

A description of the mangostan and the bread-fruit ... the first, esteemed one of the most delicious, the other, the most useful of all the fruits of the East Indies : To which are added, directions to voyagers, for bringing over these and other vegetable productions, which would be extremely beneficial to the inhabitants of our West India Islands / By John Ellis.

Contributors

Ellis, John, 1710?-1776.

Publication/Creation

London : Ellis, The author, 1775.

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A
DESCRIPTION
OF
THE MANGOSTAN
AND
THE BREAD-FRUIT:

The first, esteemed one of the most delicious; the other, the most
useful of all the Fruits in the EAST INDIES.

By JOHN ELLIS, Esq.

Fellow of the ROYAL SOCIETIES of LONDON and UPSAL; Agent for DOMINICA.

TO WHICH ARE ADDED,

DIRECTIONS TO VOYAGERS, for bringing over these and other Vegetable
Productions, which would be extremely beneficial to the Inhabitants of
our West India Islands.

WITH FIGURES.

LONDON,

Printed for the AUTHOR:

And sold by EDWARD and CHARLES DILLY.

MDCCLXXV.

D E S C R I P T I O N

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TO THE RIGHT HONOURABLE

THE EARL OF SANDWICH,

First Lord of the Admiralty of GREAT BRITAIN.

THE zeal, my Lord, with which you have seconded his Majesty's intentions, to promote the honour and the happiness of his subjects, in the late important enterprizes for discovery, claims from me as an individual, and from the public in general, the most grateful acknowledgements.

In hopes that posterity may have additional causes of gratitude to your Lordship, I presume to bespeak your attention to the following pages; being firmly persuaded, that the moment an object which seems conducive to the benefit of any part of the British empire is proposed to your Lordship's consideration, and

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which

which falls within the limits of your high department, no endeavours on your side will be wanting, to obtain the possession of it.

Such instances of public spirit, such attention to the glory of your Sovereign, to the honour of the British name, to science and humanity, demand this grateful tribute, my Lord, from

Your Lordship's

obedient, humble servant,

GRAY'S INN, JAN. 17,
1775.

JOHN ELLIS.

A D E.

will probably grow there with as much freedom and luxuriance as in its native islands.

who have expressly mentioned this tree and its fruit, and give such a description as may enable almost any one to know it wherever it may occur.

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The tree has been very accurately described by Dr. Garcia in the third-fifth volume of the Philosophical Transactions. It will produce in this place under the shade of the ac-

DESCRIPTION

OF THE

MANGOSTAN AND BREAD FRUIT.

THE design of the following sheets, is to incite the attention of the public, to some circumstances in which they are deeply interested.—There are two trees, natives of the East Indies, which, could they be introduced into our West India islands, would be signally useful to their inhabitants.

One of them, the Mangostan, has been long known, and has been mentioned by various writers, as producing the most pleasant fruit of any yet known. The tree itself likewise is extremely elegant.

With us, in these temperate regions, it could only be preserved in stoves, as an object of curiosity. But nothing could be more grateful, more useful to the sick, than this delicious fruit, was it practicable to make it a denison of those islands. It

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would

would probably grow there with as much freedom and luxuriance as in its native abodes.

We shall extract some accounts from the best of those writers who have expressly mentioned this tree and its fruits; and give such a description as may enable almost any one to know it wherever it may occur.

This tree has been very accurately described by Dr. Garcin, in the thirty-fifth volume of the Philosophical Transactions. I would with pleasure in this place insert the whole of that account which he there gives of it; but as I intend to present my reader with its characters as described by Dr. Linnæus, to adopt such a plan would lay me under the disagreeable necessity of repetition; a circumstance, which, at present, it is my study to avoid.

Let it be sufficient to mention, “that this tree (according to Dr. Garcin) grows to about seventeen or eighteen feet high, “with a straight taper stem like a fir,” having a regular tuft in form of an oblong cone, composed of many branches and twigs, spreading out equally on all sides, without leaving any hollow.

Its leaves, he observes, are oblong, pointed at both ends, entire, smooth, of a shining green on the upper side, and of an olive on the back.

Its flower is composed of four petals, almost round, or a little pointed: their colour resembles that of a rose, only deeper and less lively. The calyx of this flower is of one piece, expanded, and cut into four lobes. The two upper lobes are something larger than the lower ones, they are greenish on the outside, and of a fine deep red within; the red of the upper ones is more lively than that of the lower ones. This calyx incloses all the parts of the flower; it is supported by a pedicle, which is green, and constantly comes out of the end of a twig above the last pair of leaves.

The fruit of this tree (it is likewise observed by Dr. Garcin) is round, of the size of a small orange, from an inch and an half to two inches diameter. The body of this fruit is a capsula of one cavity, composed of a thick rind a little like that of a pomegranate, but softer, thicker, and fuller of juice. Its thickness is commonly of a quarter of an inch. Its outer colour is of a dark brown purple, mixed with a little grey and dark green. The inside of the peel is of a rose colour, and its juice is purple. Last of all, this skin is of a styptick or astringent taste, like that of a pomegranate, nor does it stick to the fruit it contains. The inside of this fruit is a furrowed globe, divided into segments much like those of an orange, but unequal in size; which do not adhere to each other. The number of these segments is always equal to that of the rays of the top which covers the fruit. The fewer there are of these segments, the bigger they are. There are often in the same fruit, segments as big again as any of those that are on the side of them. These segments are white, a little transparent, fleshy, membranous, full of juice like cherries or raspberries; of a taste of strawberries and grapes together. Each of the segments incloses a seed of the figure and size of an almond stripped of its shell, having a protuberance on one of its sides.

