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## GUAIACUM OFFICINALE. OFFICINAL GUAIACUM.

*SYNONYMA.* GUAIACUM. *Pharm. Lond. & Edin. Miller's Dict.* Guaiacum, foliis fere impetiolatis, bijugatis, obovatis & leniter radiatis; pinnis & ramulis dichotomis. *Browne's Jamaica*, 225. Lignum Vitæ, or Guaiacum. *Hughes's Barbadoes*, 142. Guaiacum Americanum primum, fructu aceris, sive legitimum. *Breyn. Prodr.* 1. 31. Pruno vel Euonymo affinis arbor, folio alato, buxeo, subrotundo, flore pentapetalo cæruleo racemoso, fructu aceris cordato, cujus cortex luteus corrugatus, semen unicum majusculum nigricans nullo officulo tectum operit. *Sloane's Jam.* vol. 2, 133. & *Cat. P. Jam.* 186. Guaiacum flore cæruleo, fructu subrotundo. *Plum. Nov. Gen.* 39. Guaiacum, magna matrice. *Baub. Pin.* 448. Lignum sanctum, Lignum Indicum, et Palus sanctus, *Quorundam.*

*Class* Decandria. *Order* Monogynia. *L. Gen. Plant.* 518.

*Ess. Gen. Ch.* *Cal.* 5-fidus inæqualis. *Petala* 5, calyci inserta. *Caps.* angulata 3 s 5-locularis.

*Sp. Ch.* *G.* foliolis bijugis obtusis.

THE Guaiacum tree grows to the height of forty feet, and to the circumference of four or five, sending forth several large dividing and subdividing knotted branches; the bark of the trunk is of a dark gray colour, variegated with greenish or purplish specks, but of the branches it is uniformly ash-coloured, striated, and marked with fissures; "the roots are very thick in proportion to the size of the tree, and run a great way into the ground, in a perpendicular direction;" the leaves are pinnated, consisting of two, three, and sometimes four pair of pinnæ, with very short footstalks, smooth, shining, veined,

Guaiacum officinale.

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## GUAIACUM OFFICINALE. OFFICINAL GUAIACUM.

*SYNONYMA.* GUAIACUM. *Pharm. Lond. & Edin. Miller's Dict.* Guaiacum, foliis fere impetiolatis, bijugatis, obovatis & leniter radiatis; pinnis & ramulis dichotomis. *Browne's Jamaica*, 225. Lignum Vitæ, or Guaiacum. *Hughes's Barbadoes*, 142. Guaiacum Americanum primum, fructu aceris, ſive legitimum. *Breyn. Prodr.* i. 31. Pruno vel Euonymo affinis arbor, folio alato, buxeo, ſubrotundo, flore pentapetalo cæruleo racemoſo, fructu aceris cordato, cujus cortex luteus corrugatus, ſemen unicum majuſculum nigricans nullo officulo tectum operit. *Sloane's Jam.* vol. 2, 133. & *Cat. P. Jam.* 186. Guaiacum flore cæruleo, fructu ſubrotundo. *Plum. Nov. Gen.* 39. Guaiacum, magna matrice. *Bauh. Pin.* 448. Lignum ſanctum, Lignum Indicum, et Palus ſanctus, *Quorundam.*

*Claſs* Decandria. *Order* Monogynia. *L. Gen. Plant.* 518.

*Eſſ. Gen. Ch.* *Cal.* 5-fidus inæqualis. *Petala* 5, calyci inſerta. *Caps.* angulata 3 s 5-locularis.

*Sp. Ch.* *G.* foliolis bijugis obtuſis.

