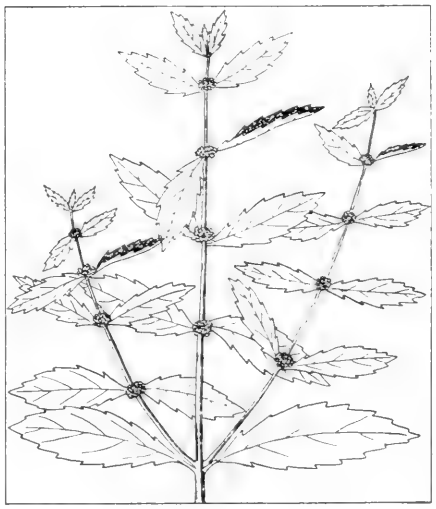
Contains a volatile oil and the alkaloids lobeline and lobelidine. Used as an antispasmodic in laryngitis and spasmodic asthma, an expectorant, and emetic.



LYCOPODIUM INUNDATUM L. **Bog club moss.** *Lycopodiaceae.* (*L. clavatum* L., *U. S. P. XI, p. 221.*)—A low, creeping, small evergreen, pinelike shrub; stems prostrate, 1- or 2-forked, rooting below, leafy above; branches upright, to 2½ inches high, enlarged and spikelike at the tips (the strobiles); needles linear-lanceolate, entire, acute, curved upward on the stem, spreading on the branches.

The spores (or strobiles containing the spores) collected. Local and rare to infrequent in sandy regions in the northeast corner of the state.

Contains a fixed oil. Used as a dusting powder for the skin, especially of infants.



LYCOPUS VIRGINICUS L. **Bugle weed, water horehound, buglewort, gypsy weed, carpenter's herb, wood betony.** *Labiatae.*—An erect, strict, basally branched herb 6 to 24 inches tall, perennial; stems slender, 4-angled, smooth, with long, threadlike runners from the base; leaves dark green or purplish, broadly lanceolate, tapered at both ends, serrate, opposite; flowers white, tiny, 2-lipped, in dense, axillary clusters.

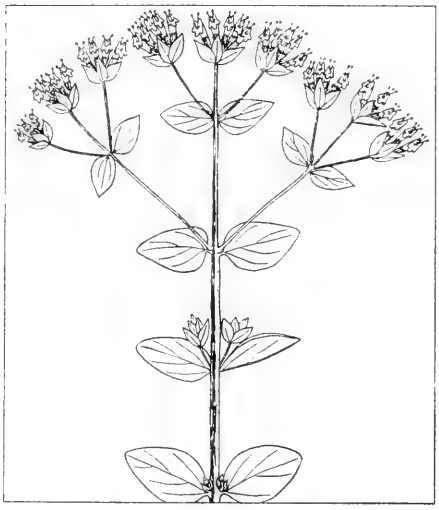
The herb (leaves and tops) collected during flowering time. In wet situations in woods, along streams and ditches throughout the state; common southward, infrequent in the north.

Contains an aromatic, volatile oil. Said to be useful as a sedative, tonic, astringent, and narcotic.

MAGNOLIA ACUMINATA L. Cucumber tree. *Magnoliaceae.*—A moderate-sized to large tree 60 to 90 feet tall; bark of the trunk dark brown, furrowed, scaly, thin; branchlets slender, bright red-brown; leaves yellow-green, broadly ovate, pointed, entire, 6 to 10 inches long, petioled, alternate; flowers greenish-yellow, large; fruit cucumber-shaped, consisting of numerous, fleshy, seed-bearing carpels.

The bark of the trunk and root collected. Infrequent to common on slopes and partially drained bottomlands in the extreme southern part of the state.

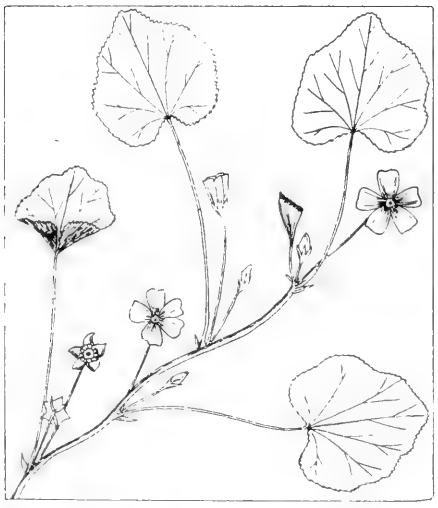
Contains an aromatic, volatile principle and a bitter principle. Used as an aromatic, bitter tonic.



MAJORANA HORTENSIS Moench. Sweet marjoram, marjoram. ***Labiatae.***

The herb and the leaves alone collected. Grown in home gardens in many parts of the state.

Contains an aromatic, volatile oil. Used medicinally as an aromatic stimulant, also as a culinary flavoring.

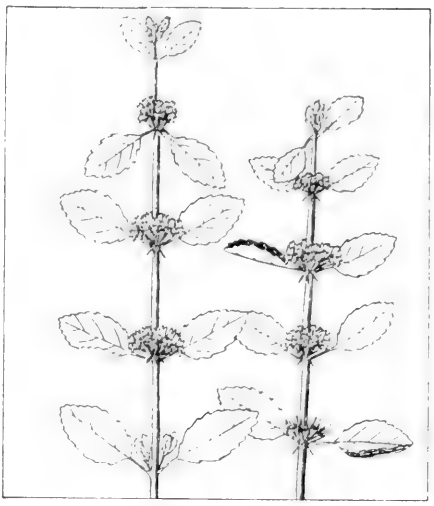


MALVA ROTUNDIFOLIA L. Round-leaved mallow, low mallow, cheeses. *Malvaceae.*—A low, procumbent, widely spreading herb, annual or biennial; stems pubescent, very leafy; leaves roundish, cordate, palmately veined, slightly lobed, ½ to 1 inch wide; petioles long, slender; flowers whitish, small, 5-parted; fruit a ring of light brown, flattened, circular, 1-seeded pods.

The herb, including the roots, collected; also the flowers. Frequent to common, especially as a weed, around dwellings and in waste places throughout the state.

Contains mucilage. Used as an emollient and demulcent.

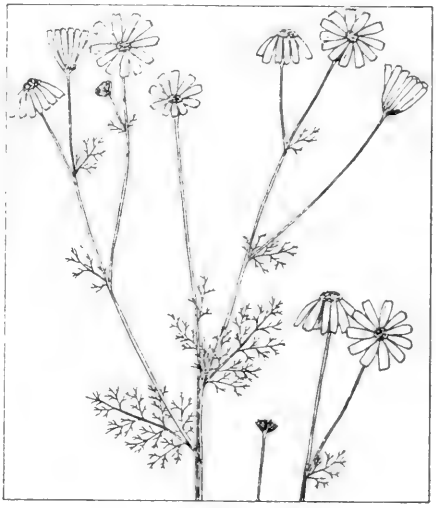
[*Malva sylvestris* L., high mallow, is also collected for its herb and leaves. It is cultivated as a garden ornamental and may possibly be found as an escape near large cities.]



MARRUBIUM VULGARE L. Horehound, marrub, marvel, houndsbane. ***Labiatae.***—An erect, bushy, branching, white-woolly, aromatic herb 1 to 3 feet tall, perennial; stems stout, 4-angled above, usually in clumps; leaves oblong, green above, white-woolly beneath, 1 to 2 inches long, opposite, crenate, petioled; flowers whitish, small, 2-lipped, in dense, axillary clusters.

Clean, small stems, leaves, and tops collected just before the plant begins to flower. Introduced, escaped, and now frequent to common in pastures and farmsteads; rare or infrequent in woods and along roads.

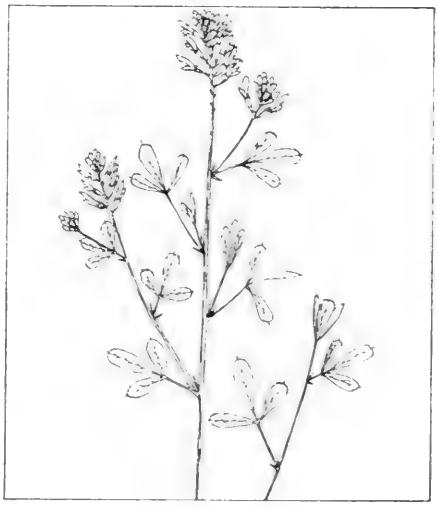
Contains a volatile oil and the bitter principle marrubiin. Used as a stimulant, tonic, and laxative.



MATRICARIA CHAMOMILLA L. Wild chamomile, German chamomile, horse gowan. ***Compositae.***—An erect and much-branched, pleasantly aromatic, smooth herb 1 to 2 feet tall, annual; leaves much divided into many linear lobes, alternate; flower heads white on the margin, yellow in the center, ¾ to 1 inch wide, numerous but solitary and terminal on slender peduncles; seeds 3-ribbed, lacking a crown.

The flowering top and leaves collected. An old garden herb, still grown in many places; not known to have become established in Illinois but possibly to be found near large cities or old settlements.

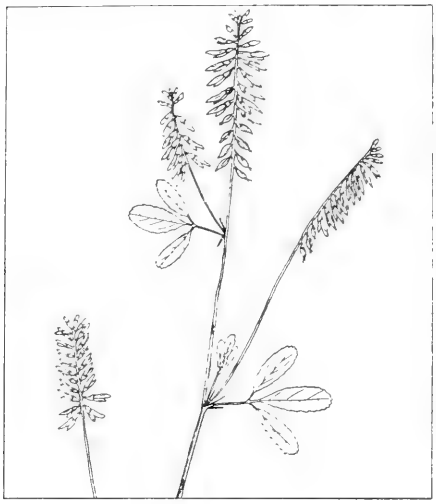
Contains anthemidin and a deep blue volatile oil. Used as an aromatic bitter, nervine, carminative, diaphoretic, and, externally, as a counterirritant.



MEDICAGO SATIVA L. Alfalfa. ***Leguminosae.***

The herb is collected, also the leaves and seeds separately. Grown in large and small acreages in all parts of the state; also escaped and established in many waste places.

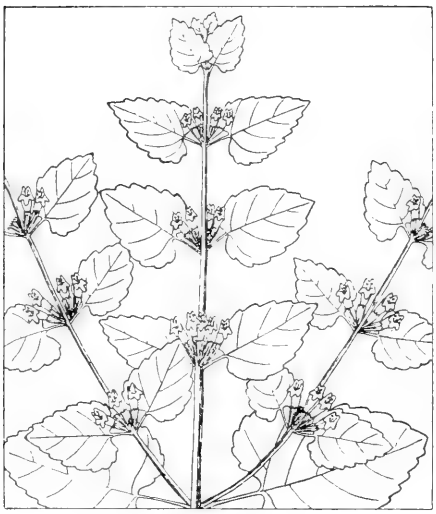
Contains vitamin K, the antihemorrhagic vitamin. Used for its vitamin; the seeds furnish a yellow dye.



MELILOTUS OFFICINALIS (L.) Lam. Sweet clover, yellow sweet clover, melilot. ***Leguminosae.***

The herb (leaves and tops) and the flowers collected. Cultivated in large acreages, also established in waste ground, throughout the state.

Contains the aromatic principle coumarin. Used as an expectorant and diuretic.



MELISSA OFFICINALIS L. Balm, lemon balm, garden balm, honey plant, sweet Mary. ***Labiatae.***—An erect, much-branched, finely hairy, lemon-scented herb 1 to 2½ feet tall, perennial; leaves oval to cordate, 1 to 2½ inches long, round-toothed, opposite, petioled; flowers white or cream, tubular, 2-lipped, ½ inch or more long, in clusters of several in the leaf axils.

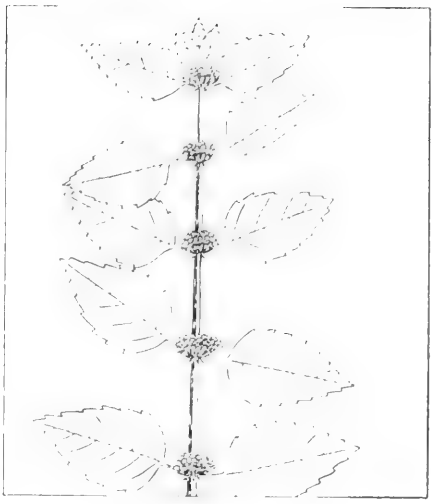
The leaves, or the entire herb, collected. Introduced; infrequent to rare in the vicinity of the earliest settlements in southern Illinois, especially along the Wabash and Ohio rivers; June and July.

Contains an aromatic oil. Used as an aromatic flavor, diaphoretic, and febrifuge.

MENISPERMUM CANADENSE L. Yellow parilla, moonseed, Canada moonseed, Texas sarsaparilla. ***Menispermaceae.***—A woody, climbing, left-to-right twisting, usually smooth vine, perennial; stems slender, round, 6 to 12 feet long; leaves 7-lobed and maple-like to cordate and without lobes, 4 to 8 inches wide, slender- and long-petioled, alternate; flowers whitish, small, in loose, axillary panicles; fruit a blue-black, glaucous berry containing 1 flattened, moon-shaped seed.

The rhizome and roots collected. In woods on stream banks, sometimes on fences, throughout the state, infrequent to common.

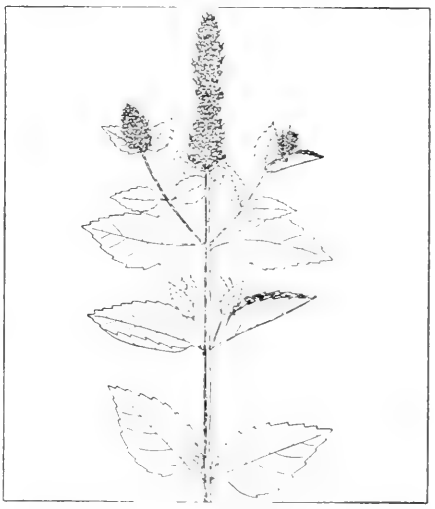
Contains the alkaloids berberine and menispine. Used as a tonic, alterative, and diuretic.



MENTHA ARVENSIS L. Field mint. ***Labiatae.***—An erect, well-branched pubescent herb up to 2½ feet tall, perennial; rootstocks creeping; stems 4-angled, retrorsely hairy; leaves ovate, strongly aromatic, serrate, 1 to 2 inches long, opposite; flowers white to lavender, small, 2-lipped, in rather dense, axillary whorls; seeds minute, smooth, light brown, irregularly lined on the convex side.

The herb collected. On moist waste and idle lands throughout the state, frequent northward, becoming infrequent southward.

Contains an aromatic oil. Used as a carminative.



MENTHA PIPERITA L. Peppermint, lammint, lamb mint, brandy mint. ***Labiatae.*** *U. S. P. XI, pp. 230, 259.*—An erect, branching, smooth herb 1 to 3 feet tall, perennial; rootstocks long, creeping; stems 4-angled, reddish-purple to green; leaves dark green, ovate, aromatic, opposite, petioled, serrate, 1 to 2 inches long; flowers purplish, small, hardly 2-lipped, in dense, oblong, terminal spikes.

Leaves and flowering tops collected as soon as the flowers commence opening. In moist places about lakes and streams and along roads and ditches throughout the state.

Contains the aromatic oil of peppermint, which contains menthol. Used as an aromatic, stimulant, and carminative.

MENTHA SPICATA L. Spearmint, garden mint, brown mint, sage of Bethlehem. ***Labiatae. U. S. P. XI, pp. 231, 260.***—An erect, branching, nearly smooth, aromatic herb 1 to 2½ feet tall, perennial; rootstocks creeping; stems 4-angled, reddish toward the base; leaves pale green, aromatic, ovate-lanceolate, sessile, opposite, serrate; flowers white to lavender, small, hardly 2-lipped, in slender, dense, terminal spikes; mature seed not produced.

The leaves and flowering tops collected before the flowers are fully developed. Introduced; infrequent to frequent in wet places about lakes and streams and along roads and ditches throughout the state.

Contains the volatile, aromatic oil of spearmint. Used as an aromatic, stimulant, and carminative.