These seeds are covered with two small skins, the outermost of which serves for a basis to the filaments and membranes of which the pulp is composed.

The substance of these seeds comes very near to that of chestnuts, as to their consistency, colour, and astringent quality.

This tree, continues the doctor, which produces the most delicious fruit of all the Indies, and that yields to none of the best in Europe, originally grows in the Molucca islands, where it is called Mangostan, but has been transplanted from thence to the island of Java and Malaca, at which last place it thrives very well.

Its tuft is so fine, so regular, so equal, and the appearance of its leaves so beautiful, that it is at present looked upon at Batavia, as the most proper for adorning a garden, and affording an agreeable shade.

There are few seeds, however, he observes, to be met with in this fruit that are good for planting, most part of them being abortive.

He concludes his description, by mentioning, that one may eat a great deal of this fruit without any inconvenience; and that it is the only one which sick people may be allowed to eat without any scruple.

Dr. Linnæus has described this tree in his *Genera Plantarum*, N^o. 594, and calls it the *Garcinia*, in honour of the gentleman who has favoured the public with so accurate a description of it.

The characters of it according to him are :

Dodecandria Monogynia, No. 594.

- CALYX.** The flower-cup consists of four thick, roundish, hollow, expanded leaves, which continue.
- COROLLA.** The flower has four concave, roundish petals, lying open, something larger than those of the Calyx.
- STAMINA.** The chives consist of sixteen filaments, which are unconnected, distinct, erect, and placed in the form of a cylinder, and are shorter than the Calyx; their summits are roundish.
- PISTILLUM.** The pistil consists of the embryo seed-vessel, or ovary, which is nearly egg-shaped; this supports the style, which is very short, and is crowned with a flat, spreading, round top, like a target, that remains after the flower. This top is divided into eight blunt rays.

PERI-

PERICARPIUM. The fruit is a large, tough-coated, globular berry, with one cavity, and is crowned, as mentioned before, with the radiated flat top of the style (*a*).

SEMINA. The seeds are from five to eight in number, fleshy, and surrounded with small fibres; one side of the seed is convex, and the other angular.

To this very minute description, we shall add the following extracts from the best authorities, which it is hoped, will prove sufficient to excite the curiosity of such gentlemen who resort to the countries where the Mangostans are produced, not only to cultivate them with some degree of care for their own immediate benefit, but likewise inspire them with inclinations to acquire the honour of transmitting them to Europe, for the benefit of our fellow subjects in the West Indies.

Rumphius observes, “ That the Mangostan is universally
“ acknowledged to be the best and wholesomest fruit that grows
“ in India; that its flesh is juicy, white, almost transparent,
“ and of as delicate and agreeable a flavour as the richest grapes;
“ the taste and smell being so grateful, that it is scarce possible
“ to be cloyed with eating it.”

He adds, “ that when sick people have no relish for any
“ other food, they generally eat this with great delight; but
“ should they refuse it, their recovery is no longer expected.

“ It is remarkable, says he, that the Mangostan is given with
“ safety in almost every disorder (*b*). The dried bark is used with

(*a*) It is observed by Dr. Garcin, that the rays which belong to this stigma, or top of the style, are most frequently six or seven, but seldom five or eight in number.

(*b*) I have authority to assure the reader, that Dr. Solander in the last stage of a dreadful putrid fever that seized him at Batavia, when all his friends about him had given him up for lost, found himself insensibly recovering by sucking this delicious and refreshing fruit.

“ success.

“ success in the dysentery and tenesmus ; and an infusion of it is
 “ esteemed a good gargle for a sore mouth or ulcers in the
 “ throat. The Chinese dyers use this bark for the ground or
 “ basis of a black colour, in order to fix it the firmer.”

Miller, in his Dictionary, says, under the article *Garcinia*, that this tree grows naturally in the inland parts of New Spain ; and that he has received perfect specimens of it from thence, which Mr. Robert Miller had sent him, who had gathered them near Tolu, but did not know the tree. But, as this seems not to be fully authenticated, we leave it to be confirmed by further observation.

According to Capt. Cook, in his Voyage round the World, Vol. III. p. 737, the *Garcinia Mangostana* of Linnæus is peculiar to the East Indies ; it is about the size of the crab-apple, and of a deep red wine colour : on the top of it is the figure of five or six small triangles joined in a circle ; and at the bottom several hollow green leaves, which are remains of the blossom. When they are to be eaten, the skin, or rather flesh, must be taken off ; under which are found six or seven white kernels, placed in a circular order ; and the pulp, with which these are enveloped, is the fruit, than which nothing can be more delicious : it is a happy mixture of the tart and the sweet, which is no less wholesome than pleasant ; and, as well as the sweet orange, is allowed in any quantity to those who are afflicted with fevers, either of the putrid or inflammatory kind.

Of

Of the BREAD-FRUIT TREE.

THIS tree, in comparison with the Mangostan, has been very little regarded; though in point of use it is greatly superior. The Mangostan is useful to the sick, and grateful to all. But the Bread-fruit affords a most necessary and pleasant article of subsistence to many. This, likewise, might be easily cultivated in our West India islands, and made to supply an important article of food to all ranks of their inhabitants, especially to the Negroes.

Though it has been mentioned by several voyagers (by Rumphius, and particularly by Lord Anson), yet very little notice seems to have been taken of it, till the return of Captain Wallis from the South Seas, and since that time by others who have touched at Otaheite, and other countries in the East Indies.