THE Guaiacum tree grows to the height of forty feet, and to the circumference of four or five, ſending forth ſeveral large dividing and ſubdividing knotted branches: the bark of the trunk is of a dark grey colour, variegated with greeniſh or purpliſh ſpecks, but of the branches it is uniformly aſh-coloured, ſtriated, and marked with fiſſures; "the roots are very thick in proportion to the ſize of the tree, and run a great way into the ground, in a perpendicular direction:" the leaves are pinnated, conſiſting of two, three, and ſometimes four pair of pinnæ, with very ſhort footſtalks, ſmooth, ſhining, veined,

of an inverſely oval ſhape, and dark green colour: the flowers grow in cluſters, or umbels, upon long peduncles, which ſpring from the diviſions of the ſmaller branches: the calyx is of five leaves; theſe are concave, oblong, obtuſe, patent, unequal, and deciduous; the petals are five, elliptical, concave, ſpreading, and of a rich blue colour; the ſtamina are erect, villous, taper from the baſe, and are crowned with yellowiſh hooked antheræ; the germen is oval, angular, and in its capſular ſtate aſſumes the figure we have ſeparately deſcribed; the ſtyle is ſhort and tapering; the ſtigma is ſimple, and pointed; the ſeeds are ſolitary, hard, and of an oblong ſhape.

Linnæus makes three ſpecies of the Guaiacum, viz. the officinale, ſanctum, and afrum; the ſpecific difference between the two former he fixes wholly on the number of the pinnæ of the leaves, defining the firſt foliolîs bijugîs, and the ſecond foliolîs multijugîs; but the leaves, according to the plant we have figured, commonly conſiſt of three, and ſometimes four pair of pinnæ,[a] ſo that this ſpecific deſcription is by no means diſtinctly characteriſtic. In a medical ſenſe, the ſanctum has been generally conſidered ſynonymouſly with the officinale, and from the inveſtigation we have given this ſubject, we believe it founded in botanical truth.[b]

This tree is a native of the Weſt India iſlands, and the warmer parts of America, and appears from the MS. of Sir Hans Sloane, in the Britiſh Muſeum, to have been firſt cultivated in this country by the Ducheſs of Beaufort in 1699.[c] The wood, gum, bark, fruit, and even the flowers of this tree, have been found to poſſeſs medicinal qualities.[d] The *wood* is brought here principally from Jamaica in large pieces of four or five cwt. each, and, from its hardneſs and beauty, is in great demand for various articles of turnery ware.—

[a] There can be no doubt of our plant being the true officinale, we had it with ſeveral others from Mr. Aiton, whoſe extenſive botanical knowledge is above our praiſe, and only to be equalled by that liberality of mind with which he communicates it. The teſtimony of Sir Hans Sloane is in oppoſition to Linnæus, for he obſerves that the leaves have ſometimes four pair of pinnæ.

[b] Monardus divides the wood into three ſorts, and C. Bauhin adopts two of theſe by the diſtinctions of Guaiacum magna matrice, and the Guaiacum propemodum ſine matrice: theſe circumſtances, however, depend upon the age, ſize, &c. of the tree. The icons of theſe ſpecies, given by Blackwell and Regnault, cannot, we preſume, be conſidered as deciſive.

[c] Vide Aiton's Hort. Kew. [d] Long's Hiſtory of Jamaica, vol. 3. p. 725.

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It is extremely compact, and so heavy as to sink in water: the outer part is of a pale yellowish colour, the heart of a dark blackish brown, with a greater or less admixture of green. It scarcely discovers any smell, unless heated, or while rasping, in which circumstances it yields a light aromatic one: chewed, it impresses a slight acrimony, biting the palate and fauces. Its pungency resides in a resinous matter, which is totally extracted by digestion in rectified spirit, and partially by boiling water. The quantity of solid extract, obtained by rectified spirit, amounts to about one-fourth of the weight of the wood; with water, scarcely one-sixth is obtained.[e] The *gum*, or rather gummy resin, is obtained by wounding the bark in different parts of the body of the tree, or by what has been called jagging. It exudes copiously from the wounds, though gradually; and when a quantity is found accumulated upon the several wounded trees, hardened by exposure to the sun, it is gathered and packed in small kegs for exportation. This resin is of a friable texture, of a deep greenish colour, and sometimes of a reddish hue; it has a pungent acrid taste, but little or no smell, unless heated. It contains more resin than the watery extract made from the wood; and more gummy matter than the spirituous extract.[f]—The Guaiacum tree also yields a spontaneous exudation from the bark, which is called the native gum, and is brought to us in small irregular pieces,‖ of a bright semipellucid appearance, and differs from the former in being much purer.[g] The *Bark* contains less resinous matter than the wood, and is consequently a less powerful medicine, though in a recent state it is strongly cathartic. The *Fruit*, (says a late author) " is purgative; and, for medicinal use, far excels the bark. A decoction of it has been known to cure the venereal disease, and even the yaws in its advanced stage,