MENYANTHES TRIFOLIATA L. Buckbean, bog bean, bog myrtle, marsh trefoil, moonflower, bitterworm. ***Gentianaceae.***—A stemless, marsh-inhabiting herb 2 to 10 inches tall, perennial; rootstock creeping, long, black, scaly; leaves compound, trifoliate, clover-like, on slender, sheathing petioles direct from the end of the rootstock; leaflets oval, 1½ to 3 inches long, glabrous; flowers white or purplish, about ½ inch long, 10 to 20 in a raceme at the end of a long peduncle arising from the rootstock; fruit an ovoid capsule about ¼ inch long.

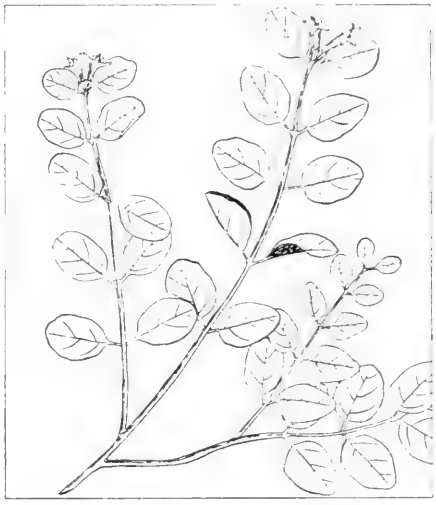
The rhizome collected in the fall, the leaves in the spring. Infrequent to rare in tamarack bogs and sandy marshes in the northeast corner of the state.

Contains the bitter principle menyanthin. Used as a tonic and laxative.

MERTENSIA VIRGINICA (L.) Link. American lungwort, bluebells, Virginian cowslip. ***Boraginaceae.***—An erect or ascending, unbranched, smooth herb 1 to 2 feet tall, perennial; stem round, rather stout; leaves oval, 2 to 5 inches long, the lower petioled, the upper sessile, alternate, entire; flower blue-purple to white, showy, about 1 inch long, trumpet-shaped, numerous in short, terminal racemes; fruit a head of 4 small, wrinkled nutlets.

Common to abundant, but localized on wooded stream terraces and flood lands, through most of the state.

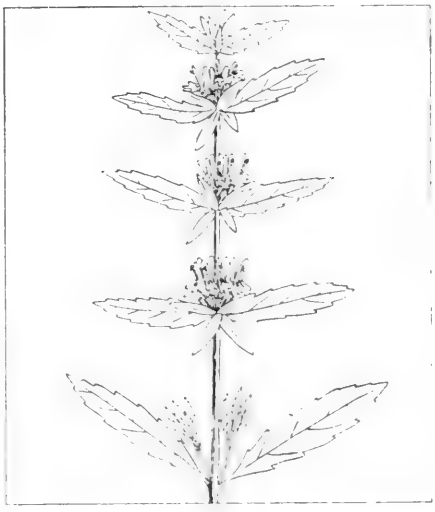
Used as a tonic.



MITCHELLA REPENS L. Squaw vine, partridge berry, twin berry, squaw berry. ***Rubiaceae.***—A trailing, leafy, branched, smooth herb, evergreen and matted on the ground; stems 6 to 12 inches long, rooting at the nodes; leaves dark green, shining, roundish, ½ inch long, leathery, petioled, opposite; flowers white, about ½ inch long, trumpet-shaped, borne in pairs at the tips of the branches; fruit a red, fleshy berry containing 8 small, horny nutlets.

The herb collected. Common, even abundant, locally through most of the state in woods-covered acid soils.

Contains tannin and a bitter principle. Said to be an astringent, diuretic, and parturifacient.



MONARDA PUNCTATA L. Horse mint. ***Labiatae.***—An erect, aromatic, white-downy, much-branched herb 2 to 3 feet tall, perennial; leaves lanceolate, 1 to 3 inches long, petioled, opposite, serrate with low teeth; flowers yellowish, purple-spotted, about 1 inch long, 2-lipped, in dense axillary whorls and terminal clusters subtended by conspicuous, showy, white or purplish bracts.

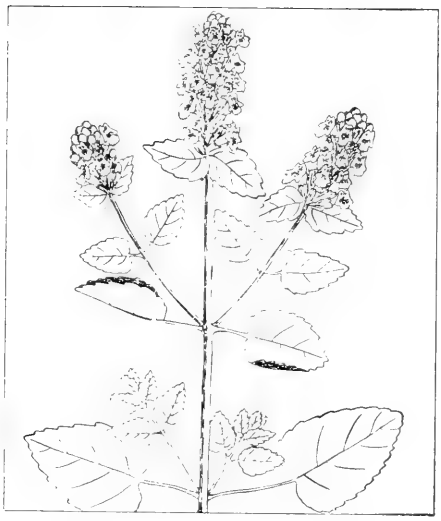
The herb (leaves and flowering parts) collected. Common or abundant on open, sandy dunes, small hills, and sand prairies.

Contains the volatile oil of monarda, from which thymol can be derived. Used as a stimulant and aromatic, also as a diaphoretic.

MYRICA ASPLENIFOLIA L. Sweet fern, fern gale, meadow fern, shrubby fern, sweet bush. *Myricaceae.*—A small, sweet-scented, pubescent herb 1½ to 3 feet tall; stems and branches erect or spreading; leaves linear oblong, deeply cut into many rounded lobes, alternate, stipulate, 3 to 6 inches long; male flowers in catkins clustered at the ends of branches; female flowers in short catkins clustered on very short, lateral branches; fruit burlike, usually 4-seeded.

The leaves and top collected. In open places in oak woods on sandy, acid soil in the extreme northeastern corner of Illinois; infrequent and local.

Contains a volatile oil (oil of sweet fern) and tannin. Used as a stimulant and astringent.



NEPETA CATARIA L. Catnip, cat mint, catwort, catrup. *Labiatae.*—An erect, branched, white-downy, aromatic herb 2 to 3 feet tall, perennial; rootstocks short; stems 4-angled, purplish below; leaves green, cordate-oblong, 1 to 2 inches long, opposite, petioled, round-toothed, white-downy beneath; flowers whitish, purple-spotted, small, 2-lipped, in clusters in the upper leaf axils and in terminal, thick spikes.

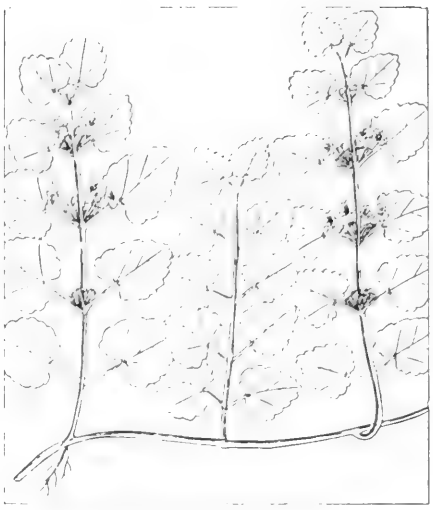
The herb, leaves, and flowering parts collected in full flower. Common as a weed in waste places and about dwellings in all parts of the state.

Contains a volatile oil. Used as a stimulant.

NEPETA HEDERACEA (L.) Trevisan. **Ground ivy, gill-over-the-ground, cat's foot, field balm.** ***Labiatae.***—A creeping and trailing, slightly aromatic, smooth herb, perennial; flowering stems numerous, erect, 4-angled; leaves round, kidney-shaped, ½ to 1 inch wide, opposite, petioled, crenate, palmately veined; flowers purplish, small, 2-lipped, in axillary clusters or whorls.

The herb (leaves and flowering parts) collected. Frequent to common as a weed in waste places and gardens and about dwellings throughout the state.

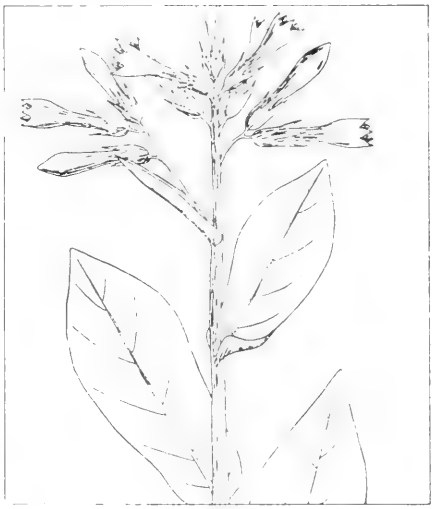
Contains a volatile oil and a bitter substance. Used as a stimulant, carminative, and tonic.



NICOTIANA TABACUM L. **Tobacco.** ***Solanaceae.***

The leaves collected. Grown occasionally and locally in small fields in many parts of the state, especially near the northern border.

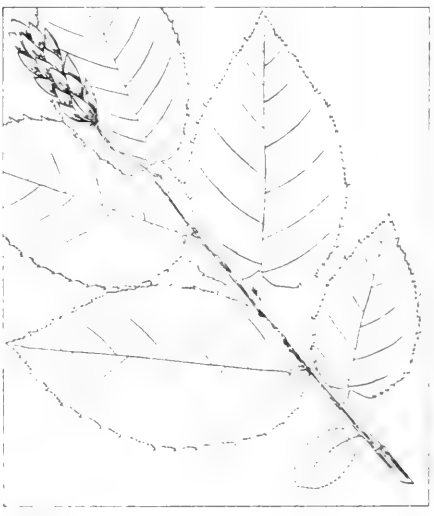
Contains the toxic alkaloid nicotine and a volatile oil. Used as an emetic, sedative, and narcotic; nicotine is used extensively as an insecticide.



OSTRYA VIRGINIANA (Mill.) K. Koch. **Hop hornbeam, ironwood, leverwood, black hazel, Indian cedar.** ***Betulaceae.***—A small, open, and round-topped tree 25 to 40 feet tall; branches slender; bark of the trunk grayish, with narrow, oblong scales loose at the ends, thin; leaves resembling elm leaves, oval, pointed, symmetrically cordate, 3 to 5 inches long, alternate, short-petioled, finely double-toothed; flowers in catkins; fruit a long-stalked, conelike structure resembling the fruit of the hop.

The bark and inner wood collected. Among oaks and other taller trees on the high banks of streams in all but the most southern counties.

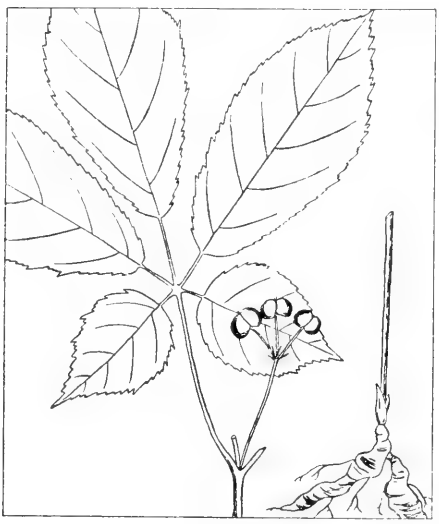
Contains tannin. Used as a tonic, alterative, and antiperiodic.



PAEONIA OFFICINALIS L. Peony. *Ranunculaceae.*

Roots, flowers, and seeds collected. Cultivated, but infrequently, as a decorative plant; most of the cultivated peonies belong to the species *P. albiflora* Pallas.

Contains an unidentified alkaloid. Used as an emmenagogue, ecbolic, and uterine hemostatic.

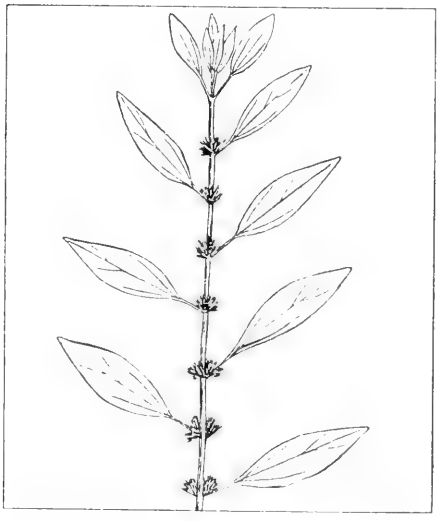


PANAX QUINQUEFOLIUM L. Ginseng, American ginseng, sang, five fingers, red berry, man root. *Araliaceae.*—

An erect, unbranched, smooth herb 8 to 15 inches tall, perennial; taproot spindle-shaped, branched or forked after the second year, deep, 2 to 3 inches long, ½ to 1 inch thick; stem leafy only at the summit; leaves 3 in number, palmately compound, petioled, each with 5 obovate, pointed, irregularly dentate leaflets 2 to 5 inches long; flowers yellow-green, small, 6 to 20 in a stalked umbel arising with the leaves from the end of the stem; fruit a bright crimson berry.

The root is collected only in the fall and *dried whole.* Rare, or at most infrequent, in rich woods throughout the state.

Contains a glucoside, a saponin, a bitter principle, and a volatile oil. Used as an aromatic bitter, mild stimulant, and stomachic.



PARIETARIA PENNSYLVANICA Muhl. Pellitory, wall pellitory. *Urticaceae.*—

A low, weak, reclining or ascending, sparingly branched, pubescent herb, annual; stems very slender, 4 to 15 inches long; leaves lanceolate, acuminate, 1 to 3 inches long, petioled, alternate, entire, 3-nerved; flowers greenish, inconspicuous, in small, axillary clusters surrounded by conspicuous, leaflike bracts.

The herb collected. Infrequent to frequent in colonies in dry woods throughout the state.

Used as a diuretic, emmenagogue, and deobstruent.

PARTHENIUM INTEGRIFOLIUM L. Feverfew, American feverfew, prairie dock. ***Compositae.***—An erect, finely hairy, little-branched herb 1 to 4 feet tall, perennial; rootstock tuberous; stem stout, striate, the lower part often glabrous; leaves ovate, firm, rough on both sides, up to 12 inches long, sessile, or the lowest petioled and lyrate, alternate, crenate-toothed; flower heads spherical, small, with only about 5 small, white, marginal rayflowers, numerous in a dense, terminal, flat-topped inflorescence.

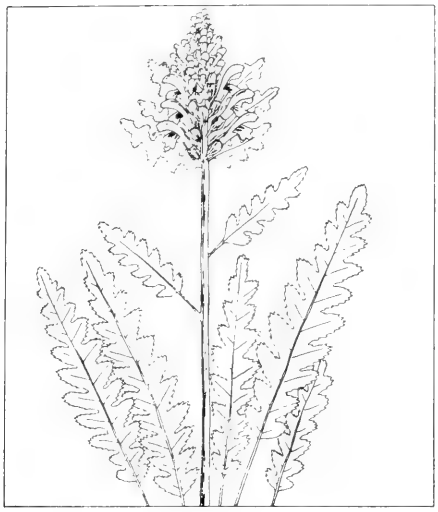
The herb collected. Infrequent to rare along transportation lines, where original prairie conditions remain undisturbed.

PASSIFLORA INCARNATA L. Maypop, passion flower, passion vine. ***Passifloraceae.***—A slender, tendril-bearing, climbing, pubescent herbaceous vine, perennial; stems 3 to 30 feet long; leaves 3 to 5 inches wide, petioled, alternate, deeply divided into 3 oval, pointed, serrate lobes; tendrils axillary; flowers white, with a central, pale purple, long fringe, 1½ to 2 inches wide, solitary on long, jointed, axillary stalks; fruit a yellow, fleshy, edible, many-seeded berry about 2 inches long.

The flowering and fruiting tops are collected, also the roots. Infrequent to rare on wooded rocky slopes, on fences, and in swamps in the extreme southern part of the state.

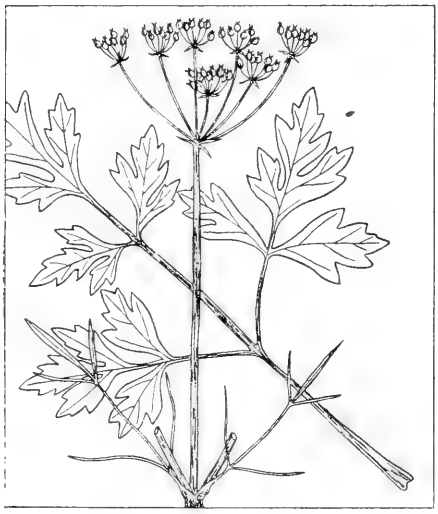
Used as a uterine sedative and hemostatic.

[*Passiflora lutea* L., yellow passion flower, is also collected. It is a rare to infrequent vine in woods along streams, on rocky slopes, and in orchards from Calhoun and Wabash counties southward.]



