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VIII. *An ACCOUNT of the QUASSIA POLYGAMA, or BITTER-WOOD of Jamaica; and of the CINCHONA BRACHYCARPA, a new Species of JESUIT'S BARK found in the same Island. By Mr JOHN LINDSAY, Surgeon in Westmoreland, Jamaica.*

[Read Nov. 7. 1791.]

THE *Quassia Polygama* has long been known in Jamaica, and in some other islands in the West Indies, not only as an excellent timber, but as a useful medicine in putrid fevers and fluxes. With us, it is called *Bitter-wood*, and in the Windward Islands, the *Bitter Ash*. The bark has for some time been prescribed by practitioners here, and exported to England in considerable quantities, for the purposes of the brewers of ale and porter. On these accounts, a fuller description of this plant than has hitherto appeared, will be acceptable to the botanist and the public at large.

PREVIOUS to this, it will be proper to give a short historical account of this tree from preceding writers.

Sir HANS SLOANE, who called at Barbadoes, notices the *Bitter-wood*. In his catalogue, he describes it thus: " *Milanomma* " *et melanoxyllum, arbor laurifolia nucifera, gemmis nigricanti-* " *bus, Americana.*" He refers to PLUKENET, Tab. 205. fig. 3.; but that plant is different from ours, and probably he meant another, which we shall have occasion to mention presently.

Dr

Dr PATRICK BROWNE, and after him Mr LONG, in their Histories of Jamaica, mention this tree by the names of *Xylopicrum*, *Xylopia glabra*, *Bitter-wood* or *Bitter Ash*. Mr LONG, in speaking of the *Quassia Amara*, thinks the Bitter Ash of St Christopher's is the same, but does not seem to know whether the Bitter Ash has been found in Jamaica.

Dr WILLIAM WRIGHT, F. R. S. of London, Edinburgh, &c. in his Account of the Medicinal Plants growing in Jamaica \*, mentions this tree under the title of *Picrania Amara*, a new genus belonging to the class *Pentandria Monogynia*, and says it is used in putrid fevers as an antiseptic, and that less of it will do, than of the *Quassia Amara* of Surinam. Dr WRIGHT was naturally led to place this tree in the class and order he has done, from finding hermaphrodite flowers and seeds on the same tree ; at the same time he remarks, that this tree has a great affinity to the genus *Quassia*.

Dr OLAAF SWARTZ examined most of the plants in Jamaica and the other islands. He probably had seen the same tree in flower and fruit, and in his Prodomus, he styles it, "*Quassia* "*Excelsa*, floribus hermaphroditis 5dris paniculatis, foliis impari-pinnatis, foliolis oppositis petiolatis, petiolo nudo."

No other particular description of this tree has yet appeared ; and as both bark and wood may be in more general use, I have taken some pains to examine this new species, and I hope the following account of it will enable the botanist, or any other, to find it. I have, however, given a drawing of the leaves and fructification, which will put every thing out of doubt.

The *Quassia Polygama* is a very common tree in most of our woodlands. It is beautiful, tall and stately. I have measured one, which was 100 feet in length, and ten feet in circumference,

\* London Medical Journal, part III. for 1787.

rence, eight feet above the ground. The trunk is straight, smooth and tapering, sending off its branches towards the top.

THE outside bark is pretty smooth, of a light gray or ash colour, from various lichens. The bark of the roots is of a yellow cast, somewhat like the Cortex Simaruba. The inner bark is tough, and composed of fine flaxy fibres.

THE wood is of a yellow colour, tough, but not very hard. It takes a good polish, and is used as flooring.

THE leaves are sub-alternate; the small leaves are in pairs, from five to eight, standing opposite to each other on short footstalks, and ending with an odd one. They are of an oblong oval shape, and pointed; the ribs reddish, and the young leaves are covered with a fine brownish down. The flowers come out in bunches or clusters from the lower part of the last shoot before the leaves, and stand on round foot stalks. The flowers are small, of a yellowish green colour, with a very small calyx. The male or barren tree has flowers nearly similar to the hermaphrodite, but in it there are only the rudiments of a style.

THE fruit is a smooth black *drupa*, round shaped, and of the size of a pea. There is but little pulp, and the nut covers a round kernel. These *drupæ* are generally three, sometimes two, and often only one, attached sideways to a roundish fleshy receptacle. It flowers in October and November, and its fruit is ripe in December and January.

EXCEPT the pulp of the fruit, every other part of this tree has an intensely bitter taste. From this quality, Sir JOSEPH BANKS, Dr SOLANDER, and Dr WRIGHT in the paper above mentioned, gave it the name of *Picrania Amara*. In taste and virtues, it is nearly equal to the *Quassia* of Surinam, and I am credibly informed, is sold in London for the *Quassia Amara*, and it may be safely used in all cases where that drug has been thought proper, whether as an antiseptic, or in cases of weakness

ness in the stomach and bowels. It may either be given alone, or joined with the Jesuit's bark.