Captain Dampier relates, that in Guam, one of the Ladrone islands, there is a certain fruit called the Bread-fruit, growing on a tree as big as our large apple trees, with dark leaves. The fruit is round, and grows on the boughs like apples, of the bigness of a good penny loaf: when ripe, it turns yellow, soft, and sweet; but the natives take it green, and bake it in an oven till the rind is black: this they scrape off, and eat the inside, which is soft and white, like the inside of new baked bread, having neither seed nor stone; but if it is kept above twenty-four hours it is harsh. As this fruit is in season eight months in the year, the natives feed upon no other sort of bread during that time. They

They told us that all the Ladrone islands had plenty of it. I never heard of it in any other place.

Rumphius observes concerning this tree, that it has a few spreading, crooked branches, thinly covered with leaves, which hang so loose that you may see through it on every side. The leaves, continues he, are placed upon short thick foot stalks, six or seven only forming a tuft, surrounding the extremity of the branch in the form of a rose, or larger flower. They are very large, stiff, and have underneath a thick prominent nerve; they are cut on each side into four or five deep segments, resembling the leaves of an oak, but each division or lobe ends in a point. They are about two spans long, and of little less in width: a glutinous milky juice flows from any part of the tree when wounded, and sticks so much to the hands as scarce to be washed off.

The catkin, or amentum, shoots up among the upper leaves: it is about the length of one's hand, and as thick as the thumb; pliant, soft, and wooly; and in form, very much like the reed, mace, or cat's-tail, common in our marshes.

The fruit, likewise, grows up among the leaves. It is shaped like a heart, and increases to the size of a child's head. Its surface, or rind, is thick, green, and covered every where with warts of a quadrangular or hexagonal figure, like cut diamonds, but without points. The more flat and smooth these warts are, the fewer seeds are contained in the fruit, and the greater is the quantity of pith, and that of a more glutinous nature.

The internal part of the rind, or peel, consists of a fleshy substance, full of twisted fibres, which have the appearance of fine wool; these adhere to, and in some measure form it. The fleshy part of this fruit becomes softer towards the middle, where there is a small cavity formed without any nuts or seeds, except in one species, which has but a small number, and this sort is not good unless it is baked, or prepared some other way: but if
the

the outward rind be taken off, and the fibrous flesh dried and afterwards boiled with meat, as we do cabbage, it has then the taste of artichoke bottoms. The inhabitants of Amboina dress it in the liquor of cocoa nuts; but they prefer it roasted on coals, till the outward part or peel is burnt. They afterwards cut it into pieces, and eat it with the milk of the cocoa nut. Some people make fritters of it, or fry it in oil; and others, as the Sumatrians, dry the internal soft part, and keep it to use instead of bread with other food.

It affords a great deal of nourishment, and is very satisfying, therefore proper for hard-working people; and, being of a gentle astringent quality, is good for persons of a laxative habit of body. It is more nourishing boiled in our manner with fat meat, than roasted on coals.

The milky juice, which distils from the trunk, boiled with the cocoa nut oil, makes a very strong bird-lime. This tree is to be found on the Eastern parts of Sumatra, and in the Malay language is called Soccus and Soccum Capas.

It grows likewise about the town of Bantam, in Java, and in Balega and Madura, and is known there by the name of Soccum.

Note.—This tree has been lately observed to grow in Princes Island in the Straits of Sunda, where our East India ships call to take in wood and water, in their voyage to and from China.

Extract from Lord Anson's Voyage to the South Seas.

“**THERE** are two trees common in all these islands (the Ladrone Islands) particularly in the island of Tinian, and said to be peculiar to them and some of the Philipines; these are the Rima, or Bread-fruit tree, and the Ducdu. The Bread-fruit grows upon a tree somewhat larger than our apple tree, which bears a broad dark coloured leaf, with five indentures on each side. The fruit hangs on boughs like apples, and is of the size of a penny loaf, with a thick tough rind, which, when full ripe, turns yellow. The natives gather it before it is quite ripe, and bake it till the crust is pretty black; then they rasp it, and there remains a pretty loaf, with a tender yellow crust, and the crumb of it is soft and sweet as a new-baked roll: it is without any seeds or stones.

This fruit the inhabitants enjoy for about seven months; during which they never eat any other kind of bread: but they are obliged to bake it every day, for when it grows a little stale, it becomes harsh and husky, somewhat like the potatoe-bread made in the West of England. There is, however, a remedy for this, which is cutting the loaf into slices when it is new, and drying it in the sun, by which it is changed into the pleasantest rusk that can be eaten.

The Ducdu resembles the Rima very much, both from its size and leaves; only, these latter are longer and not so much indented. The fruit is pretty near the size of the Bread-fruit, but shaped like a melon. It contains in its pulp thirteen or fifteen kernels, or seeds, of the size of a small chestnut; which, when roasted, are full as pleasant.”

CAPTAIN

CAPTAIN COOK, in his Voyage, observes, that the Bread-fruit grows on a tree that is about the size of a middling oak : its leaves are frequently a foot and a half long, of an oblong shape, deeply sinuated like those of the fig tree, which they resemble in consistence and colour, and in the exuding of a white milky juice upon being broken.

The fruit is about the size and shape of a child's head, and the surface is reticulated not much unlike a truffle: it is covered with a thin skin, and has a core about as big as the handle of a small knife; the eatable part lies between the skin and the core; it is white as snow, and somewhat of the consistence of new bread. It must be roasted before it is eaten, being first divided into three or four parts; its taste is insipid, with a slight sweetness somewhat resembling that of the crum of wheaten bread mixed with Jerusalem artichoke.