PEDICULARIS CANADENSIS L. Wood betony, head betony, lousewort, snaffles. ***Scrophulariaceae.***—An ascending or erect, unbranched, usually pubescent herb 6 to 18 inches tall, perennial; stems in tufts; leaves oblong-lanceolate, pinnately cut into many toothed lobes, 3 to 5 inches long, mostly alternate, slender-petioled; flowers yellow or reddish, about ¾ inch long, 2-lipped and hood-shaped, in short, crowded, terminal spikes; fruit a slender, many-seeded capsule more than ½ inch long.

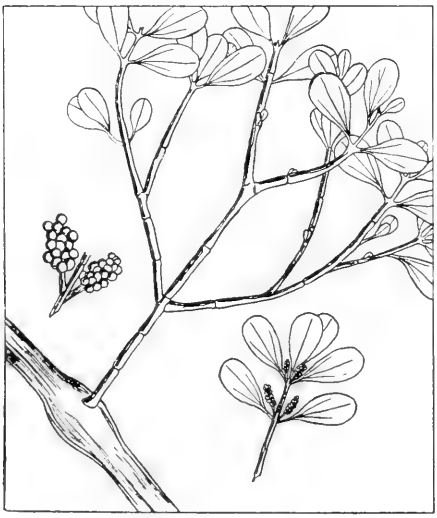
Infrequent to frequent on oak-covered slopes along streams, but rare in the southern third of the state.



PETROSELINUM HORTENSE Hoffm. (*P. sativum* Hoffm.) Parsley. ***Umbelliferae.***

The seed and root collected. Grown in gardens; not known to have become established as an escape.

Yields an oily resin (oleoresin of parsley seed) and apiol, the aromatic derivative from the resin. The seed is used as a carminative, stimulant, and diuretic; apiol is used as an emmenagogue, ecbolic, and antipyretic.



PHORADENDRON FLAVESCENS (Pursh) Nutt. Mistletoe. ***Loranthaceae.*** — Succulent, evergreen, parasitic shrubs growing on the branches of trees; stems rarely 3 feet long, with many opposite branches; leaves obovate, thick, ½ to 2 inches long, opposite, nearly sessile; flowers small and inconspicuous; fruit a small, globose, white berry.

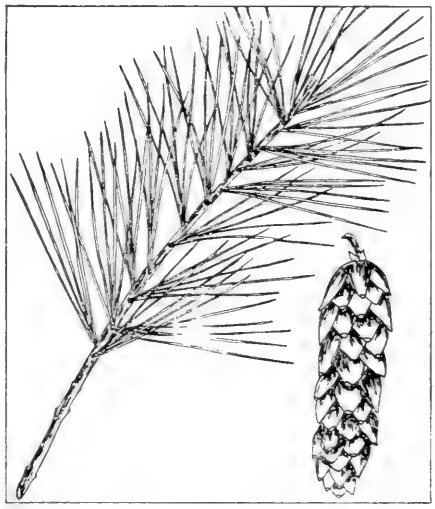
The leaves and young stems collected. Infrequent to common on several species of trees, especially American elm, in the Wabash River valley.

Contains the medicinal principle tyramine. Used as an emmenagogue and as a hemostatic.

PHYTOLACCA DECANDRA L. Pokeweed, pokeberry, poke, inkberry, garget, cancer jalap. *Phytolaccaceae.*—An erect, branched, smooth herb 3 to 10 feet tall, perennial; taproot thick, fleshy, white, very large; stem coarse, succulent, purplish; leaves ovate, smooth, up to 5 inches long, entire, petioled, alternate; flowers white, small, in long racemes at the growing tips and leaf axils; fruit a dark purple, flattened, spherical berry with crimson juice and about 10 seeds.

The berries are collected when ripe, the root and leaves in the autumn. Frequent as a weed in waste places, pastures, and open woods throughout the state.

Contains a bitter, saponin-like substance and, in small amounts, the alkaloid phytolaccine. Used as an alterative, emetic, and purgative.



PINUS STROBUS L. White pine. *Pinaceae.*—A tall, straight, evergreen tree 90 feet or more in height; bark of the trunk dark gray, divided by shallow fissures into broad, continuous ridges; foliage in the form of needles; needles in bundles of 5; fruit a long-stalked, pendant cone 4 to 6 inches long.

The inner white bark is collected. Native and localized in Jo Daviess, Ogle, Lake, and La Salle counties; also planted extensively for reforestation.

Contains tannin and an oleoresin. Used as a mild expectorant.

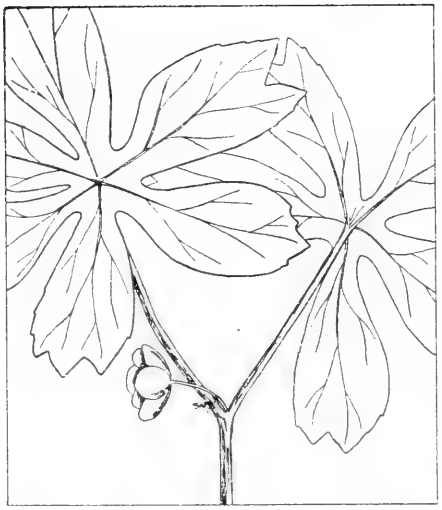
[*Pinus sylvestris* L., Scotch pine, is grown frequently in the state as an ornamental tree. Its needles are collected.]

PLANTAGO MAJOR L. Plantain, broad-leaved plantain, dooryard plantain. ***Plantaginaceae.***—A low, stemless, broad-leaved herb, perennial; rootstock short, erect, thick; leaves ovate to orbicular, up to 10 inches long, prominently parallel-veined; petiole long, ribbed; flowers greenish, small, in dense spikes 2 to 10 inches long at the top of a leafless, flowering stem up to 3 feet tall; fruit a tiny, several-seeded capsule.

The leaves collected. Rare to infrequent throughout the state as a weed in waste places.

Used as an astringent and diuretic and said to be antiseptic.

[*Plantago lanceolata* L., snake plantain, with long, lanceolate leaves, is collected especially for its leaves and roots, which are astringent and alterative. As a weed, it is common in fields and waste places throughout the state.]



PODOPHYLLUM PELTATUM L. May apple, mandrake, ground lemon, vegetable calomel. ***Berberidaceae. U. S. P. XI, pp. 294, 319.***—An erect, unbranched, smooth herb about 1 foot tall, perennial; rootstock horizontal, stout, creeping, smooth, round, dark brown, fibrous-rooted; leaves 2 in number, umbrella-like, 5- to 9-lobed, the lobes again lobed at the tip, up to 12 inches wide, long-petioled from the top of the naked stem; flowers white, waxy, up to 2 inches wide, hidden below the leaves, nodding on a stalk from the top of the stem; fruit a yellow, lemon-shaped berry about 2 inches long.

The rootstock collected in late September or October, or for some purposes throughout the summer. Common to abundant in moist woods throughout the state.

Contains several resins, known collectively as podophyllin; one of them is the poisonous principle podophyllotoxin. Used as a drastic purgative and hydragogue.

POLYGALA SENEGA L. Seneca snakeroot, senega snakeroot, rattlesnake-root. *Polygalaceae.*—An erect, bushy, unbranched, smooth herb 6 to 12 inches tall, perennial; rootstock horizontal, woody, with a knotty crown and tortuous branches; stems 15 to 20 or more in a clump, slender, sometimes reddish; leaves lanceolate, 1 to 2 inches long, thin, alternate, sessile; flowers white, small, in dense spikes 1 to 2 inches long at the ends of the stems; fruit a small, membranous capsule.

The rootstock collected in the fall; the knotty crown must be removed. Infrequent in rich, dry woods, especially along streams and about lakes, in the northern half of the state.

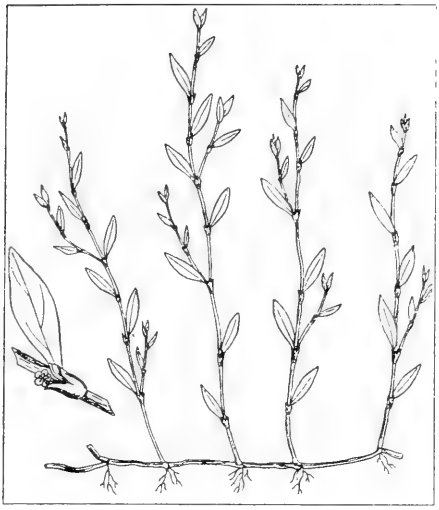
Contains an acrid principle, senegin, and a sternutatory one, polygalic acid. Used as a diaphoretic, diuretic, expectorant, and emetic.

POLYGONATUM BIFLORUM (Walt.) Ell. Solomon's seal, sealwort, conquer-John. *Liliaceae.*—An ascending, arched, unbranched, smooth herb 1 to 3 feet tall, perennial; rootstocks thick, knotted, horizontal, bearing scars, or seals; stems leafy above, leafless below; leaves ovate-oblong, 2 to 4 inches long, nearly sessile, alternate but appearing in 2 opposite ranks, entire, parallel-veined; flowers greenish, tubular, about ½ inch long, 1 to 4, usually 2, at the tip of the drooping, axillary peduncle; fruit a blue-black, glaucous, pulpy berry.

The rhizome and roots collected. Frequent to common in moist woods and, in the open, growing along fences and roadsides throughout the state.

The medicinally active constituents unknown; contains mucilage. Used to allay irritation of mucous surfaces.

[*Polygonatum commutatum* (R. & S.) Dietr., smooth or giant Solomon's seal, similar to the species above but reaching a height of 8 feet, is collected without discrimination.]



POLYGONUM AVICULARE L.

Knotgrass, knotweed, dooryard weed, mat grass. ***Polygonaceae.***—A prostrate or ascending, much-branched, matted herb, annual; stems slender, striate; leaves bluish-green, lanceolate, ¼ to ¾ inch long, alternate, entire; petioles very short, connected with a papery sheath at the stem node; flowers pinkish, very small, in axillary clusters; fruit a small, 3-angled, reddish-brown to black, dull achene or seed.

The herb collected; also occasionally the root and seeds. Common in waste places throughout the state.

Used as an astringent; the seeds are aromatic, purgative, and emetic.

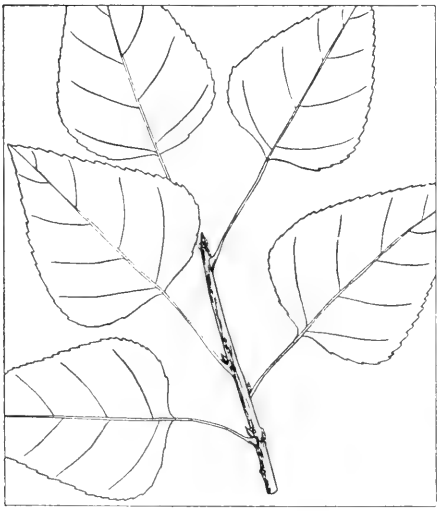
POLYGONUM HYDROPIPER L.

Smartweed, water pepper, pepper plant, red shanks. ***Polygonaceae.***—An erect, basally branched, smooth herb 1 to 2 feet tall, annual; stems jointed, reddish, sheathed at the nodes; leaves narrowly lanceolate, 1 to 4 inches long, peppery-tasting, entire, alternate, petioled; flowers greenish, dark-dotted, small, numerous in nodding, closely flowered, terminal spikes; fruit dull, purple-black, small, lens-shaped or 3-angled.

The herb collected. Infrequent to locally abundant both as a native plant along streams and as a weed in low, wet fields, pastures, and waste places throughout the state.

Contains the acrid principle known as polygonic acid. Used externally as a counterirritant, internally as a stimulant and diaphoretic.

[*Polygonum punctatum* Ell., water smartweed, occurring throughout the state, is also collected as an herb.]



POPULUS BALSAMIFERA L.

Balsam poplar. ***Salicaceae.***

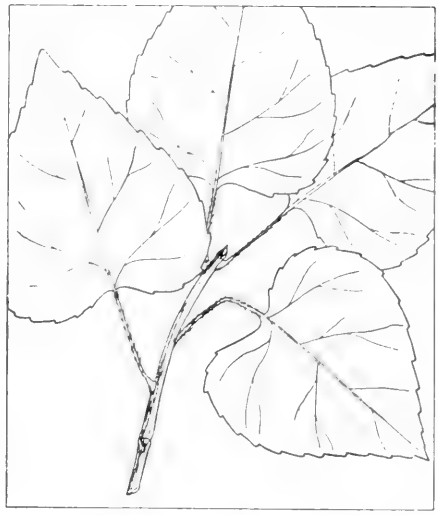
The leaf buds collected. Planted as an ornamental tree.

For contents and uses, see *Populus candicans.*

POPULUS CANDICANS Ait. **Balm of Gilead.** *Salicaceae.*

The buds are collected. Planted occasionally as an ornamental tree.

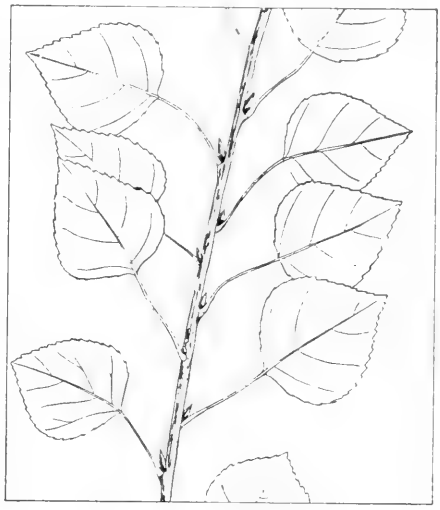
Contains an aromatic, volatile oil, a balsamic resin, and salicin. Used as a tonic, stimulant, and expectorant; used formerly in ointments to prevent their becoming rancid.



POPULUS TREMULOIDES Michx. **Trembling aspen, aspen, white poplar.** *Salicaceae.*—A small, open, round-topped tree with slender branches drooping at the tips, 30 to 60 feet tall; bark of the trunk black, fissured, with broad, flat ridges or, on young trees, yellow-green to gray and warty-roughened; leaves broadly ovate, lustrous, pointed, rounded at the base, finely and regularly toothed, trembling in breezes; petioles flattened; catkins 1½ to 2½ inches long, in fruit 3 to 4 inches long.

The bark collected. Infrequent in low, sandy ground near Lake Michigan; rare westward and southward in the state.

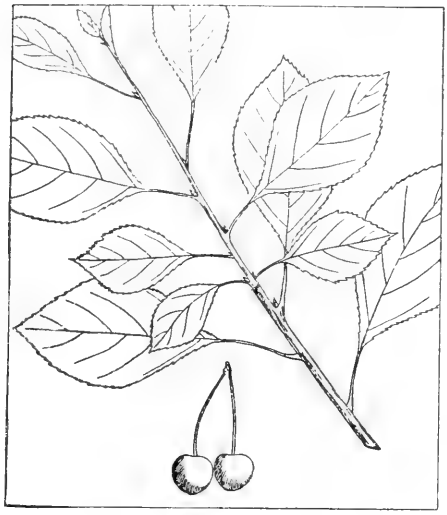
The bark contains the crystalline glucoside populin, which resembles salicin. Used as a bitter tonic and a feeble antiperiodic.



PRUNELLA VULGARIS L. **Self-heal, heal-all, carpenter-weed, dragon head.** *Labiatae.*—A prostrate, ascending or erect, branching, pubescent herb up to 18 inches tall, perennial; stems 4-angled, glabrous with age; leaves ovate-oblong, 1 to 4 inches long, petioled, opposite, irregularly dentate to entire, obtuse, narrowed to the base; flowers purple, 2-lipped, in dense, terminal, conspicuously bracted, nearly sessile spikes ½ to 1 inch long; spikes 2 to 4 inches long in fruit.

The herb collected. Frequent to common in waste places, pastures, and fields, and about dwellings throughout the state.

Contains a volatile oil.



PRUNUS CERASUS L. Cherry (cultivated). ***Rosaceae.***

The fruit collected. Grown in home yards and small orchards in all parts of the state.

Contains malic acid. Used as a pleasant syrup for disguising acidic medicines.

PRUNUS DOMESTICA L. Prune, plum. ***Rosaceae.***

The fruit collected. Grown in yards and in small plantings in many parts of the state.

Contains malic acid and citric acid. Used as a laxative and as a nutrient.