[e] Lewis's M. M. 330. [f] Des Marchais, Voyage en Guinée & Cayenne, tom. 3. p. 246. " The Gum, or rather the resin of this plant, transudes frequently of its own accord, and may be seen concreted on many parts of it at all seasons of the year; but it is generally found in greater abundance where the bark has been cut or wounded." Browne's Jam. 226.

‖ It is sometimes sophisticated by the negroes with the gum of the Manchineal tree, (a species of the Hippomane) but this is easily detected by dissolving a little in spirit of wine or rum. The true gum imparts a whitish or milky tinge; but the Manchineal gives a greenish cast. Long, l. c. 724. Möuch advises a few drops of Spirit. nitri dulc. to be added to the spirituous solution, and then to be diluted with water, by which the gum is precipitated in a blue powder; but the adulteration will appear floating in white striæ, &c. Vide Crell's Chem. Journ. P. 2. p. 78. [g] Long, l. c.

without

without the uſe of mercury." The *Flowers*, or bloſſoms, are laxative, and in Jamaica are commonly given to children in the form of ſyrup, which in appearance much reſembles that of violets. It is only the wood and reſin of Guaiacum which are now in general medical uſe in Europe; and as the efficacy of the former is ſuppoſed to be derived merely from the quantity of reſinous matter which it contains, they may be conſidered indiſcriminately as the ſame medicine. Guaiacum was firſt introduced in the Materia Medica ſoon after the diſcovery of America,[h] and previous to the proper uſe of mercury in the lues venerea, it was the principal remedy employed for the cure of that diſeaſe, and its great ſucceſs brought it into ſuch repute, that it is ſaid to have been ſold for ſeven gold crowns a pound;[i] but notwithſtanding the very numerous teſtimonies in its favour ‡, it often failed in curing the patient, and was at length entirely ſuperſeded by mercury; and though it be ſtill occaſionally employed in ſyphilis, yet it is rather with a view to correct other vitia in the habit, than for its effects as an antivenereal.*

The general virtues of Guaiacum are ſtated by Bergius to be mundificans, ſudorifera, diuretica, ſubcalefaciens, ſtomachica, and its uſe to be in ſyphilis, arthritis,† morbi cutis, odontalgia;[k] and to theſe we may add chronic rheumatiſm, ſcrophula, and ſome ſcirrhous diſeaſes. —To Dr. Cullen Guaiacum ſeems analogous to the nature of the ballams and turpentines, he therefore ſuppoſes it like

[h] Initium celebritatis dedit felix curatio, quam in inſula St. Dominici Hiſpanus quidam ſuperioris ordinis, qui morbum ab India muliere contraxerat, jam doloribus diris detentus, ſuadente famulo ſuo Indo, ex hoc ligno in ſemet experiebatur. Ejus exemplo præeunte, plures alii Hiſpani eodem modo contaminati ad idem auxilium fauſto ſucceſſu confugerunt. Quod quum poſt reditum Hiſpali ab hiſce evulgaretur, hinc per totam Hiſpaniam, & inde per totum reliquum orbem, quem lues occupaverat, fama remedii increbuit. Monardes Simpl. Med. p. 341. Vide Murray's Ap. Med. vol. 3. 409. And according to Delgado, Guaiacum was uſed in Spain ſo early as 1508. (del modo de adoperare el Legno ſanto. Venet. 1529).