But this fruit not being in season at all times of the year, there is a method of supplying this defect, by reducing it to a sour paste, called Mahie, which is thus described by our author.

“ The fruit is gathered just before it is perfectly ripe, and being laid in heaps, is closely covered with leaves: in this state it undergoes a fermentation, and becomes disagreeably sweet; the core is then taken out entire, which is done by gently pulling the stalk, and the rest of the fruit is thrown into a hole which is dug for that purpose, generally in the houses, and neatly lined in the bottom and sides with grass; the whole is then covered with leaves, and heavy stones laid upon them. In this state it undergoes a second fermentation, and becomes sour; after which it will suffer no change for many months. It is taken out of the hole as it is wanted for use, and being made into balls, it is wrapped up in leaves and baked: after it is dressed, it will keep five or six weeks.

It is eaten both cold and hot, and the natives seldom make a meal without it; though to us the taste was as disagreeable as that of pickled olive generally is the first time it is eaten."

However, a gentleman of distinction who accompanied Captain Cook in this voyage, preferred the taste of the Mahie to that of the Bread-fruit in season.

Thus much for the Bread-fruit tree, and its fruits, as they were found by this gentleman at Otaheite. Candour, however, obliges me to mention, that the same gentleman observes, that, when at Batavia, he found the Soccum, which is of the same kind with the Bread-fruit tree of the South Sea islands; but so much inferior, that, if it had not been for the similitude of the outward appearance both of the fruit and the tree, he should not have referred them to the same class.

To obviate in some measure this objection, I must remind my readers, that there are two kinds of Bread-fruit in the East Indies: one, without any stones or seeds; the other, containing a considerable number. Both are accounted good, yet the former is held to be the most excellent. It was the latter only, that Captain Cook found at Batavia; although I am credibly informed that both kinds grow at that place.

It is likewise to be observed, that at Batavia, where the earth is liberal to its inhabitants, where the fertility of the soil in some degree compensates for the unhealthyness of climate, this valuable fruit, obscured by numbers still more agreeable, attracts no particular regard, nor receives any degree of cultivation. What influence this must have on its quality, every one, from experience in cases of a similar nature, must be sufficiently able to judge.

I would lastly take notice, that this fruit is out of season at least four months in the year; that these very months, viz. September, October, November, December, were the season
wherein

wherein that gentleman was at Batavia; so that, although the Bread-fruit tree had been cultivated there to the highest degree of perfection, it would have been extremely difficult at that time to have judged of the quality of its fruits.

Perhaps it may gratify the curiosity of some of my readers, to be informed, that the parts of fructification of that tree which bears the fruit without stones are defective. The amentum, or catkin, which contains the male parts, never expands. The styles, or female part of the fruit, are likewise deficient. From which it follows, that there can be no stones or seeds, and therefore that this tree can be propagated only by suckers or layers; although it is abundantly evident, that it must originally have proceeded from the seed-bearing Bread-fruit tree.

Instances of this kind we sometimes find in European fruits; such as the barberry, and the Corinthian grape from Zant, commonly called currants, which can therefore be increased only by layers and cuttings.

Dr. Solander informs me, that the oldest inhabitants of Otaheite, and the adjoining islands, assured him, that they well remember, there was formerly plenty of the seed-bearing Bread-fruit; but they had been neglected upon account of the preference given to the Bread-fruit without seeds, which they propagate by suckers.

It were much to be wished that both these valuable trees could be introduced into Europe; yet it is evident, that if the seed-bearing Bread-fruit tree, or the *Soccus Granofus*, as it is called by Rumphius, could be obtained, it being the parent tree, we might easily be enriched with the other also.

Thus much for the account of this tree as related by the most authentic authors. As for the botanical characters, I must intreat the reader to suspend his curiosity, until the publick is favoured with a description of that magnificent collection of

plants brought home by Mr. Banks and Dr. Solander from the South Seas.

We may, however, from what has been already observed, pronounce it to be of the *Monœcia* class of Linnæus, as it appears that the amentum, or catkin, which contains the male part of the flower, is on one part of the same plant; while the pistils, or female parts, which surround the fruit, are on the other.

Whoever will be at the pains of perusing these accounts with attention, will be sensible of the vast benefits that must result to the public from the importation of the Mangostan and Bread-fruit tree; two trees, so capable of contributing to the health, pleasure, and support, of such a number of individuals with whom we are intimately connected. For my own part, I am persuaded, that it has been for want of attention that these two foreigners have not before this time been introduced into Europe. But, when the benefit which must accrue to the public is considered, and the honour to individuals, from the introduction of these valuable plants, I flatter myself, that nothing farther is necessary to stimulate both captains of the East India ships, passengers, and residents in those countries where they grow, to render so essential a service to their fellow-subjects.

And, that no endeavours on my part may be wanting, I have not only collected the above materials, as well as my infirm state of health would permit, but have likewise subjoined a drawing of such a box, as has been found by experience capable of preserving very tender plants in great health and vigour during a very long and tedious voyage.

Though an expert workman from the drawing itself will be capable of making one with sufficient exactness; yet, as I shall think myself happy to be instrumental in procuring so great an advantage to my fellow subjects, I shall endeavour to give so

clear a description of it and its uses, as may enable any workman to make, and any seaman to manage, so simple and so useful a structure. And, that no shadow of difficulty may remain, I have desired an able workman * to keep a box of this sort always ready for inspection; who has engaged to make others of the same construction, at the most reasonable rates. The drawings of two other boxes are likewise presented to the reader, calculated for the same useful design, with a view that such gentlemen who go abroad with a resolution to promote the object of this address may be furnished with a convenient apparatus, for transmitting either these, or any other useful or rare plant, to Great Britain.

