

PHARMACOPŒIAL VEGETABLE DRUGS.

ROSA GALLICA

The rose, in some form of its many varieties, is indigenous to the warmer parts of Europe, Asia Minor, the Caucasus, and other countries. Its use in medicine as well as in perfumes dates from the earliest times. The *Rosa gallica* is said to have been introduced into France by the Count of Champagne on his return from the Crusades in 1241. In the study of attar of roses made by the writer on the bottom lands beneath Mt. Olympus in Turkey, the roses planted in rows appeared much like raspberry fields, the roses being of a rather insignificant appearance, but very fragrant. The use of the rose in confection form, in pharmacopœial medicine, once very popular, has, with the exception of its employment in blue mass (*Massa hydrargium*), become nearly obsolete. In the "Arabian Nights" (88), rose water is often referred to, and in Turkish home life it is employed as a refreshing perfume after bathing.

RUBUS

Blackberry, *Rubus villosus*, grows abundantly in most parts of the United States. The roots of the various species as well as varieties or rubus are more or less astringent and have been used in domestic medicine from the days of America's first settlement. The Cherokee Indians (Rafinesque [535]), chewed the root of this plant and swallowed the saliva for a cough, probably its astringency being helpful to the throat membranes. They also used a poultice of it for piles, in which direction its mild astringency seems rationally to adapt it. A syrup of blackberry root has been a great favorite in some sections of the country as a remedy for dysentery. This use of the drug in domestic medication, in which it has always been valued in America, led finally to its employment by the members of the medical profession. The juice of the blackberry fruit, spiced and mixed with whisky, is and has ever been a valued carminative drink in Kentucky and other parts of the Southern United States, and founded the pharmacopœial blackberry cordial.

SABAL

Saw palmetto, *Serenoa serrulata*, *Sabal serrulata*. The berry of the saw palmetto, practically unknown in medicine before 1879, came rapidly into conspicuity, both in pharmacy and in medicine, after that date. It had been observed by the settlers of the South that animals feeding on the matured fruit "grew very sleek and fat," a fact that was ascribed to the therapeutic qualities of the berries, reasoning from which they prepared a decoction of the fruit for domestic medication. In 1877, Dr. Reed, of the Southern United States, in an article entitled "A New Remedy," in the *Medical Brief*, St. Louis (417), stated that several persons in his neighborhood were using a preparation of the berry, giving instances of its use in various directions. This article was reproduced in *New Preparations* (467), July, 1879, and was followed in the same publication by another article from the *Medical*

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Brief, in which Dr. I. J. M. Goss, then of Marietta, Georgia, states that he had been induced to use the remedy and considered it a satisfactory one. After this introduction the drug came repeatedly to the attention of practitioners of medicine. Manufacturing pharmacists gave it especial attention, and at the present time it is one of the most important remedial productions of the South. Thus the experimentation of the people, following its apparent effect on animals, was followed in turn by the investigations of the medical profession, and the remedy was finally introduced to the pages of the Pharmacopœia. In our opinion the volatile oil and its decomposition products are of exceeding interest and will yet be a prolific source of detailed research.

SABINA

Sabina (*Juniperus sabina*) is native to the mountainous portions of Austria, Switzerland, and some parts of France, being also found in the Pyrenees, Italy, the Caucasus, and other countries in regions far above the sea level. It is also found in the northern parts of North America. Sabina was used in veterinary medicine, as mentioned by Marcus Porcius Cato (132), a Roman author, 200 B. C. It was also known to Dioscorides (194) and Pliny (514). The early domestic leech-books, before the Norman Conquest, gave it a place. Charlemagne ordered that it should be cultivated on the imperial farm. Macer Floridus (397), in the tenth century, commended the use of Sabina in wounds and ulcers.

SACCHARUM

The sugar-cane (*Saccharum officinarum*) is cultivated in all tropical countries, such as India, China, Mexico, the West Indies, etc. Its native land is probably India, or the Indo-Chinese countries and islands. As made from the cane, sugar has been known from time immemorial. It is mentioned by such early writers as Theophrastus (633), Herodotus (314a), and others, who knew raw sugar as *honey of canes*, and in the early Christian era sugar became well known under the name *saccharon*. Dioscorides (194), A. D. 77, describes it as obtained from India and Arabia Felix, stating that it resembled salt in brittleness. Pliny (514) mentions it under the name *saccharum*, and an unknown writer, A. D. 54-68, mentions it as an article of import to the ports of the Red Sea opposite Aden (see Burton for description of that country, "First Footprints" (113), etc.), but it is doubtful whether it was brought from the eastern or western parts of India. It is mentioned by Abu Zayd al Hasan (240), A. D. 850, as produced on the Persian Gulf, and A. D. 950 Moses of Chorene states that it was then manufactured in quantities. Sugar was introduced into medicine in the tenth and eleventh centuries by Rhazes (a physician of Bagdad and Persia, who died about A. D. 923), Haly Abbas (295), and others; but it had ever been employed, as it is still employed, in domestic medicine for the purpose of disguising unpleasant materials and for sweetening acrid substances. Burton (113) found crude sugar an

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article of domestic use and preparation (in his journey to Herat) by several tribes of native Africans. Sugar as a remedy in itself has been quite often a therapeutic factor in both domestic and regular medication.