[i] Vide Friend's Hiſt. vol. 2. p. 365. And Maſſa de Morb. gal. 71. ſays, Ligni libra una ſcutatis aureis undecim veniret. ‡ Vide Böhm Diſſ. variæ ſiphilidis therapiæ.

* Perhaps the opinions and facts adduced by Boerhaave, Aſtruc, Plenk, De Haen, Hutten, and lately by Mr. Hunter, may be conſidered in ſome meaſure as exceptions.—The laſt of theſe authors remarks, that the Guaiacum was firſt uſed in Europe as a remedy for the Syphilis in 1517; but from the authority we have cited above, it appears to have been employed nine years ſooner.

† Though upon the authority of Mead, Pringle, and others, Guaiacum has been much employed in rheumatiſms, yet it was of little eſtimation in the gout till Mr. Emerigon of Martinico, publiſhed his letters about thirteen years ago, (Specifique contre la goutte, &c.)

[k] Mat. Med. 346.

theſe

thefe to be very diffufible in the fyftem, and thereby to have a confiderable power in ftimulating the extreme veffels every where; and in this way he accounts for its power in chronic rheumatifm, and from its paffing off by the pores of the fkin, he confiders it a probable remedy in fome cutaneous diforders.[l]

This opinion correfponds with Murray's, who fays, —— Et hifce partibus refinofis quidem Guaiacum per minimos corporis noftri canales efficaciter penetrat, impacta refolvit & difcutit, balfamicam virtutem exercet et fudorem potenter pellit, item evacuationes per alvum vel lotium, vel aliquando falivæ profluvium, ciet.[m] According to Lewis, where the excretory glands are obftructed, the veffels lax and flaccid, and the habit replete with ferous humours, it has good effects: but in thin emaciated habits, and an acrimonious ftate of the fluids, it often does harm.[n]—We have frequently conjoined it with mercury and foap, and in fome cafes with bark or fteel, and found it eminently ufeful as an alterative. In the pharmacopœias it is directed in the form of tincture and elixir; the latter is ordered by the Edinburgh college to be prepared in two ways, viz. with rectified fpirit, and the vinous fpirit of fal ammoniac.[o] Of thefe compounds the dofe may be from two fcruples to two drams: the powder is generally given from 6 grains to 20, or even more, for a dofe, either by itfelf, or in a fluid form, by means of mucilage or the yolk of egg. The Decoctum lignorum, (Pharm. Ed.) of which Guaiacum is the chief ingredient, is commonly taken in the quantity of a pint a day.

[l] Mat. Med. vol. 2. 197. [m] Murray's Ap. Med. vol. 3. 408. [n] l. c. 331.

[o] Dr. Cullen obferves, that "feveral phyficians have apprehended mifchief from the ufe of the Guaiacum in a fpirituous tincture, and I am certain that it fometimes happens. It is therefore that in imitation of the very refpectable Berger of Copenhagen I avoid the fpirituous tincture of Guaiacum, and employ almoft only the diffufion of it in water. In preparing this, having firft with an equal part of hard fugar reduced the Guaiacum to a fine powder, I apply fome portion of the yolk of egg, or of a mucilage of gum arabic, and rubbing thefe together very carefully, I form an emulfion with water, or watery liquors, as may be thought proper. This preparation I give over night in fuch a quantity as may open the belly once next day, which will happen to different perfons from dofes containing 15 to 30 grains of the Guaiacum." M. M. 199. Berger's formula is the following: ℞ G. guaiaci ℥ſs G. arabici ʒij. Bene trita folv. in aquæ hyffopi vel alius diftill ℥ix. Add. facchari ℥ſs m. d. ſ. folutio, cujus duo cochlearia majora mane & vefperi capiantur, fuperbibito libra una decocti hordei vel avenæ. Vet. Acad. Handl. vol. 1. p. 74. Theden recommends the Guaiacum made into pills with foap of almonds, which is ftill more convenient (*neue Bemerk. u Erfahr, a. d. Wundarzneyk. und Arz.* P. 2. 204.)