* Viz. John Bevans, carpenter, opposite the Bull and Gate, in High Holborn.

*Description of a wired Box, contrived for bringing over the
Mangostan, Bread-Fruit Tree, or any other valuable Trees
from the East Indies, or South Seas.*

THIS box is wired on every side, and on the top; having shutters that slide up and down at pleasure, to protect the plant from the weather. It has likewise an inch deal top, that is taken off or put on occasionally, fastened down at each end with hooks and eyes.

The front wires slide up and down, for the conveniency of watering the plants; one of these is down in the annexed design.

The back pannels, instead of wire, may consist of glass, by which means the plants may receive the benefit of the sun, and at the same time be preserved from the severity of the cold, when the other lights are shut up.

Two rope handles are placed at each end about eighteen inches from the bottom, for its better management on ship board.

*Description of the other two Boxes, adapted to the same Purposes
as the former.*

N^o. 1. This box is intended for sowing the seeds of such plants as cannot otherwise be transported from the East Indies. It was intended chiefly for sowing the seeds of the Mangostan; but will answer for those of the feed-bearing Bread-fruit tree, and a variety of others. It differs from the other, by having only one sloping wooden shutter behind, which may be let down, together with its front and ends, when the seeds are sown, that they may receive the benefit of the rain and dews.

It is necessary, before this box be removed from the East Indies, that the plants in it be advanced to near six inches in height.

No. 2. The sloping fore-part of this box is covered with two pannels of wire, which in bad weather are defended by shutters on hinges, fastened to the top by hooks and eyes. In each of the sides of the box, near to the top, there is a square hole, which is protected by a sliding wooden cover: when the front shutters are closed, one or both of these may be opened, to carry off the damp vapour which may arise from the plants. In the back of the box, there is a shutter on hinges the whole length of the box, which falls downwards. The flat top of this box,

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which

which is eight inches broad, is divided lengthways into two parts. The back part, which is four inches broad, turns back upon hinges, to give sufficient space when the shutter is let down, for the more conveniently coming at the plants. When these are shut, they are fastened by hooks and eyes. In the lower part of the box, divisions are made by putting pieces of wood across in an upright direction, so that the earth or the pots in which the plants are placed, may be kept from shifting by the motion of the ship. These wooden divisions need not be carried down farther than to the depth of three or four inches in the earth. If pots at any time cannot be obtained, square wooden boxes open at the top will supply their place, and with small holes in the bottom. To protect the plants from the spray of the sea, it is necessary, that oiled cloth, or canvas not tarred, be nailed on the ridge of the top of the box, of such dimensions, as when proper, to cover the whole; when let down, it must be fastened at the lower part and sides, with loops to the box, to prevent its being blown up with the wind. The bottom of the box is raised on cross bars of about two inches and an half thick, to prevent its receiving any damage when the decks are washed.

In both boxes, there ought to be leaded glass lights below the wire, to protect the plants when they come into cold climates; for want of which precaution, numbers of them have perished in the British Channel.

Holes likewise ought to be made in the bottom of each box, which may be stopped by corks, if it is found that they drain the earth too much.

In the bottom of each box, there must be put, about the depth of four inches, rotten leaves, or wood turned to mold, which must be pressed down: above this, eight inches of fresh loamy earth,

earth, like to that which in England is called hazel mold; this must lye loofe. Mofs, if it can be procured, or rotten leaves, are necessary to be laid on the surface of the earth, to prevent the too great evaporation of moisture.

Specimens of these two boxes are to be seen at Mess. James Gordon and Co. feedsmen, in Fenchurch-street; and are made by John Burnham, carpenter, in Brooks-market, Holborn.

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Reference

Reference to the Plate of the Mangostan; in which is shewn a
Branch of that Tree, with its Blossom, Leaves, and Fruit.

- FIG. 1. The flower.
a. The petals.
b. The leaves of the calyx.
- FIG. 2. The flower stripped of its petals, to shew the pistillum,
 and stamina.
d. The leaves of the calyx.
 On the left there are four of the stamina a little
 magnified.
- FIG. 3. The back part of the flower.
a. The petals.
b. The leaves of the calyx.
- FIG. 4. A back view of the fruit.
b. The leaves of the calyx, remaining after the fall
 of the flower.
i. The peduncle of the fructification.
- FIG. 5. The fruit turned differently.
l. The radiated top, being the stigma, or top of the
 style, which crowns the fruit.

FIG.

The Mangostan.



Garcinia Mangostana Linnæi.