PRUNUS PERSICA Sieb. & Zucc. Peach. ***Rosaceae.***

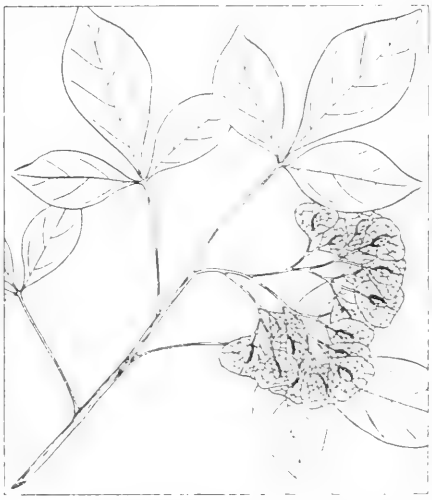
Seed of the current year's crop collected, also the bark, leaves, and flowers. Grown in extensive orchards in southern counties, occasionally in small plantings in central and northern counties.

Contains amygdalin, which yields hydrocyanic acid. Used as a flavoring, laxative, and sedative.

PRUNUS SEROTINA Ehrh. Wild black cherry, wild cherry, rum cherry. ***Rosaceae.*** *U. S. P. XI, pp. 307, 377.*— A moderate to large tree up to 80 feet or more high; bark of the trunk dark red-brown, plated; inner bark aromatic; leaves dark green, leathery, oblong-ovate, long-pointed, 2 to 4 inches long, short-petioled, alternate, finely serrate; flowers white, ¼ to ½ inch wide, in racemes 4 to 6 inches long; fruit a nearly black, fleshy drupe of pleasant flavor.

The bark of the stem is collected in autumn and carefully dried. If borke (rough outer bark) is present, it should be removed. Fruit is collected when ripe. Frequent to abundant in open woods and as a weed tree along fences and roads throughout the state.

Contains the glucoside amygdalin, which yields hydrocyanic (prussic) acid when acted on by the enzyme emulsin; contains also tannic and gallic acids, a resin, and a bitter principle. Used as a tonic, astringent, and sedative.



PTELEA TRIFOLIATA L. Hop tree, wafer ash, wing seed, ague bark, stinking ash, quinine tree. ***Rutaceae.***—An erect, few-stemmed, ill-scented, smooth shrub 6 to 8 feet tall; bark of the stems gray to gray-brown, smooth or, when old, roughened; leaves dark green, long-petioled, alternate, compound; leaflets 3, shaped like those of an ash, 1½ to 6 inches long, short-pointed, entire to coarsely serrulate, lateral leaflets two-thirds as large as the terminal one; flowers greenish-white, small, in terminal, branched clusters; fruit round, flat, broadly winged, strongly veiny.

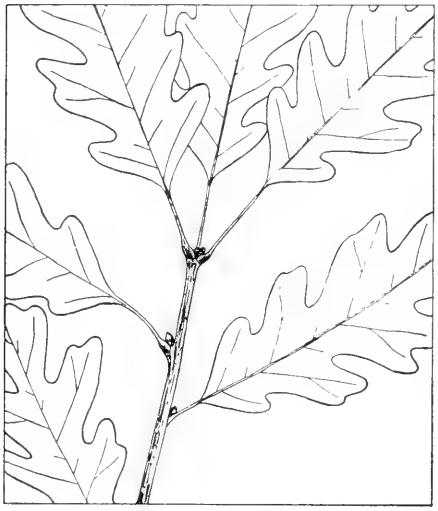
The fruit, leaves, and bark of the root collected. Infrequent in shady woods, especially on the flats and lower banks along streams; throughout the state.

The bark of the root contains a resin and berberine, the fruit a resin, the leaves tannic and gallic acids. Used as a tonic.

PYRUS MALUS L. Apple (cultivated). ***Rosaceae.***

Bark and fruit collected. Grown in yards and in small and large orchards, in all parts of the state.

The bark contains tannin, the glucoside phloridzin, and malic acid; the fruit juice contains malic acid, sugar, and pectin. Used as a mild laxative and refrigerant.



QUERCUS ALBA L. White oak, stave oak, stone oak. ***Fagaceae.***—A moderate to very large tree 60 to 100 feet or more high, narrowly crowned with stout branches; bark of the trunk gray to whitish, shallowly fissured into irregular, long, thin scales; leaves bright green, deeply 7- to 9-lobed, the lobes shouldered and rounded at their tips, stout-petioled, alternate; flowers inconspicuous; acorn oval, shiny, light brown, ¾ inch long, in shallow, scaly cups.

The bark, with the corky layer removed, is collected from trunks and branches 10 to 25 years old. Common to abundant as a constituent of woods and forests throughout the state.

Contains tannin and the glucoside quercitrin. Used as an astringent and tonic.

[*Quercus rubra* L., red oak, and *Quercus velutina* Lam., black oak, are also sought for their barks. In the collecting, drying, and shipping, barks of the white, red, and black oaks should be kept separate.]

RADICULA ARMORACIA (L.) Rob. Horseradish. ***Cruciferae.***

The root collected. Cultivated in gardens throughout the state and grown commercially in the vicinity of large cities.

Contains the glucosides sinigrin and myrosin; these react in the presence of water to form volatile oil of mustard. Used as a condiment, emetic, and rubefacient.

RADICULA NASTURTIUM-AQUATICUM (L.) Britten & Rendle. Water cress, nasturtium. *Cruciferae.*—A floating or creeping, much-branched, smooth herb with stems rooting from the nodes, biennial; leaves alternate, deeply lobed into 3 to 9 segments, the terminal segment nearly round and larger than the lateral ovate segments; flowers white, small, 4-parted, in terminal racemes; fruit a slender, forward-pointing pod ½ to 1¼ inches long, with seeds in 2 rows.

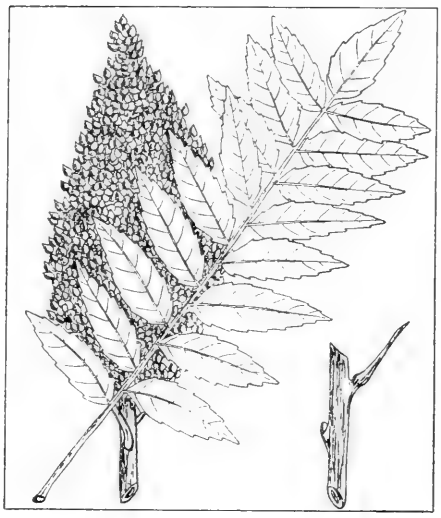
The herb collected. Common, locally abundant, in the clear waters of springs, creeks, and other streams in the northern half of the state.

Yields a volatile oil similar to oil of mustard, when distilled with water. Used as an antiscorbutic and "blood purifier."

RHUS CANADENSIS Marsh. Fragrant sumac. *Anacardiaceae.*—A spreading, much-branched, diffuse shrub about 3 feet tall; leaves compound, petioled, alternate; leaflets 3, ovate, coarsely crenate-toothed, pubescent on both surfaces, the terminal one 1 to 4 inches long, the lateral ones noticeably smaller; flowers greenish-yellow, small, in dense clusters at the tips of twigs before the leaves appear; fruit a red, globose, densely hairy, 1-seeded drupe.

The bark collected. Widely distributed and locally abundant in wooded sandy regions, along rocky stream and ravine banks, and dry hilltops throughout the state.

Yields rhus aromatic bark.

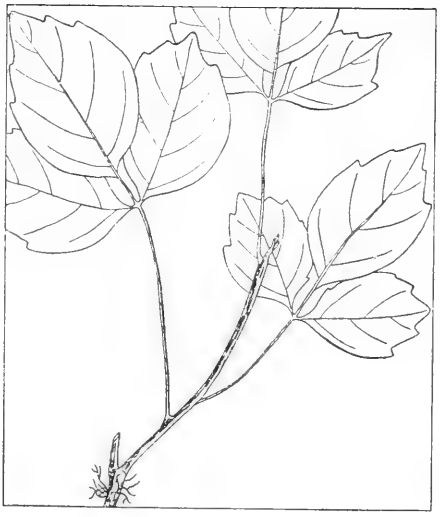


RHUS GLABRA L. Smooth sumac, scarlet sumac, vinegar tree. ***Anacardiaceae.***—An upright, upwardly spreading, smooth shrub up to 12 feet tall; bark of the stems brownish gray, smooth; branches coarse, spreading, armlike, with large pith; leaves bright green above, white beneath, pinnately compound, 1 to 3 feet long, leaflets 11 to 31 in number, lanceolate, pointed, sharply serrate, 2 to 4 inches long; flowers greenish-yellow, small, in large, dense, terminal clusters; fruit a round, bright red or green, hairy drupe in dense, large, terminal, club-shaped clusters.

The leaves, fruit, and bark of the stem and root collected. Frequent to common or locally abundant throughout the state as a weed along fences, in abandoned fields, and at the edges of woods.

The berries contain acid malates equivalent to 6 to 8 per cent of malic acid; the leaves and bark contain tannin and gallic acid. Used as an astringent, refrigerant, and gargle.

[*Rhus typhina* L., staghorn sumac, and *Rhus copallina* L., dwarf sumac, are collected, the former for fruit, the latter for bark.]



RHUS TOXICODENDRON L. Poison ivy, poison oak. ***Anacardiaceae.***—A low shrub or climbing vine; stems underground or clinging by multitudes of fibrous roots, very long; leaves compound, alternate, long-petioled; leaflets 3, the terminal one stalked, ovate, pointed, 2 to 6 inches long, the lateral two nearly sessile, asymmetrical, of about the same size, all three variable in size, coarsely dentate or entire; flowers greenish, inconspicuous, in small, axillary panicles; fruit a pale, greenish-white, nearly pulpless, flattened, smooth drupe.

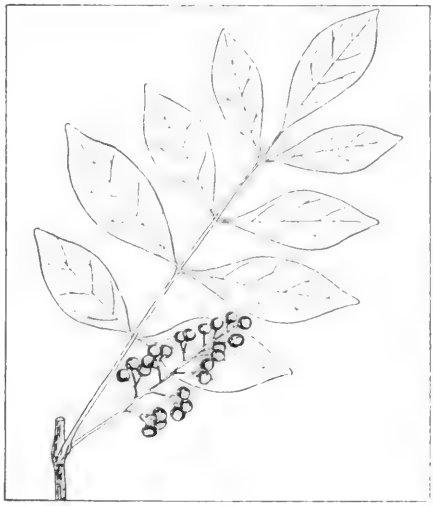
The leaves are collected and sold fresh or dry. Common to abundant throughout the state as a vine on tree trunks and fences and as a shrub in woods, along fencerows, and in wasteland.

Contains only the poisonous, volatile oil urushiol. Supposed to have value in the treatment of cutaneous eruptions.

RHUS VERNIX L. Poison sumac, poison elder. ***Anacardiaceae.***—An erect, upwardly branched, treelike shrub up to 25 feet tall, with a spreading crown; leaves dark green, pinnately compound, alternate, 6 to 15 inches long; leaflets oval, pointed, 7 to 13 in number, 2 to 4 inches long, entire, short-stalked; flowers greenish-yellow, small, in large, compound, loose, axillary panicles; fruit a pale green, small, smooth, flattened drupe.

The leaves collected. Found only in the cold bogs of Lake and McHenry counties.

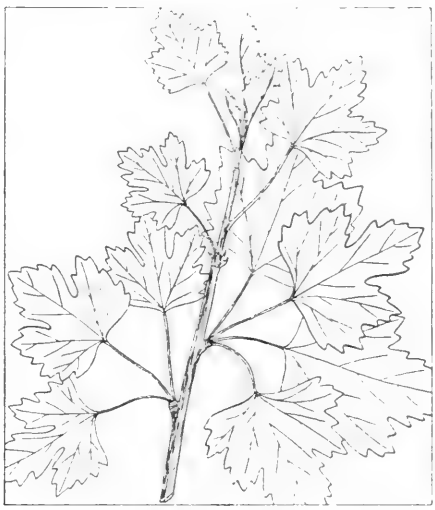
Contains urushiol. Used as an antigen for poison ivy and poison oak poisoning.



RIBES NIGRUM L. Black currant. ***Saxifragaceae.***

The leaves collected. Grown in gardens throughout the state.

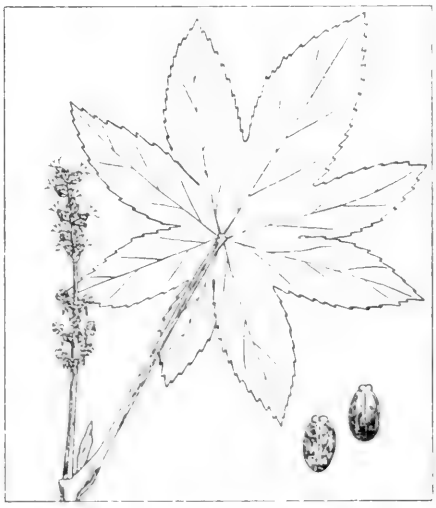
Used as a diuretic.

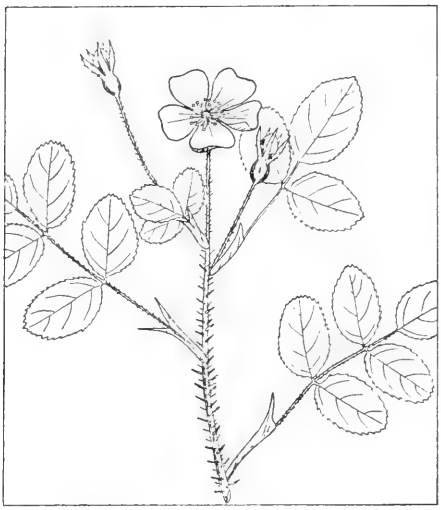


RICINUS COMMUNIS L. Castor bean. ***Euphorbiaceae.***

The seed collected. Frequently grown in gardens as a decorative plant; occasionally escapes from cultivation but does not persist.

Contains castor oil, also the phytotoxin ricin. Used as a cathartic and purgative.

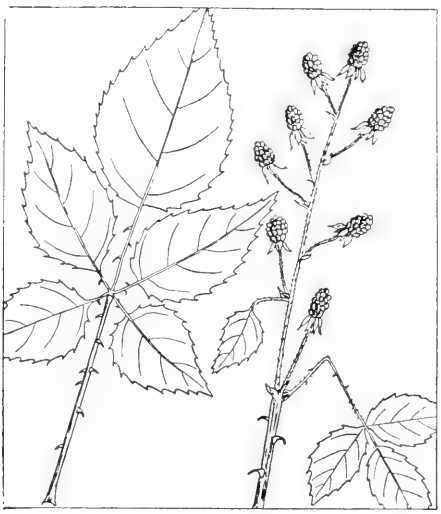




ROSA GALLICA L., var. OFFICINALIS Thory. French rose, apothecary rose. ***Rosaceae.*** *U. S. P. XI, p. 266.*

Flowers collected fresh and distilled with steam. Cultivated in gardens in many parts of the state but not known to have become established as an escape.

Yields a volatile oil and the glucoside quercitrin. Used as an aromatic flavoring and mild astringent.



RUBUS ALLEGHENIENSIS Porter. Blackberry, Allegheny blackberry. ***Rosaceae.***—An erect, prickly-armed, glandular-hairy shrub 3 to 6 feet tall; stems round below, angled above, recurving at the ends; leaves compound, petioled, alternate; leaflets 5 (on fruiting branches 3), ovate, acuminate, doubly serrate, up to 5 inches long; flowers white, ½ to 1 inch wide, numerous in terminal, bracted (not leafy), hairy, glandular racemes 5 to 10 inches long; fruit black, hemispheric to oval, up to ½ inch long, acid-sweet.

The fruit, root, and bark of the root collected. Common to abundant throughout the state along roads and fences and in open woods.

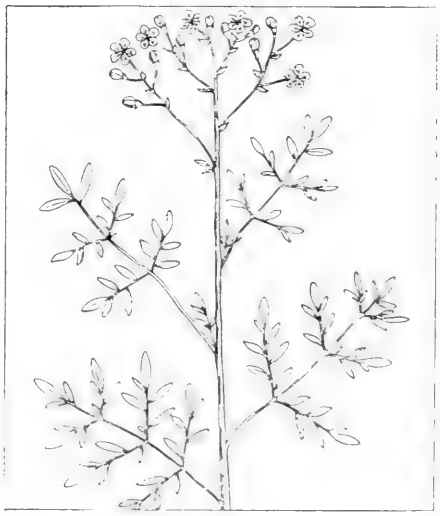
Contains tannin and the glucoside villosin. Used as a mild astringent; the fruit syrup is used as a vehicle for other drugs.