SALVIA

Sage, *Salvia officinalis*, has been used by the herbalists from all time, being likewise employed as a flavor in culinary directions. Pliny (514), Theophrastus (633), and other early writers mention this plant, which is now cultivated in all temperate regions of the world. It is still employed in decoctions as a domestic medicinal drink, and when bruised the fresh herb is applied as a poultice to sprains and swellings. Its empirical use antedates its employment in systematic medicine.

SANGUINARIA

Bloodroot, *Sanguinaria canadensis*, is found throughout the temperate regions of the United States east of the Mississippi River. It was used by the Indians as a dye for coloring their garments and for staining their faces and bodies, in which direction it fulfilled the double object of a coloring material as well as to keep away insects, it being disagreeable to them. The Indians also used it as an acrid emetic and, mixed with other herbs, in the form of an ointment as an application to indolent ulcers, its action being somewhat escharotic. The early settlers employed it in these directions, while its efficacy in coughs and colds established it as a constituent of home-made compounds such as syrups and tinctures. The professional use as well as great reputation of this drug and its alkaloidal constituents (388a) are due to the Eclectic school of medicine, although its qualities had been well established previous to the systematic efforts made by physicians of this school. *Sanguinaria* was mentioned by Barton (43), Cutler (178), Thacher (631), Schöpf (582), Bigelow (69), and other early investigators, whose recorded statements demonstrate the method of its introduction to have been as herein described. In connection with lard, arsenic, and hydrated ferric oxide it constitutes a once popular cancer remedy. It is a constituent of the early Eclectic Compound Tar Plaster (see *Phytolacca*).

SANTALUM RUBRUM

Red sandalwood, red sanders (*Pterocarpus santalinus*), is a small tree native to the southern part of the Indian Peninsula, being found at Canara, Mysore, and the Coromandel Coast. It is also found in the Southern Philippines. The wood is obtained chiefly from plantations in the forests of the Kurnool Hills and adjacent localities neighboring to Madras. The beginning of the use of the wood of this tree for temples and other primitive religious buildings is lost in antiquity. Marco Polo (518) refers to the fact that sandalwood was imported into China, distinguishing this variety by the word *red*. Garcia de Orta (480), of Goa, in the sixteenth century, distinguishes between

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the fragrant sandalwood of Timor and the inodorous red sandalwood. In this connection it should be remembered that *Santalum rubrum*, or red sanders, has none of the qualities of the *Santalum album*, or fragrant sandalwood. And yet it is recorded that all the languages of India call it by the name red-colored sandalwood. In the Middle ages it was used in Europe for coloring purposes, being quoted in England, 1326 and 1399, at three shillings per pound, and it was entered on the accounts of the Monastery of Durham, 1530, along with spices and groceries. It is used in pharmacy as a coloring agent, after the manner in which it was employed in domestic economy of the olden times for the same purpose.

SANTONICA

The "wormseeds" are widely distributed in the northern hemisphere of the Old World, many varieties thereof being familiar to botanists and subject to much discussion. The unopened flowers of the head (*wormseed*) are collected in quantities on the vast plains or steppes in the northern part of Turkestan, the distributing point being the renowned fair of Nishni Novgorod, Russia, where, July 15th to August 27th, the celebrated exchanges of the products occur. Wormseed, however, is found in the Oriental bazaars, being brought for native and domestic use from the sections of country named, or from Afghanistan or Caboul. Dioscorides (194) mentions several species of wormseed, stating that the small seeds were mixed with honey and employed by the people as a remedy for ascarides. Alexander Trallianus (11), in the sixth century, commended this drug as a remedy for intestinal worms. Saladinus (570), 1450, and afterwards several authors of the sixteenth century, as Ruellius (561) and Dodonæus (195), refer to the remedy as a vermifuge for children. Its empirical use in domestic medication is maintained to the present time, and from this source its anthelmintic virtues were learned by the profession.

SARSAPARILLA

The drug sarsaparilla is furnished by the root of a climbing plant of the genus *smilax*, which prevails over the northern part of South America, the whole of Central America, and the west coast of Mexico. Many varieties contribute the drug of commerce. Its qualities were made known in early European annals from the commendation of explorers of the New World. Monardes (447) is authority for the statement that it was introduced to Seville about 1536 from "New Spain," but that a different variety soon followed from Honduras. The "Chronicle of Peru," by Pedro de Cieza de Leon (151), 1553, mentions sarsaparilla as growing in South America, where he observed it between 1533 and 1550. It was recommended as a cure for syphilis and acute rheumatism, the Spaniards calling it "an excellent medicine." In this connection it may be said that the name applied to it was *sarza parilla*, afterward becoming sarsaparilla. Like other remedies introduced in business channels for commercial purposes from the

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wonderful New World, sarsaparilla enjoyed a marvellous reputation, which evidently was not interfered with by the fact that it returned great profits to the dealers. A little work issued in its behalf by Girolamo Cardano (123), of Milan, 1559, advocates it most strongly in the direction of the diseases mentioned. It found its way into pharmaceutical stores, where it made an eventful record as a new remedy from the New World. In domestic medicine from the time of its introduction a decoction has been "authoritatively" considered serviceable as a "blood purifier." It is not necessary to state that in the form of a sweetened decoction syrup of sarsaparilla has through several decades enjoyed continual conspicuity in the pharmacopeia.