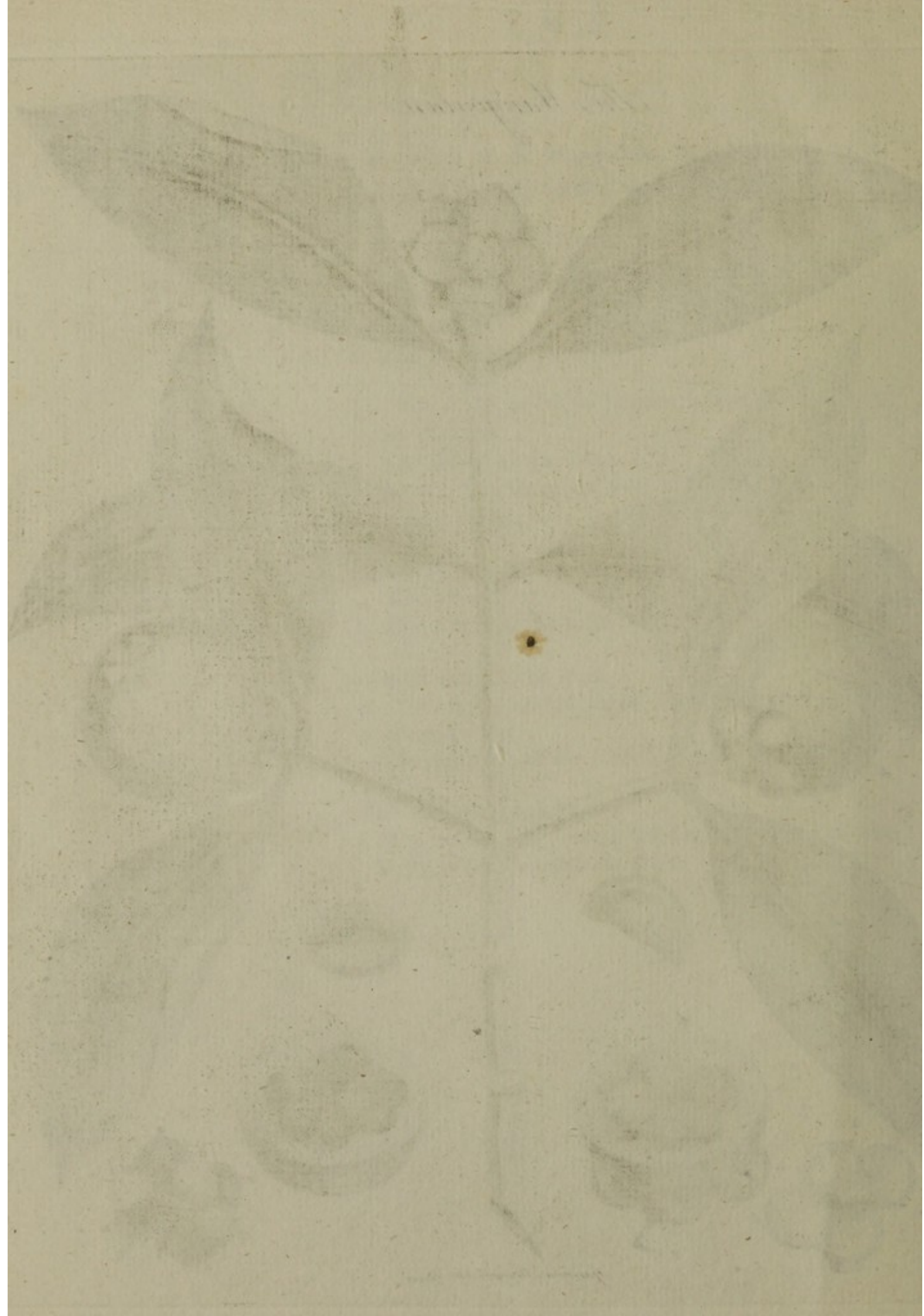


FIG. 6. The fruit cut in two, to shew the rind and pulpy segments that contain the seeds.

n. The rind.

o. The leaves of the calyx.

p. The peduncle of the fructification.

FIG. 7. One of the pulpy segments, containing the seed.

FIG. 8. The seed, with its downy fibres.

Observations

Observations and Instructions for Captains of Ships, Surgeons, Super-cargoes, and others, who are unacquainted with Botany; but wish to be assisting in promoting that Science, and the more general Cultivation of useful Plants in the British West Indies.

IT may be proper in the first place to inform them, which are the articles that will prove the most valuable acquisitions to this country.

Enough has been said already of the Bread-fruit and Mangostan.

The next in importance are the spices :

The Cinnamon of Ceylon.

The Black Pepper of Malabar.

The Cloves of Amboyna, and

The Nutmegs of the Banda islands.

After these,

The Cinchona, or Jesuits Bark, of the Cayanuma Mountains, in Peru.

The Viola Ipecacuanha of Brasil, Peru, and The Bay of Honduras.

The Convolvulus Jalapa, }
The Smilax Zarfaparilla, } of Mexico and Brasil.

And the true Cortex Winteranus, of the Straits of Magellan.

Some of these may be difficult to procure ; but these difficulties are not unfurmountable. The French have within a few years, in spite of the vigilance of a neighbouring nation, procured plants of the Clove and Nutmeg, which thrive very well in
the

the island of Bourbon; and some of them, it is said, have been lately transported from thence to the West Indies. Should they succeed, it will be easy for us to avail ourselves of their diligence; if not, we must imitate it.

From our nearest settlements, a well-concerted correspondence may procure us seeds gathered full ripe from the trees, and immediately put, with their capsules or coverings, into a leaden canister, with some of the soil on the spot, 'part of which should be laid at bottom; then a layer of seeds and of mould alternately, until the canister is quite full; after which it may be kept closely covered, and the seeds conveyed a considerable distance with safety.

Seeds of the tea plant have been brought in this manner from China, and, after a voyage of a twelvemonth, arrived in a growing state.

By this method the vegetation is checked, but not destroyed. It may be followed upon all occasions when the seed cannot be planted immediately. As soon as the seed of any valuable plant is thus procured, it will be proper to raise a part in the first British settlement; to send another part in the canister, filled up with the native earth; and to plant the remainder in such boxes as are here recommended.

The seed of the Cinchona, or Jesuits Bark, is contained in a capsule, that opens spontaneously when it arrives at maturity, and drops the seed, which is very small. This should be attended to. The seed vessels that are nearly ready to open, must be bound round with some thread or silk, on the tree, and gathered only some days afterwards.