I HAVE seen the happiest effects from the use of this medicine in obstinate remitting fevers from marsh miasmata, in agues which had resisted the use of Jesuit's bark, and in dysenteries of long standing. It is in daily practice in dropries from debility, either in simple infusions or tincture by itself, or joined with aromatics and chalybeates.

Dr DRUMMOND, an eminent Physician here, prescribes it with great success in the above cases, as well as in amenorrhæa, chlorosis, dyspepsia, and in that species of pica called *Dirt-eating*, so fatal to a number of negroes.

THE bark of the Quassia Polygama, but especially the wood, is intensely bitter. I have used both in various forms.

THE bark is difficult to be reduced to powder. The dose is from 15 grains to 1 dram, either by itself, or joined to the Jesuit's bark.

3ii, 3iii, or 3fs of the bark or wood to 1 lb. watery infusion.

THE same quantities to decoction from 1½ lb. water to 1 lb. The dose is a wine-glass full every three, four or six hours, according to circumstances.

IN certain cases of dropsy, aromatics and preparations are joined to it, also in amenorrhæa and chlorosis; and in worm fevers, the cabbage bark, or other vegetable anthelmintics.

*Linnæan*

*Linnaean Description of the Quassia Polygama.*

ARBOR excelsa sæpe centum pedes alta. *Caudex* spectabilis, erectus, glaber. *Cortex* cinereus in Epidermide, interne albidus flavescens, tenax et ex fibris lentis confectus. *Ramuli* æterni teretes.

*Folia* sub-alterna. *Foliola* 5—10 jugata impari-pinnata, opposita, oblonga, obtuse-acuminata, glabra, integerrima, venosa, breviter petiolata. *Petiolus communis* subtus nudus. *Stipulae* laterales parvæ, lanceolatæ, erectæ, deciduæ.

*Inflorescentia* cymosa. *Pedunculi* solitarii, teretes, plerumque nudi, in plurimos ramulos divisi.

## FLOS MASCULUS.

*Cal. Perianthium*, inferum, minimum, ex squamulis quatuor compositum. *Foliolis* ovatis persistentibus.

*Cor. Petala* 4, oblonga, obtusa, æqualia, sessilia, suberecta. *Nectarium* ex squamis 4 ovatis, villosis, basi filamentorum interiori insertis.

*Stam. filamenta* 4, 5, 6, filiformia, suberecta, æqualia, corolla longiora, receptaculo inserta. *Antherae* simplices erectæ.

## FLOS HERMAPHRODITUS in diversa Arbore.

*Cal. et Cor.* ut in mare.

*Stam.* ut in mare, sed filamenta corollam vix superant.

*Pist.* Receptaculum carnosum, orbiculatum, elevatum, germine latius. *Germen* subovatum, ex duobus, tribus, raro quatuor compositum, leviter coherentibus. *Styli* crassiusculi, erecti. *Stigmata* 2, 3, 4, simplicia, declinata.

*Per.* Drupæ 2, 3, 4, globosæ, laterales, distantes, nigerrimæ, nitentes, receptaculo insertæ.

*Sem.* Solitaria globosa, unilocularia, nauco fragili tecta.

## EXPLANATION OF PLATE I.

FIG. 1. represents a branch of the male tree in flower, rather under the natural size.

2. A male flower complete, and of the natural size.
3. The same magnified.
4. The stamina in their natural situation magnified, and in the receptacle somewhat depressed.
5. A single stamen magnified.
6. A petal magnified.
7. The same of a natural size.
8. A hermaphrodite flower of the natural size.
9. The same magnified.
10. The pistillum magnified with the squamæ of the calyx; the three germina, styli and stigmata, in their natural situation.
11. The three drupæ or ripe fruit, of their natural size and situation.
12. The receptacle of its usual size.
13. One of the drupæ of ditto.
14. A transverse section of the fruit.

*An Account of the CINCHONA BRACHYCARPA, a new Species of Jesuit's Bark, growing in Jamaica.*

THIS tree was first discovered in November 1784, on the north-east side of the hill that overlooks the works of *Mountain Spring estate*, in the parish of Westmoreland, and afterwards on some of the mountains near the *Moreland estates* in the same parish. As it has hitherto been unknown to naturalists, I purpose to give a botanical account of it, and afterwards its qualities and medical effects. The better to illustrate my meaning, I sent a drawing of this new plant \*, with the fructification, to my late excellent friend Dr HOPE, who wrote me he would lay my paper before the Royal Society of Edinburgh. His death happened soon after, and prevented his intentions.

PENTANDRIA MONOGYNIA.

*Cal.* Perianthium monophyllum, superum, campanulatum, parvum, 5 dentatum, persistens, dentibus acutis, erectis.

*Cor.* Monopetala, infundibuliformis. *Tubus* cylindraceus longissimus. *Laciniis*, angusto oblongis, patente revolutis.

*Stam.* Filamenta 5, interdum sex, filiformia, tubo longiora, in fauce tubi inserta. *Antheræ* lineares erectæ.

*Pist.* Germen ovatum, inferum. Stylus filiformis longitudine staminum. Stigma crassiusculum ovatum simplex.

*Per.* Capsula oblongo-ovata magna, calyce coronata, bipartibilis, dehiscens in duas partes interius dehiscentes, dissepimento parallelo.