SASSAFRAS

Sassafras is indigenous to the Western Hemisphere, occurring in Florida, Virginia, and as far north as Canada. It is found as far west as Kansas, but is there very scarce. Its occurrence in Brazil is recorded by Piso, 1658 (511). Sassafras was in medicinal use among the natives of Florida long before Ponce de Leon in 1512 set foot on the soil of this peninsula. It is generally stated and believed that the Spaniards in 1538, which is the date of De Soto's invasion of Florida, were the first Europeans to obtain knowledge of this drug; yet we can find no record of such a discovery in at least two narratives of this expedition that are accessible to us. On the other hand, there seemed to be sufficient evidence of the fact that the Spaniards gained a knowledge of sassafras and its medicinal virtues through the French Huguenot emigrants, who under their unfortunate leaders, Jean Ribault and René Laudonnière, occupied Florida between the years 1562 and 1564.

To the Spanish physician, Nicolaus Monardes (447), of Sevilla, in 1574, is to be credited the first detailed description of sassafras and its healing virtues, his information being gained, however, not from any actual experience in the sassafras lands but from personal consultation with travelers and from the government records at his command (239). From Clusius' (153) version of Monardes, 1593 (447), it is learned that the drug was imported from Florida into Spain some years previous to 1574, that the Spaniards in Florida, when overtaken by fevers and other diseases consequent to miasma and unwholesome drinking water, were advised by the few remaining Frenchmen to use this drug, which was called by the French sassafras (for reasons unknown to Monardes) and "pavame" by the Indians from whom the French obtained their information. Monardes (in Clusius' version) adds that sassafras grows in Florida in maritime places, such as are neither too dry nor too moist, being especially plentiful near the harbors of St. Helena and St. Matthews, where they form whole woods, which exhale such a fragrance (not true in the experience of this writer) that the Spaniards who first landed believed the tree to be the same as the cinnamon tree of Ceylon.

The illustration given by Monardes of the sassafras tree has been widely copied in the herbals of the sixteenth and seventeenth centuries, among which we name Dalechamps (1586) (181), Joh. Bauhinus

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(Bauhin, 47) (1650), and Piso (1658) (511), the latter giving it the Brazilian synonym "anhuiba."

Francisco Hernandez (314), another Spanish physician, who traveled through Mexico between the years 1571 and 1577, speaks of the occurrence of sassafras at Mechuacan in Mexico. His work was translated by Francisco Ximinez, a monk of the convent of San Domingo in Mexico, in 1615.

The latter author is quoted at length on the subject of sassafras by Jean de Laet (368), a noted Dutch geographer (who died in 1649), whose work, "Novus Orbis, etc., 1633," testifies to the probably French origin of the knowledge of sassafras. Having taken the account given by Laudonnière as his source, he speaks, in Chapter XIV, concerning the land and inhabitants of the part of Florida traversed by the French, and calls attention to the tree as being prominent in the woods and refers to the exquisite odor of its wood and bark. He says that this tree is called "*pavame*" by the Indians and "*sassafras*" by the French.

Soon after the discovery of sassafras the drug was exported to Europe, as before stated, and became at once known in Spain and France. It was well known in Frankfort-on-the-Main as early as 1582, and in Hamburg in 1587, at which time it was (F. A. Flückiger, *Am. Jour. Phar.*, 1876, p. 367) termed *lignum pavanum seu floridum, seu xylomarathri* (fennel-wood). Sailing expeditions to America were undertaken in those times to secure the wood as well as the root. An English merchant, Martin Pring, is recorded by Charles Pickering (510) as having with two small vessels arrived on the American coast in the beginning of June, 1603. The point named is 43 degrees and 44 degrees northern latitude, among a multitude of islands. Following the coast south in search of sassafras he entered a large sound, and on the north side in the latitude 41 degrees and "odde" minutes built a hut and enclosed it with a barricade, where some of the party kept guard while others collected sassafras in the woods. The natives were treated with kindness, and the last of the two vessels departed freighted on the 9th of August.

In connection with the introduction of sassafras root into England, Daniel Hanbury (*Proc. Am. Phar. Assoc.*, 1871, p. 491) unearthed the following interesting record contained in the Calendars of State Papers of the Public Record Office:

"Instructions for suche thinges as are to be sente from Virginia, 1610.

"(1) Small Sassafras Rootes to be drawn in the winter and dried and none to be medled with in the somer and yt is worthe 50*l* and better, p. Tonne," etc.

But, still, the exact botanical origin of sassafras was not known to the writers of the seventeenth century. While they were well acquainted with the peculiar foliage and the other characteristics of the tree, the flowers and the fruit were expressly stated to be unknown to such writers as Clusius (153), (Monardes) (447), 1593, Joh. Bauhinus (47) (1650), and Piso (511) (1658).

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Two early statements concerning the fruit may, however, now be recorded.