[*Rubus idaeus* L., red raspberry (including cultivated forms), and *R. occidentalis* L. The fruit collected, as raspberry fruit; "raspberry" bark taken chiefly not from these species but from the roots of blackberry species.]

RUMEX CRISPUS L. Sour dock, narrow dock, yellow dock, curled dock. ***Polygonaceae.*** — An erect, upwardly branched, dark green, smooth herb 1 to 3½ feet tall, perennial; taproot large, fleshy, 8 to 12 inches long; stems slender, furrowed, angular; basal leaves oblong, 6 to 12 inches long, wavy and crisped on the margins, long-petioled; stem leaves smaller, short-petioled, alternate; flowers green, small, on slender, drooping stalks, numerous in whorls on branches forming a panicle; fruit dry, brown, 3-winged, containing a dark brown, shining, 3-angled seed.

The root is collected in summer or fall, after the seeding tops have turned brown. Frequent to common in waste places, along roads and ditches, and in low, damp ground throughout the state.

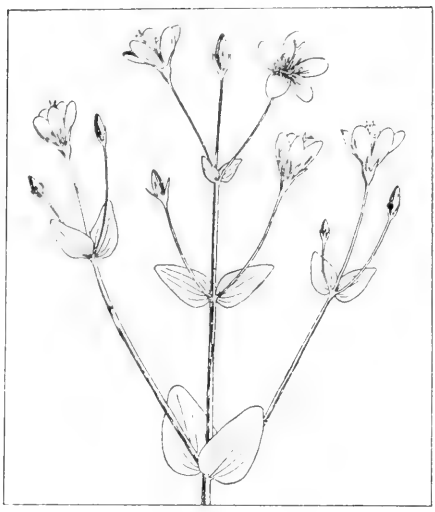
Contains rumicin (this is isomeric with chrysophanic acid), tannin, and other principles. Used as tonic, astringent, and laxative.



RUTA GRAVEOLENS L. Rue, common rue. ***Rutaceae.***—An erect, aromatic, smooth, glaucous herb 1 to 3 feet high, perennial; leaves aromatic, pinnately divided or compound, alternate; leaflets oblong to spatulate, entire; flowers yellow, ½ inch wide, in terminal clusters; fruit a lobed capsule.

The leaves collected. Grown formerly in herb gardens but not known to have escaped and persisted in the state.

Contains the glucoside rutin. Used as a stimulant, antispasmodic, and emmenagogue.



SABATIA ANGULARIS (L.) Pursh. American centaury, rose pink, bitter bloom. ***Gentianaceae.***—An erect, much-branched, smooth herb 1 to 2 feet high, biennial; stem stout, 4-angled, with opposite branches; leaves ovate, ¾ to 1½ inches long, opposite, sessile, cordate-clasping, entire; flowers rose-pink, fragrant, with a central greenish star, showy, 1 to 1½ inches wide, solitary on long peduncles arising from the upper axils; fruit an oblong, many-seeded capsule.

The herb collected. Infrequent to frequent in old fields and on dry, open, or openly wooded hillsides throughout the state.

Contains the bitter principle erythrocentaurin, a volatile oil, and a greenish resin. Used as a bitter tonic.

SALIX NIGRA Marsh. Black willow, swamp willow. ***Salicaceae.***—A large, often very tall tree with an open crown of ascending large branches and drooping twigs; bark of the trunk brown to nearly black, deeply furrowed into narrow, connecting ridges; buds sharp-pointed, up to 1/8 inch long, covered by 1 reddish-brown scale; leaves narrowly lanceolate, 3 to 6 inches long, alternate, petioled, long-pointed, finely serrate; flowers in catkins.

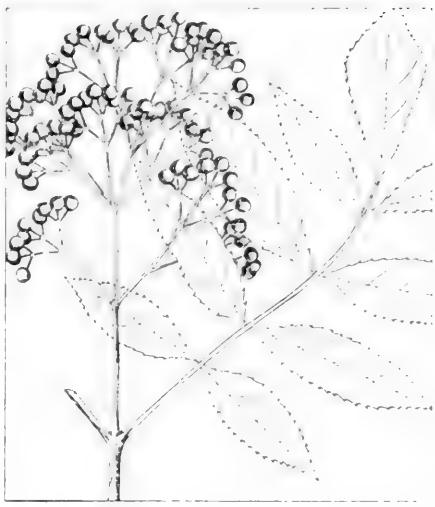
The bark and buds collected; the buds are described as "blooms." On low, alluvial ground, especially along streams, throughout the state.

The bark contains salicin and tannin; the wood is made into charcoal. Used as a tonic and antiperiodic; also in rheumatism.

SALVIA OFFICINALIS L. Sage, garden sage. ***Labiatae.***

The leaves collected. Now infrequently grown in the state as a garden herb.

Contains the volatile, aromatic oil cineol, thujone, and other principles. Used as an aromatic flavor, tonic, mild astringent, and antiseptic.

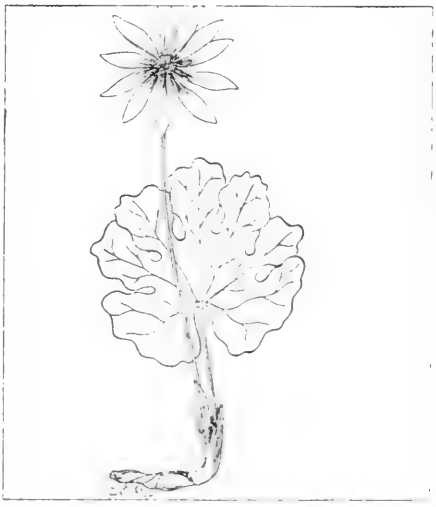


SAMBUCUS CANADENSIS L.

Elderberry, sweet elder, American elder. ***Caprifoliaceae.***—An erect, many-stemmed, smooth shrub 5 to 10 feet tall; bark gray; stems and branches with large pith; leaves pinnately compound, 6 to 10 inches long, opposite; leaflets ovate, pointed, serrate, generally 5 or 7 in number, up to 5 inches long; flowers white, small, 5-parted, numerous in a large, terminal, branched inflorescence; fruit a black, globose, 3- to 5-seeded berry with crimson juice.

The flowers, the berries when ripe, the inner bark of the stem, and the bark of the root collected. Frequent to common along streams and in moist, open soil throughout the state.

The berries contain malic acid; the flowers contain a volatile butyraceous oil, tannin, and mucilage; the bark contains valerianic acid; all parts contain a bitter alkaloid and a glucoside which can yield prussic acid. The bark is used as a cathartic, the berries are used in cooling drinks, the flowers as a mild astringent in eye lotions.

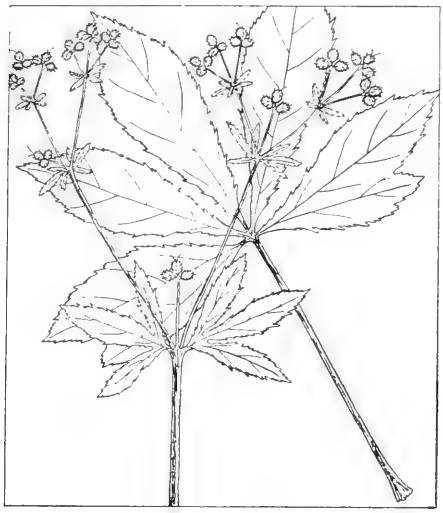


SANGUINARIA CANADENSIS L.

Bloodroot, red-root, puccoon root, red puccoon, puson. ***Papaveraceae.***—A low, stemless, 1-leafed, glaucous, smooth herb ½ to 1½ feet tall, perennial; rootstock horizontal, fleshy, ½ to 1 inch thick, 1 to 3 inches long, fibrous-rooted, containing a blood-red juice; leaf palmately 5- to 9-lobed, at first 2 to 3 inches wide and raised on its petiole to about the height of the blossom, later 6 to 12 inches long and raised to a height of 12 to 14 inches; flowers white, waxy, 1 to 1½ inches wide, solitary on a stalk about 6 inches tall; fruit an oblong, many-seeded capsule, 1 inch long.

The rootstock is collected in the fall. Frequent, locally common, in rich woods throughout the state.

Contains a resinous acid and several toxic alkaloids, among the latter sanguinarine. Used as a stimulating expectorant, sternutatory, and emetic.



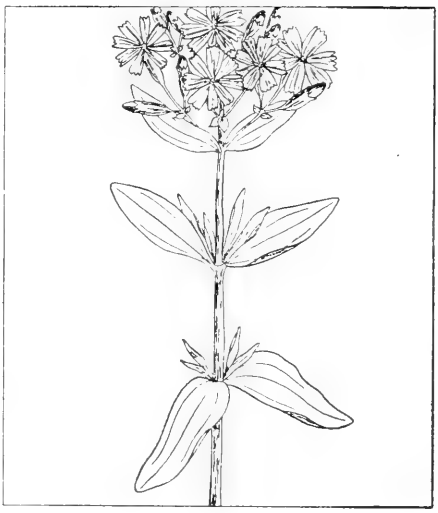
SANICULA MARILANDICA L.

Sanicle, black snakeroot. ***Umbelliferae.***—An erect, usually unbranched, smooth herb 2 to 3 feet tall, perennial; stems rather stout, round, grooved; leaves bluish green, alternate, digitately compound, the lowest long-petioled; leaflets 5 to 7 in number, 2 to 6 inches long, obovate, irregularly and sharply dentate; flowers greenish- or yellowish-white, small, numerous in small clusters at the ends of the branches of few-rayed umbels; fruit oval, small, covered with stout, hooked bristles.

The root collected. Infrequent in oak woods from Jackson and Johnson counties northward.

Medicinally active constituents unknown. Used as an astringent, anodyne, and nervine.

[*Sanicula canadensis* L., with 3- to 5-fingered leaves and globose fruit, is much more common than the above species and occurs in woods throughout the state. Its roots are collected.]

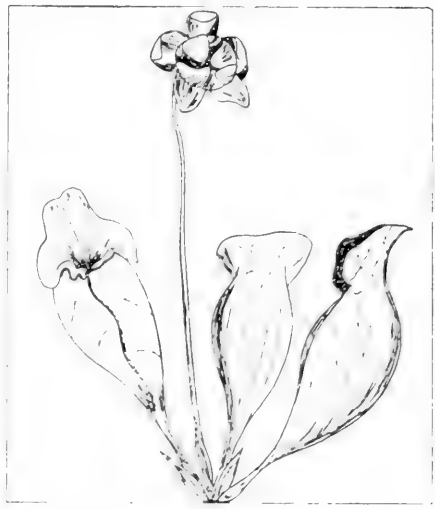


SAPONARIA OFFICINALIS L.

Bouncing Bet, soapwort, fuller's herb, old maid's pink. ***Caryophyllaceae.***—An erect, unbranched, smooth herb 1 to 2 feet tall, perennial; rootstock stout, short; stem stout, jointed; leaves ovate-lanceolate, pointed, opposite, sessile, 2 to 3 inches long, entire, 3-ribbed; flowers pink, rose, or white, trumpet-shaped, 1 inch wide, in dense, terminal, many-bracted corymbs; fruit an oblong, many-seeded capsule.

The rootstock collected. Frequent to common, especially as a weed along transportation routes and in waste places, throughout the state.

Contains mucilage and a saponin. Used as an alterative.



SARRACENIA PURPUREA L. Pitcher-plant, side-saddle flower. ***Sarraceniaceae.***—A low, stemless, marsh-inhabiting herb, perennial; with leaves modified to resemble a pitcher; rootstock (rhizome) short, fibrous-rooted; flowers deep purple, nearly globose, 2 inches wide, solitary, and nodding at the end of a leafless stalk 1 to 2 feet tall.

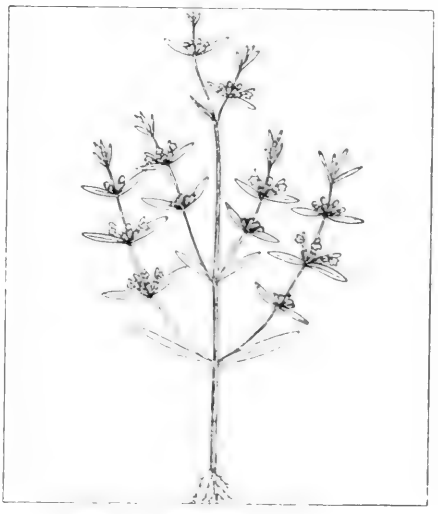
The rhizome and roots collected. Infrequent to rare in the cold bogs and tamarack swamps of Cook, Lake, and McHenry counties.

Contains the bitter alkaloid sarracenine. Used as a bitter tonic and stomachic.

SASSAFRAS VARIIFOLIUM (Salisb.) Ktze. Sassafras, ague tree, saxifrax, smelling stick. ***Lauraceae. U. S. P. XI, p. 268.***—A tall shrub or low tree with bright green branches, aromatic when crushed; leaves dark green, leathery, usually lobed at the tip and mitten- or double mitten-shaped, wedge-shaped at the base, petioled, alternate, 3-ribbed; flowers yellowish-green, small, in racemes just below the leaves; fruit a dark blue, 1-seeded drupe held in the bright red, thickened calyx.

The bark of the root and trunk collected in spring or fall, also the pith of young branches. Common to abundant as a weed tree in woods, abandoned fields, and waste places southward from the Rock River.

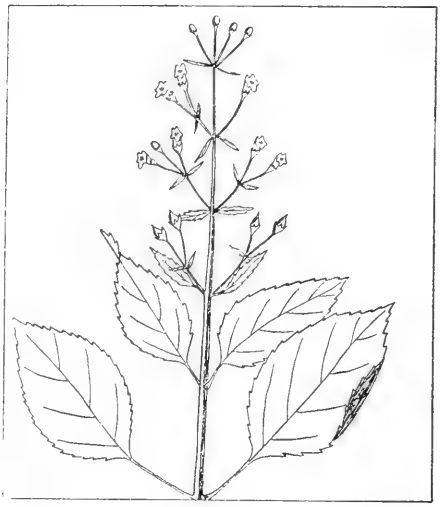
The root bark yields an aromatic volatile oil (oil of sassafras), the pith a mucilage. The oil is used as an aromatic stimulant and flavoring agent, the mucilage as a demulcent.



SATUREJA HORTENSIS L. Summer savory. ***Labiatae.***

The herb collected. Formerly grown extensively in gardens; not known to have escaped and become established in the state.

Contains a volatile, aromatic oil. Used as an aromatic flavoring.

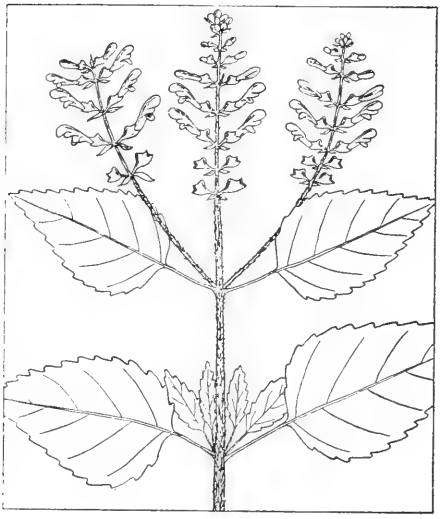


SCROPHULARIA MARILANDICA

L. Carpenter's square, figwort, heal-all, pilewort. ***Scrophulariaceae.***—An erect, widely branched, glandular-pubescent herb 3 to 10 feet high, perennial; stems smooth below, glandular-hairy above, 4-angled, and grooved; leaves ovate, acuminate, 3 to 12 inches long, petioled, opposite, thin, sharply serrate, finely hairy beneath; flowers greenish-purple, about ¼ inch long, 2-lipped, nearly globose, numerous in open panicles; fruit a globose, many-seeded capsule.

Leaves, the herb, and the root collected. Frequent, locally common, in open woods throughout the state.

Contains the principle scrophularin. Supposed, formerly, to be effective in scrofula.



SCUTELLARIA CANESCENS L.