It may not be amiss to observe here, that the Cinchona, or Jesuits Bark, was thought formerly to grow only where it was first discovered, on the mountain Cayanuma; it has, however, been found since at two hundred miles East, and may possibly
be

be much nearer to our possessions, if not an unobserved inhabitant of them.

As many persons who are desirous on their return from foreign parts to present their friends with something really curious, and may be at a loss what to enquire for in this branch of natural history, there is added here to a list of such other plants as are of consequence. The names of those which grow upon the coast of Malabar, are in the Malabar language; and the Malay is used for what trees are produced in the Indian Archipelago.

When persons, are employed to collect seed, it may be advisable to give them orders to break off a part of the branch of each tree, with the fruit, or seed vessel upon it; which may be shewn to other natives of the country, and be the means of learning whether one is imposed upon.

Such specimens, likewise, will be very acceptable to a botanist; particularly if there is a double set, the one with fruit, and the other with the flower in full perfection, that is, gathered when just expanded. These are easily preserved by being laid between sheets of cartridge paper, or the leaves of a book, and turned three or four times. Another way of drying them is, to spread some sand upon a loose board, and the specimens thereon, to cover them with more sand, and so place layers of sand and of specimens alternately; then leave them in the sun until their moisture is in a great measure exhausted; and afterwards, sloping the board, let the sand detach itself from the plants, which are gently to be taken up and laid in a book, or in a box, between papers.

Such specimens may prove very useful, in case of the seeds miscarrying; for, by inspecting them, a thorough knowledge of the tree is obtained, and that may lead to the discovery of it in some part of the British empire.

The

The mention here made of medicinal plants, may perhaps be serviceable to practitioners in physic abroad, who are generally too careless in enquiries of that nature, not adverting to the observation of an eminent physician, that *Barbæri plus ad augmentum medicaminum contulerunt, quam omnium ætatum scholæ.*

Though the manufactures of India have ever been famous for the beauty and stability of their colours, and the European nations have had opportunities enough of learning their methods of dying, we still know very little of the plants that are useful to them for that purpose. Not only this should be enquired after, but compleat specimens of them should also be sent over, with the names given them by the natives. We may either find them growing in our own Southern Colonies, or introduce the culture of them.

And there are not wanting in this country, many gentlemen, who will generously encourage the bringing over, not only the plants themselves, and seeds in a growing state, but likewise specimens, well preserved, either in the manner already mentioned, or in spirits, which is still better.

The attending to things of this nature may therefore, in a pecuniary light, deserve the attention of our countrymen abroad.

The countries to the North of Bengal, the environs of Pekin, in China, and the mountains in the warmest climates, in all likelihood produce many trees and shrubs that might bear our climate, and contribute to the ornament of our plantations and gardens. Seeds of them would be acceptable to every one who is possessed of a rural retirement: as well as to the nursery-men and gardeners in the neighbourhood of London, who will amply recompense any person who brings them any plants or seeds that are uncommon.

M A L A B A R.

MALABAR NAMES.	BOTANICAL NAMES.
Ambo.	<i>Mangifera.</i> The Mango. A species of this, which grows near Guzarat, is particularly esteemed. The fruit contains but a very small stone.
Boutua root, or Parcira Brava.	It is generally thought to come from Brasil; but Mr. Geoffroy was of a different opinion, and asserts, that the Portuguese receive it from Malabar, and not from Brasil.
Beetla-codi.	<i>Piper Betle.</i>
Buluschit.	<i>Arundo.</i> A species of cane or reed, thick-set with thorns, used for fences and forts.
Cadal-Avanacu.	<i>Croton Tiglium.</i>
Cadou.	A plant used by dyers.
Caipathambu & Samstravada.	} <i>Eugenia tracemosa.</i>
Caniram.	<i>Strychnos, nux vomica.</i>
Cattu-tirpali.	<i>Piper Longum.</i>
Caunga & Pac.	<i>Palma Areca Cateschu.</i>
Champacam.	<i>Michelia Champaca.</i>
Codago-pala.	<i>Nerium antidysentericum.</i>
Coddam-pulli.	<i>Cambogia gutta.</i>

LABAR NAMES.	BOTANICAL NAMES.
Eletârri & Etrimelli & Hil & Elachi in Guzerat, & Bengal.	<i>Amomum Cardamomum.</i>
Hummatu.	<i>Datura Metel.</i>
Jaca & Panaz.	<i>Saccus Manca of Rumphius.</i> Jacks.
Jamboli.	<i>Eugenia Malaccensis, or Jambosa domestica.</i>
Katou-karua.	<i>Laurus Cassia.</i> Wild Cinnamon. Fol. Malabathrum.
Katu, or Kudda Mulla.	<i>Nyctanthes Sambac.</i> Goa Jasmine, with a very large double flower, of an exquisite scent.
Manja-pumeram.	<i>Nyctanthes arbor tristis.</i> A Jasmine, which bears a flower of a very odoriferous smell, but of a short duration.
Bem-Nofi.	<i>Negundo.</i>
Molago-Codi.	<i>Piper nigrum.</i> Black Pepper.
Modira-caniram.	<i>Strychnos colubrina.</i>
Moringu.	<i>Guilandina Moringa.</i>
Muriguti, or Nanf- chera-Canfchabei.	<i>Hedyotis Auricularia.</i>
Natsjatam.	<i>Menispermum Cocculis.</i>
Nandi ervatum.	A species of the Arabian Jasmine. <i>Nyctanthes accuminata,</i> or <i>Jasminum Ara- bicum.</i>
Narum-panel.	<i>Uvaria Zeylanica.</i> Ebony.
Nelli-camaram.	<i>Phyllanthus Emblica.</i>
Oepata.	<i>Bontia germinans</i> or <i>Anacardium.</i> Marking Nut, or Malacca Bean.
Panitsjica-Maram.	<i>Garcinia Mangostan.</i>
Panel.	<i>Myrobalanus.</i>