Caspar Bauhinus (48), who named the sassafras tree "arbor ex Florida ficulneo folio," in 1623 reports that specimens of the leaves and the fruit of the tree were sent to him by Dr. Doldius, of Nuremberg, and he describes the fruit as oblong, rugose, and attached to very long pedicels.

Likewise Jean de Laet (368), in the index to the chapter on sassafras of his afore-mentioned book, requests the reader to insert in the text that the fruits of this tree were brought to the notice of the author by a person returning from Novo Belgio, and adds that the fruit does not differ much in form from the berries of the laurel, although it is much smaller. It contains a white nut of bitterish taste, divided into two parts.

As far as we can ascertain, Plukenet (514a), as late as the year 1691, was the first to give an illustration of the berry, which, however, is faulty, because it is void of the acorn-like calyx. The trilobed leaves are also illustrated, and the botanical name affixed to it by Plukenet is "cornus mas odorata, foliis trifido, margine plano, sassafras dicta."

Catesby (130), true to his task as set forth in the title of his book on the natural history of Virginia, etc., viz.: to correct faulty illustration of plants by preceding authors, gives (in 1731) a good picture of sassafras, including the fruit and flowers.

In the middle and latter part of the eighteenth and the earlier part of the nineteenth century sassafras was studied in its native country by such celebrated travelers as Peter Kalm (350), J. David Schoepf (582), F. A. Michaux (433), and Fred Pursh (528). Peter Kalm's account especially (350) contains many points of interest.

The author's boyhood was spent in the country, in Kentucky, where sassafras abounds. I do not remember to have smelled the fragrance of sassafras trees, mentioned by these early authorities, unless the trees were broken or bruised. I have passed through great thickets of young and old trees and am sure that the statement that the fragrance is wafted far out to sea is overdrawn, as I observed no odor whatever, and am satisfied that sassafras exhales no aroma. When land in Kentucky is "worked poor" and turned out to rest it is likely to spring up in thickets of sassafras, persimmon, and black locust. I have heard old farmers, in speaking of a farm, say it was "too poor to raise sassafras," and no greater reflection could be cast on that land. No especial value is put on sassafras wood, it is not sought for fence posts nor is it used to drive away insects of any description.

As a remedy the bark is used in the spring to "thin the blood," being drunk as a tea. Indeed, I do not dislike it as a beverage, early impressions leading me now to take a package of fresh bark home with me occasionally for a family dish of sassafras tea. This is made exactly as coffee is prepared as a beverage, and is sweetened and used with cream in the same way. That sassafras tea was a very common *beverage* in my boyhood days may be shown by the following incident: I was traveling up the Ohio River on one of the palatial steamers of other

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days, and the waiter asked a Kentuckian at my side who ordered tea, "what kind of tea" he wanted. "Store tea," he answered, "I kin git plenty of sassafras at home."

It is not customary for sassafras drinkers to keep the root-bark separated from the root, the recently dug roots being shaved as the bark was used. Kentuckians claim that there are two varieties of sassafras, the red sassafras and the white, distinguished only by the bark. The white sassafras is not so aromatic and is bitter to the taste, and they use only the red bark.

In addition to the wood, root and bark, mucilage of the pith is employed in domestic medicine to bathe inflamed eyes. I find a complete description of the domestic uses of sassafras in Rafinesque's Medical Flora, 1830, which for various reasons I feel called upon to reproduce as an ending to this record of sassafras.

Found from Canada to Mexico and Brazil. Roots, bark, leaves, flowers, fragrant and spicy. Flavor and smell peculiar, similar to fennel, sweetish sub-acrid, residing in a volatile oil heavier than water. The *sassafrine*, a peculiar mucus unalterable by alcohol, found chiefly in the twigs and pith, thickens water, very mild and lubricating, very useful in ophthalmia, dysentery, gravel, catarrh, etc. Wood yellow, hard, durable, soon loses the smell; the roots chiefly exported for use as stimulant, antispasmodic, sudorific, and depurative; the oil now often substituted; both useful in rheumatism, cutaneous diseases, secondary syphilis, typhus fevers, etc. Once used in dropsy. The Indians use a strong decoction to purge and clean the body in the spring; we use instead the tea of the blossoms for a vernal purification of the blood. The powder of the leaves used to make glutinous gombos. Leaves and buds used to flavor some beers and spirits. Also deemed vulnerary and resolvent chewed and applied, or menagogue and corroborant for women in tea; useful in scurvy, cachexy, flatulence, etc. Bowls and cups made of the wood, when fresh, it drives bugs and moths. The bark dyes wood of a fine orange color called "*shikih*" by Missouri tribes, and smoked like tobacco.

SCAMMONIUM

The dried juice of scammony (*Convolvulus scammonia*) has been used in domestic medicine from ancient times. Theophrastus (633), 300 B. C., mentions it, as well as did Dioscorides (194), Pliny (514), Celsus (136), and Rufus of Ephesus (561a), a city in whose neighborhood scammony abounded, as is yet the case near its ruins. The early Arabians were acquainted with the plant, and in the tenth and eleventh centuries it was used in Britain, being commended to Alfred the Great by Helias, Patriarch of Jerusalem. Botanists of the sixteenth and seventeenth centuries, as Brunfels (107), Gesner (264), and others, described the plant as well as the drug obtained therefrom, the latter being well described by Russell (566), an English physician of Aleppo, in 1752.