Western skullcap, downy skullcap. ***Labiatae.***—An upright, little-branched, white-downy herb 2 to 4 feet tall, perennial; leaves oval, 3 to 4 inches long, acute, crenate-toothed, petioled, opposite; flowers blue to violet, about ¾ inch long, downy, 2-lipped, in several- or many-flowered axillary and terminal panicles.

The herb, also leaves and tops, collected. Infrequent to rare in woods and thickets, Menard and Vermilion counties southward.

For contents and uses, see *Scutellaria lateriflora.*

SCUTELLARIA LATERIFLORA

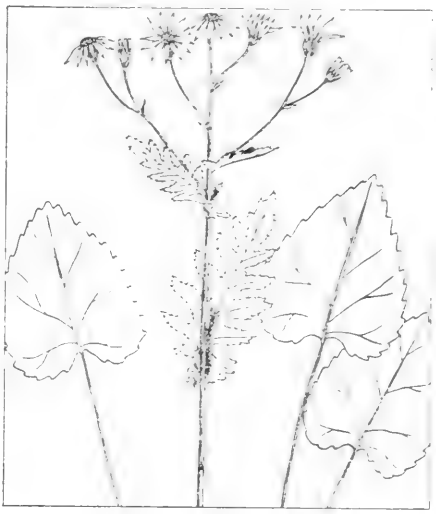
L. Blue pimpernel, mad-dog skullcap, madweed, mad dog, hoodwort. ***Labiatae.***—An erect or ascending, widely branched, nearly smooth herb 4 to 30 inches tall, perennial; stem slender, 4-sided, finely hairy above; leaves thin, ovate, pointed, 1 to 3 inches long, coarsely serrate, slender-petioled, opposite; flowers blue, ¼ to ½ inch long, equally 2-lipped, in axillary, one-sided racemes.

The herb (leaves and tops) collected. Frequent in wet soil by streams, lakes, ditches, and swamps throughout the state.

Contains a bitter principle, the glucoside scutellarin. Used as a tonic, nervine, and antispasmodic.

SEMPERVIVUM TECTORUM L. Houseleek, hen-and-chickens, healing blade, Jupiter's beard. *Crassulaceae.*

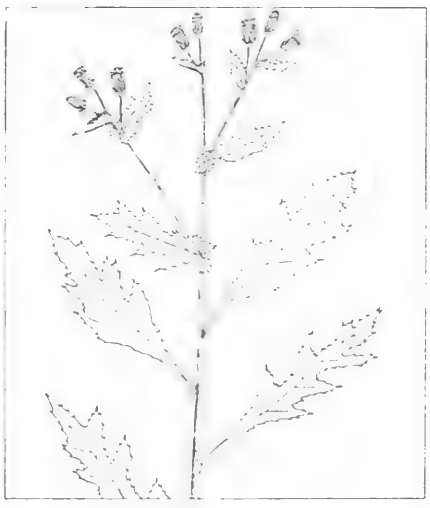
Frequently grown in gardens; not known to have escaped and become established in the state. Entire plant taken.



SENECIO AUREUS L. Life root, golden groundsel, swamp squaw-weed, golden ragwort. *Compositae.*—An erect, unbranched, often tufted, smooth herb 1 to 2½ feet high, perennial; rootstock slender, strong-scented; stems slender; basal leaves oval to kidney-shaped, obtuse, cordate, 1 to 6 inches long, on long, slender petioles, often purplish beneath, crenate; stem leaves lanceolate, deeply cut into narrow lobes; uppermost leaves small, sessile, eared, clasping; flower heads golden yellow, nearly 1 inch wide, 8- to 12-rayed, in an open, terminal corymb.

The plant, including the rootstock and roots but not the flowers, collected. Frequent in wet soil about marshes, small and large bodies of water, and streams throughout the state.

Contains a volatile oil. Used as a diaphoretic, diuretic, tonic, and emmenagogue.



SENECIO VULGARIS L. Common groundsel, grinsel, chicken weed, simson, birdseed. *Compositae.*—An ascending or erect, much-branched, finely hairy herb 6 to 15 inches high, annual; stem hollow; leaves spatulate to oblong, pinnately deeply lobed, dentate, 2 to 6 inches long, the lowest petioled, the upper sessile and clasping, alternate; flower heads yellow, rayless, about ¼ inch wide, some of their bracts beak-tipped.

The entire plant collected. Introduced and probably established locally in various parts of the state.

Contains a volatile oil and a mixture of alkaloids. For uses, see *Senecio aureus.*

SILPHIUM LACINIATUM L. Compass plant, rosin-weed, turpentine weed, polar plant, pilot weed. ***Compositae.***— An erect, coarse, resinous, rough herb 6 to 12 feet tall, annual; with its pinnately divided leaves turned on edge and pointing north-south; stems coarse, hispid, little branched; leaves deeply divided into narrow, widely separated, cut lobes, alternate, the basal 1 foot or more long; flower heads yellow, 2 to 5 inches wide, several to many toward the top of the plant.

Frequent along railroads and wherever else original prairie land remains undisturbed. Leaves and flower heads collected.

[*Silphium perfoliatum* L., Indian cup plant, is collected for its gum and its root. The gum is said to have styptic and antispasmodic properties, while the root is used as a stimulant, diuretic, and diaphoretic.]

SMILAX BONA-NOX L. Green brier, American china root, false china root. ***Liliaceae.***—A long, prickle-armed, woody vine climbing by tendrils; underground stem long, with many spiny knots as large as an egg, from which aboveground stems arise; stem crooked, roundish but with one prominent angle, with usually 3 to 8 spines per internode; leaves ovate but variable and some at least so constricted as to have 2 large, rounded basal lobes, parallel-veined, alternate, 2 to 8 inches long, petioled; flowers greenish-yellow, small, in stalked, axillary umbels; fruit a black, glaucous, red-seeded, small berry.

The root (underground stem) collected. Infrequent or rare in dry woodlands in the Ozark region and southward.

Contains the glucosides phytosterolin and sarsasaponin. Used as a substitute for true sarsaparilla, as an alterative and diuretic.

SOLANUM CAROLINENSE L. Horse nettle, bull nettle, sand brier, tread-softly, apple of Sodom. ***Solanaceae.***—An ascending to erect, branched, spiny, hairy herb up to 4 feet tall, perennial; rootstock deep, spreading; stem and branches set with stout, yellowish spines; leaves ovate, irregularly wavy-margined or lobed, 2 to 6 inches long, alternate, petioled, spiny beneath on the large veins and on the petiole; flowers violet to white, wheel-shaped, about 1 inch wide; fruit a yellow to orange, globose berry ½ inch or more in diameter, containing a juicy pulp and many small seeds.

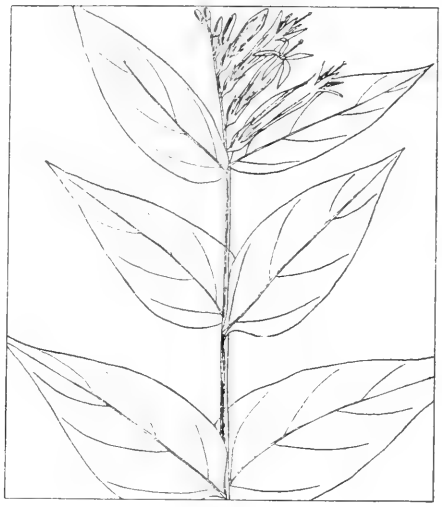
The berries, when ripe, and the rootstock collected. Frequent in waste places, fields, orchards, and gardens throughout the state.

Contains the alkaloids solanine, solaneine, and solanidine. Used as a sedative and antispasmodic.

SOLANUM DULCAMARA L. Bittersweet, bitter nightshade, fever twig, scarlet berry. ***Solanaceae.***—A long, climbing and twining, half-woody, nearly smooth vine, perennial; stems 2 to 8 feet long, branching; leaves ovate, pointed, 2 to 4 inches long, petioled, alternate, some entire but most deeply lobed at the base so as to have 2 small, lateral, leaflike divisions below the large, terminal part; flowers blue, purplish, or white, about ½ inch wide, wheel-shaped; fruit a red, globose to oval, juicy, many-seeded berry.

The young branches are collected from plants 1 or 2 years old after the leaves have fallen, not from older plants. Infrequent to frequent in the northern third of the state in low, wet soils.

Contains the alkaloid solanine, the saponin dulcamarin, and an atropine-like alkaloid. Acts as a sedative and hypnotic; used chiefly in muscular rheumatism and chronic bronchial and pulmonary affections, also as a nauseant.

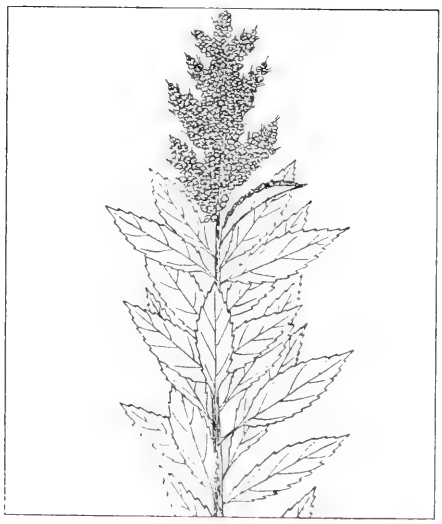


SPIGELIA MARILANDICA L. Indian pink, pink-root, worm-grass, American worm root, Carolina pink, star bloom. ***Loganiaceae.***—An erect, unbranched, smooth herb ½ to 2 feet high, perennial; rootstock (rhizome) small, short, dark, rough, fibrous-rooted, pleasantly aromatic; stems usually several, 4-angled; leaves opposite, sessile, ovate, acuminate; flowers scarlet or crimson, yellow within, funnel-shaped, 1 to 2 inches long, in solitary (sometimes 2 or 3), terminal, 1-sided, stalked spikes; fruit a double, few-seeded capsule, each part globular and small.

The rhizome and roots collected after the plant has flowered. Locally abundant but scattered in woods through the Ozark region of Illinois and south to the Ohio River.

Contains a volatile oil, resin, tannin, the alkaloid spigeline, and a bitter principle. Used as a vermifuge.

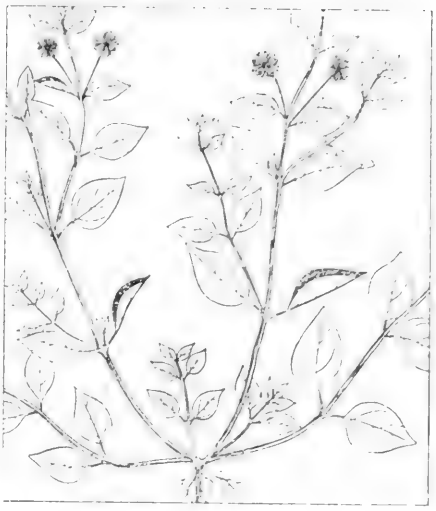
[*Ruellia ciliosa* Pursh, Tennessee pink-root, is often confused with true pink-root by collectors. Care should be taken to avoid collecting Tennessee pink-root, as buyers demand true pink-root.]



SPIRAEA TOMENTOSA L. Hardhack, woolly meadow-sweet, steeple bush, silverweed. ***Rosaceae.***—An erect, unbranched, white-hairy shrub up to 6 feet high; stems stiff, woolly or hairy, leafy; leaves oblanceolate to oval, 1 to 2 inches long, sharply serrate, crowded, alternate, short-petioled, green above, white-woolly beneath; flowers white or pink, small, very numerous in large, dense, terminal panicles.

Bark of stem and root, also the leaves, collected. Infrequent, or locally common or abundant, in sand barrens and sandy woods in the northeastern quarter of the state.

Contains tannic and gallic acids. Used as an internal and topical astringent.



STELLARIA MEDIA (L.) Cyrill. **Chickweed, tongue grass, satin flower, white bird's-eye.** *Caryophyllaceae.*—A weak, creeping or ascending, much-branched herb 4 to 16 inches high, annual; stems slender, rooting at the nodes, with a line of hairs along one side; leaves ovate, acute, one-sixth to 1½ inches long, entire, opposite, the lower petioled, the uppermost sessile; flowers white, small, with sepals longer than the 2-parted petals, on slender, axillary stalks and in terminal, leafy cymes; fruit a many-seeded, small capsule.

The herb collected. Frequent as a weed in gardens, fields, and lawns throughout the state.

SYMPHYTUM OFFICINALE L. **Comfrey, healing herb, bruisewort, slippery root, backwort.** *Boraginaceae.*—An erect, coarse, hairy, branched herb 2 to 3 feet high, perennial; root thick, mucilaginous, coated with thin, black bark; stem coarse, winged below the upper leaves; leaves ovate, up to 10 inches long, entire, alternate, the lowest wing-petioled, the upper sessile and decurrent; flowers yellowish white, tubular, about ¼ to ½ inch long, in nodding racemes from the upper leaf axils.

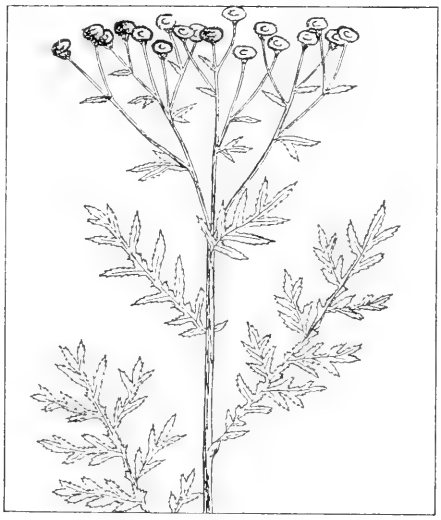
The root is collected in the fall or early spring. Grown in gardens by early settlers; occasionally escaped and rarely persisting in scattered localities, especially in southern counties.

Contains mucilage. Used as a demulcent.

SYMPLOCARPUS FOETIDUS (L.) Nutt. Skunk cabbage, skunk weed, polecat weed, fetid hellebore. ***Araceae.*** —A stemless, offensive-smelling plant 1 to 3 feet tall, perennial; rootstock thick; straight, descending, with whorls of fleshy fibers; leaves 1 to 3 feet long, up to 1 foot wide, ovate, petioled, veiny; flowers minute, spiked inside a purple-brown to greenish, leaflike spathe, appearing before the leaves.

The rhizome with root collected in spring after flowering or after the seeds have ripened. Frequent to abundant in wet, deeply shaded, marshy, and springy places throughout the northern half of the state.

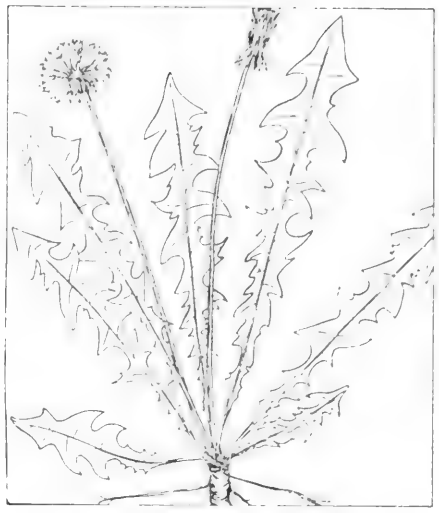
Contains an acrid principle, a volatile oil, and a resin. Used as an antispasmodic.



TANACETUM VULGARE L. Tansy, bitter buttons, parsley fern, scented fern, ginger plant. ***Compositae.*** —An erect, upwardly branching, aromatic, usually smooth herb 1½ to 3 feet high, perennial; stem stout, reddish; leaves pinnately divided into about 7 pairs of narrow, widely spaced, toothed, or cut segments, fernlike, basal one up to 1 foot long, stem leaves about 6 inches long, alternate; flower heads yellow, button-like, with inconspicuous ray flowers, several in clusters at the ends of usually branched stalks arising from the upper leaf axils and terminal.

The leaves and flowering tops collected. Distributed widely through the state but localized near old settlements, where it has escaped from old gardens.

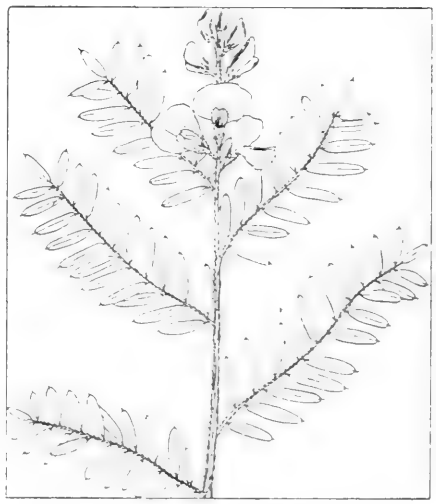
Contains the bitter principle tanacetin and a toxic volatile oil (oil of tansy) yielding thujone. Used as a stimulant, abortifacient, and anthelmintic.