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Semina

\* The drawing alluded to cannot now be found. The figure annexed was taken from a dried specimen in the Herbarium of Dr WRIGHT, who saw the plant, in full flower and fruit, in 1785. Vid. Pl. II.

Semina plurima, parva, compressa, marginata.

Arbor erecta 20 pedes alta, ramis patentibus. Cortex fusco-cinereus, sapore primo dulci, mox amarescente.

Folia opposita, oblongo ovata, integerrima, glabra, subtus venosa, petiolata. Petioli breves, supra fulcati. *Stipulæ* laterales, ovato-lanceolatae, integræ, caulem arcte amplexantes.

*Inflorescentia* paniculato-corymbosa, terminalis. *Pedunculus* plerumque brachiato-triternatus, teres, nudus. *Corolla* glabra, palide rubra vel carnea, tres circiter polices longa.

I HAVE only met with this tree in three places ; in the inland, woody and mountainous parts of Westmoreland and Hanover parishes. It grew on rocky ground, with a brick mould, and affecting a northern aspect. The tallest I ever saw was about thirty feet high, and 7 or 8 inches in diameter. The *branches* are few and spreading. The *leaves* stand in pairs ; they are smooth and shining ; they are very like those of the *Portlandia grandiflora*. The *flowers* grow in pretty large clusters, on the extremities of the branches ; and have nearly the beauty and appearance of the common *honey-suckle*, but are rather larger.

THE *seed-pod* is larger than any other of this genus. It is oval, adorned with the calyx, of a firm consistence, somewhat striated, and black-coloured ; when ripe, it splits in two, and discharges a number of small, flat, brown seeds, with a membrane nearly round the edges.

THE trunk and branches are of a brownish gray colour, with a few superficial furrows, and cross cracks like the Peruvian bark. The bark of the trunk is pretty thick, and when wounded, exudes a small quantity of a milky juice. The bark, when dried, is of a purplish brown colour on the inside. It is fibrous, and more difficult to pulverise than the Jesuit's bark in use. The powder is of a purplish gray colour, and tastes sweet, then bitter and astringent.

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No opportunity ought to be omitted that can in any way make us more acquainted with this valuable genus *Cinchona*, the salutary effects of which give a security and comfort to the lives of those, in warm and unhealthy climates, beyond any other medicine we know of. This species might be used as a substitute to the Peruvian bark; but it is to be regretted, that the tree is scarce and small, and that enough of it cannot be had, at least in these parts \*.

I DO not pretend to hold up this new bark as superior, or even equal to the Peruvian. I have given it in the slightest cases of intermitting and remitting fevers, with good effect; and in a few instances, it produced a cure, where the patients had taken the common and red bark to no purpose.

To people afflicted with intermittents, I gave of the powder from twelve grains to thirty every hour, or every two hours in the absence of fever. By this means, a stop was put to the fever, and the patients recovered. I have also administered this new bark in dyspepsia, both in powder and infusion. It sat easy on the stomach, promoted appetite, and was easy to take. I had shewn this species of *Cinchona* to my good friend Dr WRIGHT, before he left the island, and gave him a little of the bark. He gave it in powder to a patient, but found it emetic, which could only happen from some peculiarity in the constitution †. In his letter to me, he intimates, that probably the same thing would happen, with every other of this genus, if given before it was completely dried.

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\* This loss may be compensated by the abundance of the *Cinchona Caribæa* seu *Jamaicensis*, described by Dr WRIGHT in the 67th vol. of Phil. Transf. and which, we are assured, has been found to answer all the purposes of the *Cinchona Officinalis*.

† See Dr WRIGHT's Account of the Medicinal Plants growing in Jamaica, London Medical Journal, part iii. for 1787.

*Of the RED PERUVIAN BARK.*

THE red bark, when genuine, and given briskly in pretty large doses, will, in particular cases, occasion a degree of anxiety, depression, giddiness and faintness, that are alarming to the patient and his friends, and perhaps, if not timely attended to, might be of serious consequence. This only happens in certain constitutions, and in weakly habits, or those rendered so by disease.

THIS effect of the red bark, so far as I know, has not been taken notice of by any writer, and when it occurs in private life, is either not attended to, or imputed to some other cause. The following extract of a letter from JAMES GRAHAM, Esq; a worthy and respectable gentleman of this island, places this circumstance in a strong light.

Mr GRAHAM had been afflicted with a fever and ague for several months, and having consulted an eminent Physician here, had the red bark prescribed him, which he was to take in doses of thirty grains each. "On taking the first," says he, "I instantly perceived an unusual pungency on my tongue. After the fifth, I felt an anxiety about my breast with faintishness; and had hardly done swallowing the sixth, when I was seized with giddiness, an universal tremor, and a profuse cold sweat. A little wine, which was given me in this situation, relieved me considerably. In about an hour, all the alarming symptoms disappeared, but I remained weak and languid. From that day, however, the fever left me, and did not return till several months after, when it was brought on by a cold, and was removed by the bark administered in the same manner, and attended nearly by the same symptoms as before."