Scammony is obtained from Asia Minor, near Smyrna, which is its principal port of export. The resin of scammony, in the form of a dried juice, was gathered by means of sea shells, within which the juice collected and dried, a method of obtaining it still practiced in Asia Minor. Mr. Clark, of Sochia, near Smyrna, obtained the resin as an alcoholic extract from the dried root, a method of production

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now in use, but which probably yields a product different from the natural gum (see Manna). Scammony is a gift of the Orient, the beginning of its use being home medication.

SCILLA

This bulbous plant (*Urginea maritima*) is broadly distributed in the islands of the Mediterranean and the countries neighboring, in the south of Spain and Portugal, and in many instances is found far inland, even to an elevation as high as three thousand feet above sea level. It is one of the most anciently recorded remedies, being mentioned by Epimenides (294), a Greek writer of the seventh century B. C., who made such use of it that it became known as *epimenidea*. Theophrastus (633) mentions it, Pliny (514) notes its two varieties, Dioscorides (194) describes the making of vinegar of squills, whilst preparations of squill with honey were familiar remedies in Arabian medication. The forms employed by the empiricists of those remote times seem not to have been improved upon by the pharmacy even of the present day; indeed, attempts to improve the aqueous or acetous squill simples of ancient home medication by alcoholic extracts and tinctures, have resulted in failure.

SCOPARIUS

This woody shrub, *Cytisus scoparius*, or *common broom*, prevails throughout Great Britain and Western and temperate Northern Europe, but it seems not to climb to any great height on the mountains of the Alps. According to Ledebour (375) it is native to the eastern side of the Ural Mountains. Scoparius is mentioned in the earliest Italian and German herbals under the name *genesta*, and under the name *broom* it was used in Anglo-Saxon medicine as well as in the Welsh "Meddygon Myddfai" (507). (See Note, page 1.) The London Pharmacopeia, 1618, gave it a place, and Gerarde (262) states that Henry VIII used it as a remedy "against surfets and diseases thereof arising." Broom also enjoyed a reputation in other directions, for example, being the emblem of "The Handsome" Geoffrey, or "Plantagenet," Count of Anjou, ancestor of the Plantagenet kings of England, who wore the common broom of his country, the "plantagenista," in his helmet. Scoparius in the Pharmacopeia of the United States seems, like other established foreign drugs, to have heired its reputation and obtained its position from past records in mediæval European or Oriental times, instead of from any marked use it has enjoyed in American medicine.

SCOPOLA

The root of this plant, *Scopola carniolica*, is now official and may be substituted for belladonna in the making of the mydriatic alkaloids. Although of recent introduction in scientific pharmacy, it has an interesting botanical record, reaching back to Matthioli (414), who named it *Solanum somniferum alterum*.

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This historical record of the plant is made complete by that unexcelled authority, E. M. Holmes, of London, his paper being published in full in the *Pharmaceutical Journal and Transactions*, London, December 14, 1889, pp. 468-471. The name by which it is now recognized was given to the plant by Jacquin (388a) in honor of Dr. Johann Anton Scopoli, professor of botany in the University of Pavia, who (1760) published his discovery of the plant under the name *Atropa caule herbaceo*. (See Lloyd Brothers' Drug Treatise No. X for biographical sketch.) Many are the names since affixed to it, regarding which Mr. Holmes remarks as follows: "Jacquin's name has unfortunately been several times altered by succeeding botanists."

The historical treatise of Holmes was briefly condensed as follows by Professor Maisch:

"The Natural History of *Scopola carniolica* (Jacquin)" gives a complete history of the synonymy of this plant, commencing with Matthioli, who in 1563 named it *Solanum somniferum alterum*. It was further described in 1622 by Caspar Bauhin under the name of *Solanum somniferum bacciferum*; in 1651 by J. Bauhin as *Solanum manicum*, "quod secundo loco proponimus;" in 1760 by J. A. Scopoli, Professor of Botany at Pavia, as *Atropa caule herbaceo foliis ovatis, integris, fructu capsulari*; in 1764 by Jacquin as *Scopola carniolica*; in 1767 by Linnæus as *Hyoscyamus Scopolia*; in 1794 by Moench as *Scopola trichotoma*; in the same year by Schultes as *Scopolina atropoides*; in 1821 by Link as *Scopola atropoides*; and in 1837 by G. Don as *Scopolia carniolica*.

The generic name *Scopolia* had been applied in 1763 by Adanson for what is now *Ricotia*, Lin., *Crucifera*; in 1776 by Forster for what is now *Griselinia*, Forst., *Cornacea*; in 1781 by Linnæus fil., for what is now *Daphne*, Lin., *Thymelacea*; in 1790 by Smith for what is now *Toddalia*, Juss., *Rutacea*.

Jacquin's name for the plant being the first binomial one published after the date of the first edition of Linnæus' *Species Plantarum* in 1753, should supersede the later names given by others. This author repeatedly writes "*Scopola*" (not *Scopolia*) in his published work.