TARAXACUM OFFICINALE Weber. **Dandelion, fortune teller, horse gowan, cankerwort, blowball.** *Compositae.*—A low, stemless, milky-juicy herb up to 1 foot high, perennial; taproot fleshy, often a foot or more long; leaves numerous in a spreading cluster, oblong, pinnately lobed, sinuate-toothed, pubescent when young, up to 1 foot long; flower heads yellow, 1 to 2 inches broad, solitary at the ends of hollow flower stalks; fruit a small achene with a long, slender beak terminated by a quantity of spreading floss.

The root is collected in late summer and fall, also the leaves. Common to abundant throughout the state as a weed in all waste places, fields, lawns, and gardens.

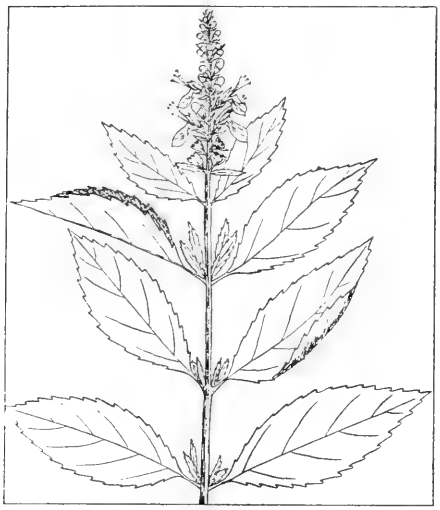
Contains inulin, resin, the bitter principle taraxacin, and taraxacerin. Used as a tonic, simple bitter, diuretic, and aperient, especially in dyspepsia arising from a torpid liver.



TEPHROSIA VIRGINIANA (L.) **Pers. Devil's shoestring, goat's rue, catgut, rabbit pea.** *Leguminosae.*—An ascending to erect, unbranched, silky, white-hairy herb 1 to 2 feet high, perennial; root fibrous, long, tough; stems slender, usually numerous, leafy above; leaves pinnately compound, alternate; leaflets 7 to 25 in number, ¾ to 1 inch long, the terminal obovate, the lateral oblong; flowers yellowish-purple, sweet-pea-like, ½ to ¾ inch long, numerous in a dense, terminal raceme.

The roots collected. Infrequent in dry, rocky, or sandy woods in the northern, western, and southern parts of the state, rare or absent in the east-central part.

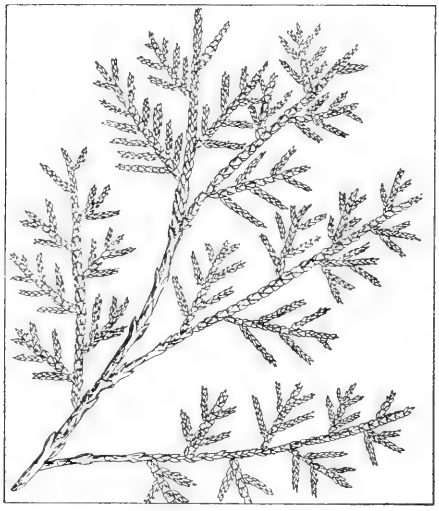
Medicinally effective constituents unknown. Said to be useful as a vermifuge; used also as an insecticide.



TEUCRIUM CANADENSE L. Germander. *Labiatae.*—An erect, usually unbranched, hoary herb 1 to 3 feet high, perennial; stem slender, 4-sided; leaves lanceolate, acute, 2 to 5 inches long, irregularly dentate, short-petioled, opposite; flowers purple to white, ½ to ¾ inch long, apparently 1-lipped, in few-flowered whorls crowded in a dense, terminal spike; spike 6 to 12 inches long in fruit.

The herb collected. Infrequent but occurring throughout the state in moist soil, along streams, and in open woods; also as a weed along roads and in fields and pastures.

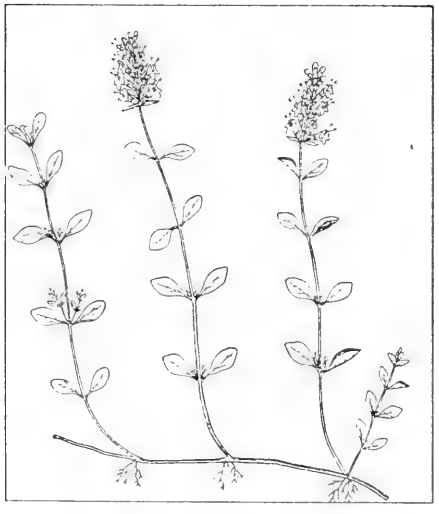
Contains a volatile oil, tannin, and a bitter principle. Used as an aromatic, stimulant, diaphoretic, diuretic, and emmenagogue.



THUJA OCCIDENTALIS L. Arbor vitae, white cedar, yellow cedar, feather-leaf cedar. *Pinaceae.*—A small to moderate, densely branched, evergreen tree; bark of the trunk red-tinted, shallowly fissured into narrow ridges; trunk usually divided into 2 or 3 stout, upright, secondary stems; branches and branchlets slender; the twigs covered with small, flattened, pointed, overlapping, 4-ranked, scale-like leaves; frondlike; fruit a small, woody cone.

The leaves and branchlets (leafy twigs) collected. Native but rare in the northeastern quarter of the state; extensively used as a decorative tree in all parts of the state.

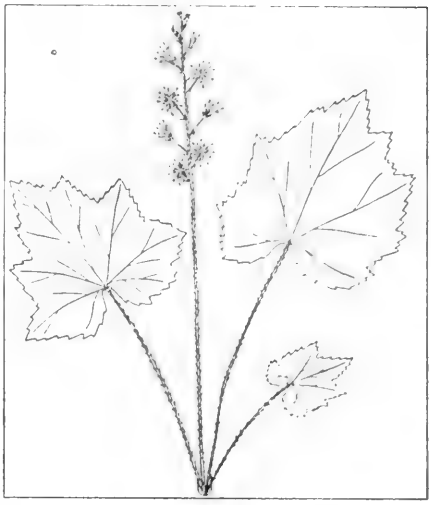
Contains a volatile oil and the crystalline principle thujone. Acts as a stimulant and is used also as a diuretic and carminative; the volatile oil is an emmenagogue.



THYMUS SERPYLLUM L. Mother-of-thyme, creeping thyme. *Labiatae.*

The herb collected. Formerly planted in herb and flower gardens, occasionally escaped and persisting as colonies.

Contains a volatile oil (oil of thyme) which yields thymol. Used as an antispasmodic in whooping cough; the oil is used as a carminative, antiseptic, and rubefacient.



TIARELLA CORDIFOLIA L. Coolwort, false miterwort, foam flower. ***Saxifragaceae.***—A stemless, erect, pubescent herb 6 to 12 inches high, perennial; leaves broad, 3- to 7-lobed, cordate, crenate or dentate, 2 to 4 inches long, on slender, long petioles from the rootstock or summer runners; flowers white, about ¼ inch wide, with 10 stamens, in an open raceme at the end of the leafless flower stalk; fruit a small, membranous, reflexed capsule.

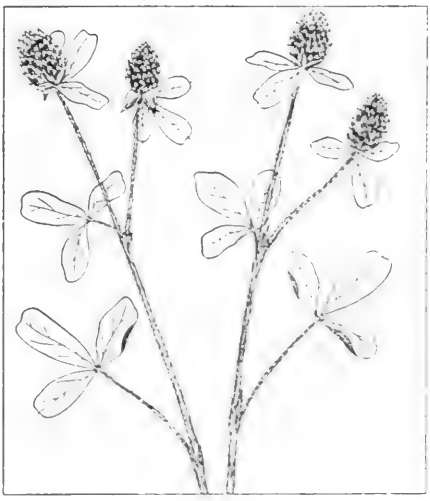
Exceedingly rare in the extreme northeastern corner of the state.

Used as a diuretic.

TILIA AMERICANA L. Linden, basswood, whitewood, American linden. ***Tiliaceae.***—A moderately large, broadly crowned tree 60 feet or more tall; bark of the trunk brown, deeply furrowed, thick; leaves broadly oval, sharp-pointed, asymmetrically cordate, sharply serrate, 5 to 6 inches long, petioled, alternate; flowers yellowish, small, fragrant, in clusters at the ends of a branched stalk extending from the middle of an oblong, leaflike axillary bract; fruit globular, woody, about ½ inch in diameter, densely hairy.

The flowers, and flowers with leaves, collected and dried in shade; also the bark. Infrequent to frequent on wooded slopes and stream banks and in ravines throughout the state; May and early June.

The bark contains mucilage. The flowers and leaves used as a stimulant or sedative, the bark as an emollient.

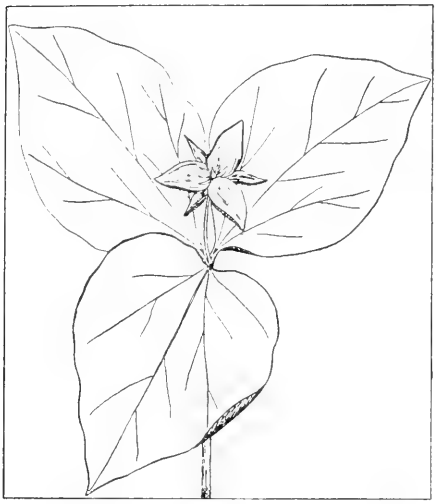


TRIFOLIUM PRATENSE L. Red clover. ***Leguminosae.***

The blossom heads collected when in full flower. Grown in large and small acreages; escaped and, presumably, established throughout the state.

Contains a fragrant, volatile oil, salicylic acid, and several glucosides. Used as an alterative and sedative.

[*Trifolium repens* L., white clover, blossom heads are collected. Clover blossoms must contain no leaves or stems when offered for sale.]

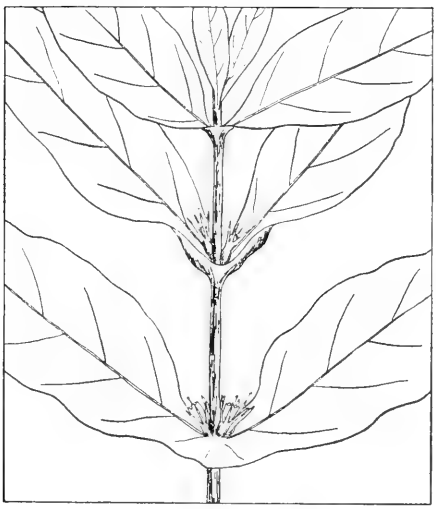


TRILLIUM ERECTUM L. Bethroot, purple trillium, red trillium, birthroot, purple wake robin, Indian balm, nosebleed. ***Liliaceae.***—A single-stemmed, 3-leaved, erect, smooth herb 8 to 18 inches high, perennial; rootstock short, thick; leaves in a whorl at the top of the stem, broadly ovate, acuminate, 3 to 7 inches long; flower dark purple, ill-scented, 1 to 3 inches wide, 3-parted, terminal on a peduncle up to 4 inches long which rises, with the leaves, from the top of the stem; fruit a red, many-seeded berry.

The root is collected in late summer. Frequent to common in woods throughout the state.

Contains the acrid saponin trillin and tannin. Used as an astringent, tonic, alterative, and emetic.

[Other species of *Trillium* may be collected also.]



TRIOSTEUM PERFOLIATUM L. Tinker's weed, wild coffee, feverroot, horse gentian. ***Caprifoliaceae.*** — An erect, coarse, unbranched, pubescent herb 2 to 4 feet high, perennial; root thick, fleshy; stem stout; leaves oval, 4 to 9 inches long, opposite, grown together around the stem, entire; flowers purplish-brown, tubular, ½ to ¾ inch long, sessile, in small cluster in the leaf axils; fruit an orange-yellow, pubescent drupe up to ½ inch long.

The root collected. Infrequent to frequent in dry oak woods throughout the state.

Medicinally effective constituents unknown; has a disagreeable odor and a bitter, nauseous taste. Used as a cathartic and emetic.

ULMUS FULVA Michx. Slippery elm, red elm, sweet elm, moose elm. ***Urticaceae.***—A moderate, open-crowned tree 60 to 70 feet tall; bark of the trunk red-tinted, dark brown, shallowly fissured but rough; inner bark mucilaginous; twigs rough-hairy; leaves oblong-ovate, long-pointed, unequilateral at the base, doubly serrate, 4 to 8 inches long, alternate, rough above, softly downy beneath; petioles short, stout, hairy; fruit round, flat, winged, about ½ inch wide.

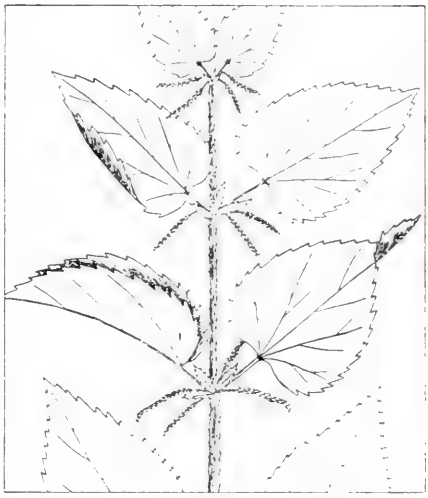
The inner, white bark of the trunk collected. Frequent in all the wooded and forested regions of the state.

Contains a high percentage of mucilage. Used as a demulcent.

URTICA DIOICA L. Nettle, stinging nettle, great nettle. ***Urticaceae.***—An erect, little-branched herb 2 to 4 feet tall, abundantly armed with stinging hairs, perennial; stem stout; leaves ovate, acute, cordate, coarsely serrate, petioled, opposite, 3- to 5-nerved; flowers greenish, very small, numerous in large, compound, axillary cymes.

The leaves, tops, and seed collected. Introduced and very rare, if it occurs at all, in the state.

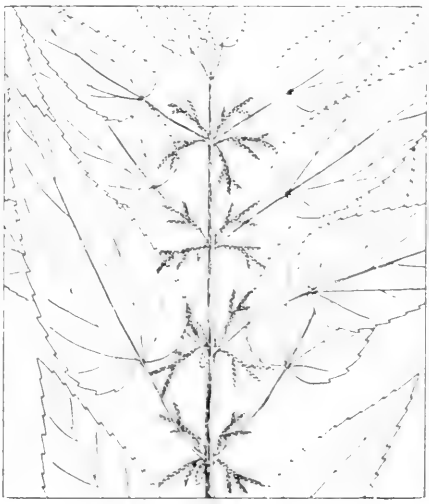
Contains formic acid, an enzyme, a glucoside, and tannin. A powerful diuretic; used as a counterirritant, an antihemorrhagic, and in catharrhal affections.

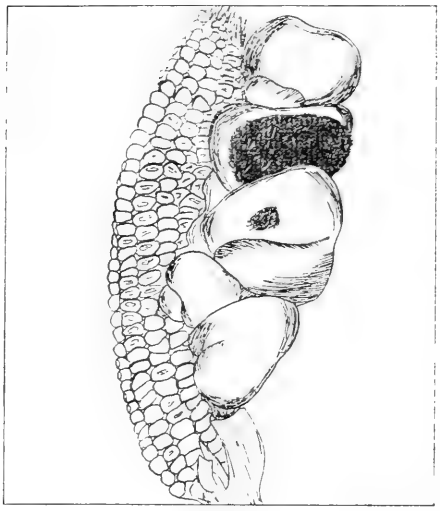


URTICA GRACILIS Ait. Nettle, slender nettle, tall nettle. ***Urticaceae.***—An erect, little-branched, stinging herb 2 to 7 feet high, perennial; stems slender, sparingly set with stinging hairs; leaves lanceolate, long-pointed, sharply serrate, 3 to 6 inches long, 3- to 5-nerved, petioled, opposite; flowers green, very small, crowded on branched, axillary stalks as long as the petioles.

Infrequent to rare on alluvial land along the large streams of the state.

Collected and used as the species above.