This plant, possessing so much energy, was naturally known to the early herbalists, but was most cautiously employed by them. Wier (1515-1588) mentioned it (Maisch), but it was then forgotten until Dr. Lippich, of Padua (1834-7), used it instead of belladonna. The record shows that (410a) in Southern Europe (Martius, 1832) the leaves were used in the same way as belladonna. Kosteletzky (1832) states (361a) that it has the narcotic qualities of hyoscyamus. Neither in domestic nor in professional medicine had scopolia any reputation worth mentioning until after 1880, when its alkaloidal record and its many complications as a sophisticant for belladonna made such an event in pharmacy and chemistry as to give the plant a position in the U. S. Pharmacopeia of 1900.

SCUTELLARIA

Scutellaria lateriflora (skullcap) was in use as a domestic remedy before the publication of the first American materia medica, as shown by Schöpf (582), 1785. It was afterward conspicuous in the practice of a local physician, Dr. Lawrence Van Derveer, of New Jersey, who discovered the qualities that he believed it carried. At least he made no mention of any previous therapeutic record (388d). Dr. Van Der-

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veer's use of scutellaria as a remedy in the cure of rabies gave him great notoriety and introduced the drug to Thacher (631), whose dissertation on "Hydrophobia and Its Cure" involved the remedies employed in that disease, as well as substances other than scutellaria commended therein. Scutellaria has thus a record both as a secret cure and as a professional remedy in the treatment of this dreadful disease, the latter, however, being altogether based upon the domestic use of the drug. According to Schöpf (582), 1785, the plant was used as a home remedy in the cure of fevers.

SENEGA

Senega, the root of a small North American plant (*Polygala senega*), enjoyed very early a reputation as one of the new remedies produced by America. The Seneca Indians of New York State employed it as a remedy for the bite of the rattlesnake, which led to its notoriety in the hands of Tennent, a Scotch physician in Virginia, who also administered it for coughs. Under the name senega, or rattlesnake root, it came to the attention of Dr. Mead, of London, and through his efforts and those of others (even Linnæus [385] writing a dissertation on it) senega root came into great demand. In domestic American medicine it has been continually used as an expectorant, the usual form being that of a syrup.

SENNA

Senna leaves are from two species of cassia, one of which is native to Nubia and other sections of Africa, while the other abounds in Yemen and Southern Arabia as well as in some parts of India, where it is cultivated for medicinal use. The cultivated plant, originally the product of Arabian seed, furnishes the leaves known in commerce as *Tinnevelly senna*. The drug was introduced into Western Europe by the Arabians, and in this connection it may be stated that, notwithstanding its present abundance in some parts of Africa, according to Isaac Judæus (336a), a native of Egypt, who lived about 850-900 A. D., senna was brought from Mecca to Egypt. In early Arabian medicine the pods of the senna were preferred to the leaves. Its price in France, 1542, was about that of pepper or ginger. This writer found senna in the Orient, carried in shops selling foods and provisions, as well as in the Oriental bazaars, it being everywhere a familiar domestic cathartic. Its native use introduced the drug to medicine and antedates historical record.

SERPENTARIA

Aristolochia serpentaria is a perennial herb found in woodlands of the temperate parts of the United States, especially in the Allegheny and Cumberland Mountains, although it seldom prevails abundantly. It is by some believed to have been first mentioned in 1636, by Thomas Johnson, an apothecary of London, who issued an edition of

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Gerarde's (262) Herbal, and it is commonly believed that this was its introduction to England. Others, however, question whether the "snakeweed" mentioned in this work was not a species of aristolochia, from Crete. The early use of serpentaria in America was as a remedy for snakebite, which gave it the name *Virginia snakeroot*, but in this direction it has not, to our knowledge, been used in recent times anywhere in America. The domestic use of this drug has been in the direction of a stimulant to the organs of digestion, and in the form of a tincture as a stomachic, it being one of the ingredients of the old-time popular stomach bitters of American home medication.

SINAPIS ALBA

White mustard (*Sinapis alba*) seems to be indigenous to the southern countries of Europe and Western Asia, from which, according to Chinese authors, it was introduced into China. Formerly it was not distinguished from black mustard. Its cultivation in England is quite recent, but it is now an abundant weed in many sections. White mustard, in common with black mustard, is an exceedingly popular, stimulating condiment, and is preferred, on account of its color as well as its mildness, to the black mustard. The "mustard seed" of the Bible is the product of a tree (*Salvadora persica*), and is not the same as the plant now known under that name. (J. H. Balfour, *Plants of the Bible*.)

SINAPIS NIGRA

Black mustard (*Sinapis nigra*) is an herb found over the whole of Europe, excepting the extreme north. It also abounds in Northern Africa, Asia Minor, the Caucasian region, Western India, Southern Siberia, and China, as well as in North and South America, where it is now naturalized. It was known to the ancients, Theophrastus (633), Dioscorides (194), Pliny (514), and others noticing the plant. In early times it seems to have been used more as a medicine than as a condiment; but 300 B. C., Diocletian speaks of it as a substance used as a condiment in the eastern part of the Roman Empire. During the Middle Ages, Europeans esteemed it as an accompaniment to salted meats. The Welsh "Meddygon Myddfai" (see Note, page 1) (507), of the thirteenth century, commends the "Virtues of Mustard." Household recipes of the thirteenth and fourteenth centuries constantly mention mustard under the name *senapium*. The convent lands of France produced it as a part of their revenues, A. D. 800. Black mustard is naturally of great importance, the credit of its introduction being, as with other substances of a similar nature, due to the observing "empiricists." The Bible reference (see *Sinapis alba*) applies alike to *Sinapis nigra*.

SPIGELIA

Spigelia marilandica is an American plant, indigenous to the temperate regions and thick woods of this country. The Indians employed a decoction of the root as a vermifuge, thus introducing it at

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an early date to the settlers, the physicians, and the botanists. It was described by Barton (43), Schöpf (582), and other authorities, but was never extensively used by the American schools of medicine, either the Botanic or the Eclectic. As a domestic remedy it was customary, half a century ago, to use a mixture of pink root and senna, to which were added a few pieces of manna, a home decoction being given to children and others afflicted with worms. In our opinion this home treatment consumed most of the drug of commerce, which, since the discovery of santonica, has come to be of minor importance. In the days of this writer's experience as a prescription clerk in Cincinnati (1865-1880) the mixture was in continual domestic demand as "pink and senna."

STAPHISAGRIA

Delphinium staphisagria, a native of waste places of Italy, the Greek islands, and Asia Minor, is now generally distributed throughout the Mediterranean countries and the adjacent islands, e. g., the Canaries. It was known to the ancients, being mentioned by Nicander (581), Dioscorides (194), Pliny (514), and others, the last-named author stating that the powdered seeds were used for destroying vermin of the head and body, in which direction it is still popular. Throughout the Middle Ages the drug continued in use, according to Pietro Crescenzo (172), of the thirteenth century. The seeds were collected in Italy, where the plant is still cultivated, being still in demand in domestic medicine as an insecticide.

STILLINGIA

Stillingia sylvatica is native to the pine barrens of the Southern States of North America, and in the form of an infusion or decoction of the green drug has been used in domestic medicine as a purgative and alterative, creeping thence to the attention of physicians of the Southern States. It was also employed empirically in cutaneous diseases, and as a constituent of various "blood purifiers" used commonly by the people of the South. A once popular remedy, *Wayne's Panacea*, was asserted by Rafinesque (535) to depend for its qualities upon stillingia, which Dr. John King (356-357) in his *American Dispensatory* most positively controverted. Inasmuch as Peter Smith (605), the "Indian Herb Doctor," neglects stillingia in his *Dispensatory*, while Rafinesque (535) gives it brief mention in his *Medical Equivalents*, it is evident that the drug came to the general attention of the medical profession by reason of the use made of it by the settlers, about the date of the first edition of King's *American Dispensatory*, 1852. Since that period until the early 60's it was a conspicuous constituent of the popular American "blood purifiers," and in the form of compound syrup of stillingia was used alike in empirical medication and by the profession.

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STRAMONIUM

Datura stramonium is now found throughout most parts of the temperate civilized world. It was found in America, where the settlers near Jamestown, Virginia, used it as a pot herb, the resulting deaths so advertising it as to create the common name, still in use, *Jamestown* or *Jimson weed*. De Candolle (186) decided that stramonium was indigenous to the Old World, probably bordering the Caspian Sea, but not of India nor yet of Europe at the time of the classical period. The herb has been a pain-relieving favorite in domestic American medicine, in the form of a poultice or ointment made from the pulp of the bruised green leaves, to ease the pains of bites and stings of insects. The dried leaf is also smoked, for the relief of asthma. The domestic use of stramonium in these directions led the early American physician to its employment both internally and externally. (See *Hyoscyamus*.)

STROPHANTHUS

The genus *Strophanthus*, which produces this drug, is chiefly African, belonging to the apocynaceæ and the tribe echitideæ of this order, distinguished from the other tribes of the order chiefly from having the anthers united after the manner of the asclepiadaceæ. Index Kewensis mentions seventeen species, Bentham and Hooker eighteen species, Pax (495) twenty-five species, and the genus is being rapidly augmented as the flora of Africa becomes better known. Plants of the genus have usually woody stems, emitting a milky juice when wounded, and are generally twining vines. The seed of commerce is probably collected from various species indiscriminately, which have been classified and differentiated by Pax (495), Planchon (512), Hartwich (304), Holmes (322), Blondel (80), and others. Space will permit us to mention only the two species which are acknowledged to be the principal source of the drug.

Strophanthus hispidus, D. C., was one of four species described by De Candolle as early as 1802, and is the species to which the drug was first ascribed. Its habitat is Senegambia and Guinea and other parts of Western Africa. The stem is a twining, milky shrub, with opposite hirsute leaves. (Hence the name *hispidus*, Latin for bristly, hairy.) The seed, which bears a slender style terminating in a plumose pappus consisting of long hairs,* is the part used in medicine.

As stated before, the genus *strophanthus* was established by De Candolle as far back as the year 1802. It was not until the early sixties, however, that the drug came to the general notice of Europeans as being one of the arrow poisons used among the African native tribes, there being two kinds of arrow poisons derived from this source. A poison was prepared on the west coast of Africa (Senegambia, Guinea, and Gaboon) called *inee* or *onaye*, which is derived

* Hartwich calls special attention to the fact that the hairs of *strophanthus* seed are very sensitive to moisture, spreading horizontally in dry air, and becoming erect in moist atmosphere. He suggests that the pappus would thus make an hygrometer sufficiently sensitive for practical purposes.