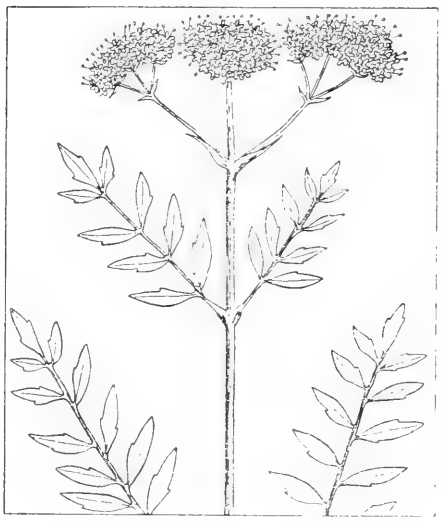




USTILAGO ZEAE. **Corn smut.** ***Ustilaginaceae.***—A fungus parasite on Indian corn (*Zea mays* L.) appearing as large masses or galls of black, sooty powder on the ears, stem nodes, and tassels, and small to large pustules on all other parts of the plant.

The large galls from the ears, stems, and tassels are collected. Abundant in cornfields throughout the state.

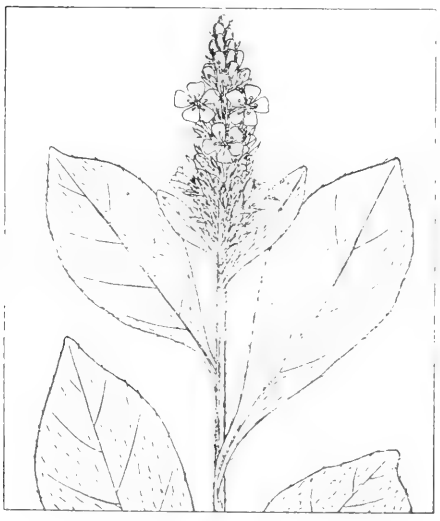
Contains resins, mazenic acid, and the alkaloid ustalagine. Used as an ecbolic and antihemorrhagic.



VALERIANA OFFICINALIS L. **Heliotrope, common valerian, garden heliotrope.** ***Valerianaceae.*** *U. S. P. XI, pp. 408, 428.*

Rhizomes and roots collected. Grown as an ornamental herb in gardens throughout the state.

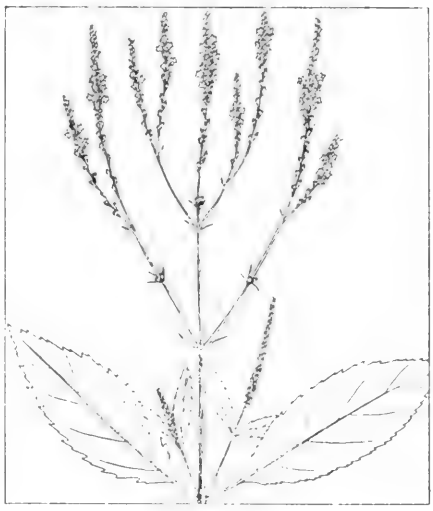
Contains a volatile oil yielding isovaleric acid, an alkaloid, a glucoside, and a resin. Used as a sedative, antispasmodic, and nervine.



VERBASCUM THAPSUS L. **Mullein, great mullein, velvet dock, flannel leaf, cow's lungwort.** ***Scrophulariaceae.***—An erect, coarse, stiff, unbranched, felty-hairy herb up to 7 feet tall, biennial; stem thick, winged below the leaves; leaves forming a ground rosette the first year, on stems the second year, lanceolate or oblong, acute, winged along the petiole, up to 6 or 10 inches long, alternate, entire or somewhat toothed; flowers yellow, ¾ to 1 inch wide, densely crowded in large, clublike, terminal spikes; fruit a many-seeded capsule about ¼ inch long.

The leaves and, when fully open, the flowers collected. Frequent to common, as a weed, in all open, waste places throughout the state.

Contains mucilage; the flowers yield also a yellow volatile oil. Used as a demulcent; the oil as an embrocation.



VERBENA HASTATA L. Blue vervain, verbain, wild hyssop, simpler's joy, ironweed. ***Verbenaceae.***—An erect, upwardly branched, pubescent herb 2 to 6 feet high, perennial; stem angled and grooved, rough; leaves lanceolate, long-pointed, short-petioled, opposite, doubly serrate, strongly veined, gray-pubescent beneath, 3 to 6 inches long; flowers blue, small, densely crowded in numerous slender spikes 2 to 6 inches long.

The herb collected. Frequent to common in pastures and open, moist soil.

Contains the glucoside verbenalin, a bitter principle, and tannin. Used as a tonic, expectorant, and emetic.

VERONICA ARVENSIS L. Corn speedwell, rock speedwell, wall speedwell. ***Scrophulariaceae.***—An erect, often diffusely branched, hairy herb 2 to 16 inches high, annual; leaves ovate, obtuse, ¼ to ½ inch long, opposite, the lowest petioled, crenate; flowers blue, small, solitary on short pedicels in the leaf axils, 4-parted; fruit a heart-shaped capsule.

The herb collected. Frequent to common in waste places, pastures, and fields and about dwellings throughout the state; April to early June.

Contains a bitter principle of unknown composition. Said to be a diaphoretic, diuretic, and expectorant.

VERONICA OFFICINALIS L. Speedwell, ground heal, gypsy weed, Paul's betony. ***Scrophulariaceae.***—A prostrate, creeping, erectly branched, pubescent herb, perennial; branches stout, 3 to 10 inches high; leaves obovate, obtuse, ½ to 2 inches long, opposite, short-petioled, serrate; flowers pale blue, about ¼ inch wide, 4-parted, crowded in dense, axillary, stalked spikes; fruit a minute, somewhat heart-shaped, many-seeded capsule.

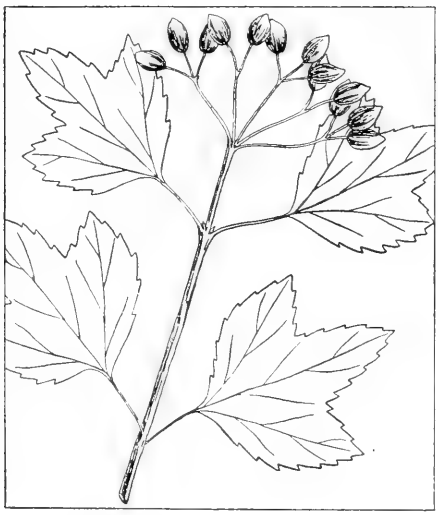
The herb collected. Introduced; infrequent to rare in abandoned fields, pastures, and open woods throughout the state.

Contains a bitter principle that is possibly leptandrin. Used as a diaphoretic, diuretic, and expectorant.

VERONICA VIRGINICA L. Black root, Culver's-root, Culver's physic, Bowman's root, tall speedwell. ***Scrophulariaceae.***—An erect, unbranched, mostly smooth herb 2 to 7 feet high, perennial; rhizome (rootstock) thick, bent, branched, fibrous-rooted; stem slender; leaves narrowly lanceolate, acuminate, 3 to 6 inches long, in whorls of 3 to 9 at each node, sharply serrate, short-petioled; flowers white to bluish, very small but very numerous and crowded in, usually, several dense spikes 3 to 9 inches long at the top of the plant.

The rhizomes and roots collected in the fall of the second year. Frequent, infrequent, or rare but in all parts of the state; for the most part on prairie soils but also in many other situations.

Contains the intensely bitter and nauseous substance leptandrin, a volatile oil, and tannin. Used as a laxative and cholagogue and emetic.



VIBURNUM OPULUS L., var. AMERICANUM (Mill.) Ait. American cranberry bush, cramp bark tree, high-bush cranberry, wild guelder rose, red elder, squaw bush. ***Caprifoliaceae.***—An erect, moderately branched shrub 8 to 10 feet tall, with ascending, gray, smooth branches; leaves 3-lobed and maple-like, 2 to 4 inches long, opposite, coarsely and irregularly dentate; flowers snowy white, some as much as 1 inch wide, numerous in terminal and axillary, stalked clusters; fruit a red, translucent, round, sour drupe.

The bark collected in the autumn. Rare in low woods in the northern third of the state.

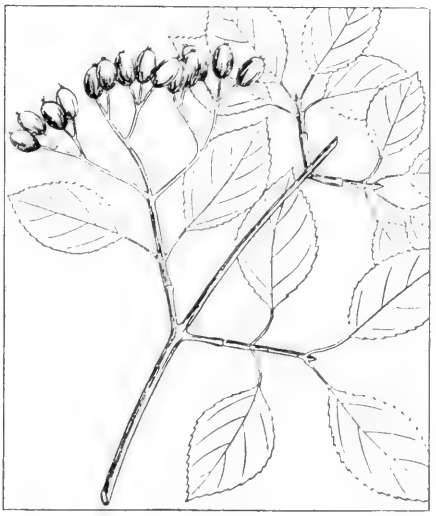
Contains principles similar to those of the following species. Used as a uterine sedative and hemostatic.

VIBURNUM PRUNIFOLIUM L. Black haw, shonny, sloe, sloe-leaved viburnum, stagbush. *Caprifoliaceae.*—An erect, spreading-branched, smooth shrub or small tree 10 to 20 feet tall; leaves bright green, broadly ovate, obtuse to acute, 1 to 3 inches long, finely serrate, opposite, petioled; flowers white, small, numerous in short-stalked, or sessile, branched clusters; fruit a blue-black, glaucous, oval drupe about ½ inch long.

The bark of the root and stem collected in the autumn. Frequent in moist woods along streams throughout the state.

Contains two resins, one brown and very bitter, the other greenish-yellow, the bitter principle viburnin, valerianic acid, and tannin. Used as an antispasmodic, nervine, astringent, tonic, and uterine sedative.

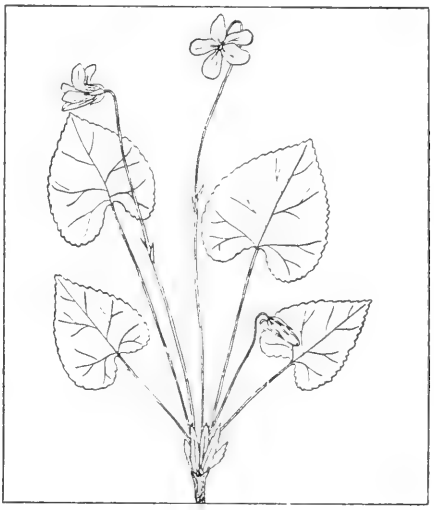
[*Viburnum acerifolium* L., arrow-wood, yields arrow-wood bark; *Viburnum rufidulum* Raf. yields southern black haw bark; *Viburnum cassinoides* L. and *Viburnum Lentago* L. are other Illinois species from which bark may sometimes be collected.]



VIOLA ODORATA L. Violet, sweet violet, garden violet. *Violaceae.*

The flowers are collected. Cultivated in many gardens as a decorative plant.

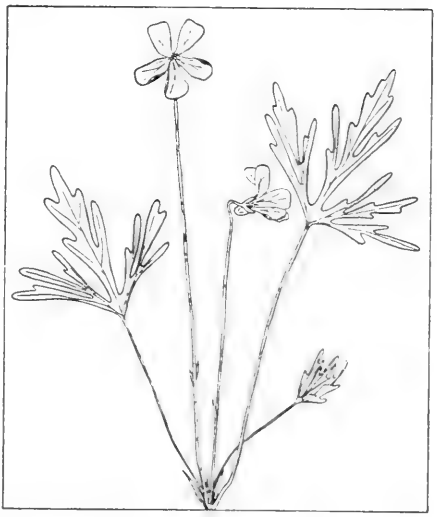
Contains the alkaloid violine. Used as a cathartic, emetic, and expectorant, also in the manufacture of a colored vehicular syrup.

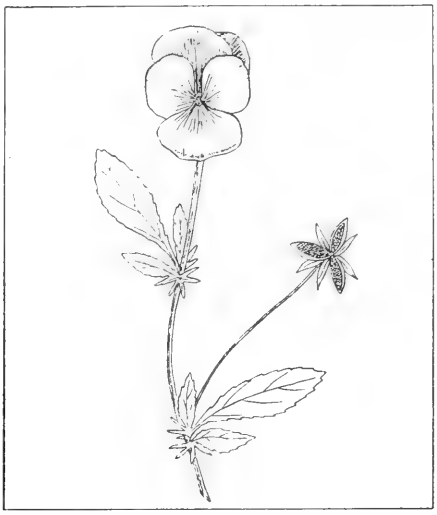


VIOLA PEDATA L. Birdfoot violet, crowfoot violet. *Violaceae.*—An erect, stemless, low, nearly smooth herb, perennial; rootstock (rhizome) short, erect; leaves digitately 3-parted, the parts again deeply 3- to 5-cleft, on slender, erect petioles; flowers dark violet and lilac-purple, with conspicuous orange-tipped stamens, solitary and nodding at the tops of slender, 1-bracted peduncles.

The leaves and rhizome collected. Frequent on gravelly and sandy soils in the northern half of the state; rare in the Ozark region.

Medicinally effective constituents unknown. Used as a cathartic, emetic, and expectorant.

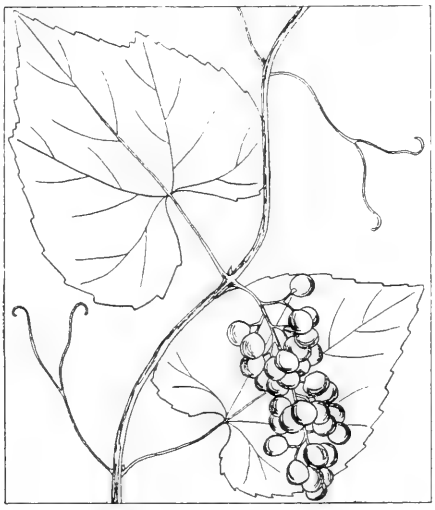




VIOLA TRICOLOR L. Pansy, heart's-ease. *Violaceae.*

The herb (leaves and flowers), and the flowers alone, collected. Grown in gardens throughout the state.

Contains mucilage, probably the alkaloid violine, and (in the flower petals) the glucoside rutin. Used as an emetic, cathartic, and expectorant.



VITIS, cultivated species. Grape. *Vitaceae.*

The fruit collected. Grown in vineyards in some parts of the state and in gardens in all parts.

Yields grape juice, wine, brandy, and raisins. Grape juice is a nutritive and refrigerant; wine and brandy are stimulants; raisins are a nutritive and mild laxative.

ZANTHOXYLUM AMERICANUM Mill. Prickly ash, toothache-tree, yellow wood, pellitory bark. *Rutaceae.*— A moderate, hardly ever large, armed shrub 5 to 10 feet tall; bark slate-gray, pungent, bitter; stems and branches with a pair of spines at the base of each leaf; leaves pinnately compound, 3 to 8 inches long, alternate; leaflets 5 to 11 in number, ovate, 1 to 2½ inches long; flowers greenish-white, small, inconspicuous; fruit a reddish, globose to elliptic, aromatic capsule containing 1 seed.

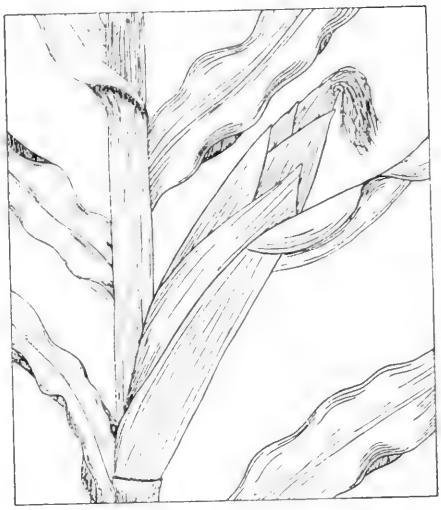
The berries (capsules) collected when ripe, and the bark of the stems. Frequent to common in low woods through the northern half of the state, infrequent southward.

Contains fixed and volatile oils, resin, gum, coloring matter, and the alkaloid berberine. Used as a stimulant and diaphoretic, also as a simple bitter.

ZEA MAYS L. Corn, Indian corn, maize. ***Gramineae.*** *U. S. P. XI, pp. 56, 258.*

The grain and the silk from the ears when brown collected. Grown in large acreages throughout the state.

Yields cornstarch, corn oil, dextrose and glucose, and corn silk. The starch used as a demulcent, the oil as a laxative, the silk as a mild diuretic.



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