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from *Strophanthus hispidus*, D. C. This is on the authority of Henedelot, who observed the plant yielding this poison in Senegambia at the River Nunez (246). A specimen of this arrow poison was sent to Europe and investigated by Pelikan in 1865. (*Comptes Rendus*, 1865, vol. 60, p. 1209.)

On the east coast of Africa the *kombe* or *gombe* poison was in use in the Manganjah tribe, located near Lake Nyassa on the banks of the River Shire, a tributary of the Zambesi River. Consul Kirk in Zanzibar, in 1861, established that this poison originated from a *strophanthus* species, and forwarded specimens to Professor Sharpey in England for the purpose of investigation (246). Subsequently, in 1865, Livingstone's famous reports brought the *kombe* poison to a more general notice among the Europeans (387).

This species of *strophanthus* was at first considered identical with *S. hispidus*, D. C., but the plant was shown by Oliver in 1885 to be distinct from the latter, and justified the establishing of a new species, *Strophanthus kombe*.

The physiological features of the drug as a powerful cardiac were recognized by the first investigators (Sharpey, 1862; Pelikan, 1865; Fraser, 1871). Livingstone reports the observation of Consul Kirk that the poison remarkably reduced the pulse, but the drug was not authoritatively recognized by the medical profession until about the year 1885. In this connection it is interesting to note that in Somaliland, Africa, the native, in order to establish the virulence of the poison, scrapes the skin from his own arm until the blood flows, when he applies the poison to the lower end of the bloody pool and watches the coagulating effect, from below upward. To the firm of Burroughs, Wellcome & Co., London (677-678), is largely due the position that *Strophanthus* occupies in the medical lore of the present day, this being due chiefly to the efforts of Mr. Henry S. Wellcome, through his friend, Henry M. Stanley, the African explorer.

STYRAX

Styrax is the product of a tree native to the southwestern part of Asia Minor and the adjacent islands. According to Krinos, of Athens, 1862, the earliest allusions to styrax were made by Aëtius (6) and Paulus Ægineta (494), 1567. The early Arabian physicians were acquainted with styrax and its methods of production. The Russian Abbott of Tver, 1113-15, describes the tree as found by him in his travels through Asia Minor. Styrax reached China as early at least as 1368 by means of Arabian caravans, but it is now shipped to China by way of the Red Sea and India. Its use in medicine is restricted mainly to an external application in skin diseases, combined with other substances. It has, however, been recommended for internal use, and in former times it was a constituent of empirical compounds designed for internal medication. (Not official in the eighth revision U. S. P.)

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SUMBUL

Musk root, *Ferula sumbul*, was first introduced into Russia as a substitute for musk, and was known in Germany in 1840 as a Russian product. Its history is to the effect that in 1869 a Russian traveler, Fedschenko (240), discovered the plant producing it in the northern part of the Khanat of Bukhara, 40° N. Lat. Sumbul has no authentic position in so-called "scientific" medicine other than that it crept into the British Pharmacopœia in 1867 as a substance that had been recommended as a substitute for musk in cholera.

TAMARINDUS

The tamarind (*Tamarindus indica*) is a handsome tree indigenous to tropical Africa. It is also found throughout India, Java, and Yemen, and has been naturalized in South America as well as in adjacent tropical islands, such as the West Indies; also in Mexico, we having gathered it in La Paz, Lower California. The ancient Greeks and Romans seem not to have known the tamarind. If known to the Egyptians, it was neglected by their authors, although Sir Gardner Wilkinson (688) states that tamarind stones were found in the tombs of Thebes, a statement not confirmed, however, by specimens of the contents of tombs in the British Museum. The ancient Sanskrit writings mention tamarind, and the fruit was known to the Arabians as *Indian dates*, under which name it was mentioned by early authors, such as Avicenna (30) and others, including Alhervi (2), of Persia. Credit is given the Arabians for the distribution of the drug and its uses, it passing from them, with other Eastern products, into Europe through the famous school of Salernum. Tamarinds have been used in their native countries in the making of a cooling drink much relished by persons afflicted with fevers, in which direction they have been also employed in medicine throughout the civilized world. It would be better if the modern physician were more familiar with the grateful home-made drink that tamarinds afford the parched sufferer from fever.

TARAXACUM

The dandelion (*Taraxacum officinale*) is a plant familiar to all, being found throughout the whole of Europe, Central Asia, and North America, even to the Arctic regions. Although the word *taraxacum* is usually considered to be of Greek origin, there is no authentic record that the plant was known to the classical writers of Greece and Rome. The herbal, 1488, of Johann von Cube (173) gives it a position under the name *Dens leonis*. It is mentioned by Rhazes in the tenth and by Avicenna (30) in the eleventh centuries, and it was used in Welsh medicine in the thirteenth century. In domestic mediæval medication and as an ingredient of many popular American "bitters" and "blood purifiers" taraxacum was employed extensively. It yet enjoys a high reputation as a home remedy.