MALABAR NAMES.	BOTANICAL NAMES.
Perin Toddali.	<i>Rhamnus fujuba.</i>
Pontaletfce.	<i>Lawsonia inermis.</i> Alhenna.
Shadidacalli.	<i>Euphorbia antiquorum.</i>
Schundapana, or Biralamado.	} <i>Palma vinaria.</i>
Syalita.	
Tamara.	<i>Nymphæa Nelumbo.</i>
Tjovanna.	<i>Ophioxylon Radix mustelæ.</i>
Tfiana kua.	<i>Costus Arabicus.</i>
Tfieru-Tfieurel.	<i>Calamus Draco Rotang.</i>
Todda-panna.	<i>Cycas circinalis.</i>
Waembu.	<i>Acorus Calamus.</i>
Vide-marum.	<i>Cordia myxa.</i>
Car-Elu & Schit-Elu.	<i>Sesamum orientale.</i>

The Maldiva Cocoa nut has been long considered in India as a great rarity. The particular island where it grew was unknown; but they were picked up now and then at sea, off the Maldiva islands. Last year one of our Captains chanced to touch at one of those islands, where they were produced in abundance. As their place of growth is at present known, it may be an easy matter to bring some over in a growing state.

C E Y L O N.

Katu-murungia, or Wattu-murunga. *Guilandina Moringa*, or *Nephriticum Lignum*.

Rametul, or Cametul. The Nay-Lelli or Eha-weya, has pretty much the same qualities, and is of the *Strychnos* genus. *Ophioxylon Serpentinum*.

Tirastawalu. *Convolvulus Turpethum*.

Kurundu. *Laurus Cinnamomum*, or True Cinnamon.

Gajapala or Nepalam & Wayapali. *Croton Tiglium*.

Cappathia. *Croton Lacciferum*.

Alopecuro. *Mentha auricularia*. A kind of water mint, which is said to cure deafness.

The *Ferula Assa foetida* grows in the province of Lahir; and perhaps in some parts of Bengal. This is a plant that deserves some attention. The *Assa foetida* is called by the Arabians *Altiht*.

PERSIA, ARABIA, ÆTHIOPIA, and ABYSSINIA.

ARABIC.

Ceban. *Aloes*. The best is produced in the island of Zocotra, in the Straits of Babel. It is conjectured that we have not the right species in the West Indies.

Mangas. The Mango. That of Ormus is reckoned particularly excellent.

Kingfish,

Kingisfch, Anjuden & Angeidan. The *Ferula Affia foetida* grows in the province of Chorasaan, on the mountains of Heraat; and likewise near the town of Congo in the province of Laar, in Persia.

Duum, or Mokhl. A kind of Palm, that produces the Gum Bdellium.

The undermentioned trees are likewise to be enquired after in Persia and Arabia Foelix.

Bodoin. Myrrha, or Myrrh. This plant is a native of Abexim in Æthiopia.

Louan. The Frankincense. Thus Olibanum. *Juniperus Lycia* in Æthiopia and Arabia.

The Gum Sagapenum. Æthiopia and Arabia.

Baleffan. The Amyris Gileadenfis, or Balsam of Mecca. Arabia Felix.

IN SIAM, MALACCA, SUMATRA, JAVA, BORNEO, CELEBES,
the MOLUCCA, and BENDA ISLANDS.

Names in the MALAY
language.

Accar Ticos. The Pule Pandac of the Javanese. *Ophioxylon radix mustelæ*. Grows on the Kiate mountains near Batavia.

Anxana. Lingoum rubrum. *Pterocarpus Draconis sanguis*. In Java, Sumatra and Malacca.

Balu badure. *Arundarbor spinosa* & *Vallaris*. In Java, Manipa, and Huaohela. This is a kind of Rotang, or Cane, spreading and thickset with thorns. Nothing

thing makes better fences. The Dutch plant it on their ramparts.

- Muncudu & Bencudu Lakki lakki. *Morinda*. In Java, Malacca, and the Moluccas. The roots are used for dying a fine red colour.
- Bulangam. *Radix Deiparæ*. The Rais Madre de Dios of the Portugese; who send great quantities of it to Goa, and have a high opinion of its medicinal qualities. In Malacca, Sumatra, and Java.
- Caju Sanga. The Ingas and Rangas of the Javanese. It produces a fine varnish.
- Caju Sawo & Nane. *Mimusops Kauki*. In Java.
- Caju Sommet & Caju Radja. *Arbor Regis*. Used for the cure of persons wounded by poisoned arrows. In Hitoes, and the lesser Cerama, where it is called Tittilaut and Pamali.
- Caju Ular. *Lignum Colubrinum*. *Ophioxylon Serpentinum*. The root is used for the same purposes as the Jesuits bark, for expelling worms, and against the bite of serpents: it is very bitter. In the island of Rotthe, and of Timor; called there Caju Naffi.
- Canari barat. This tree produces a gum, very like Gum Elmi. In Banda. On the high grounds of Lonthora.
- Capur & Cafur, in Arabic. The Camphire. The best is produced from a tree that grows in Borneo; of what genus is not known. This should be diligently enquired after.
- Champadaha & Tsjampada. The Saccus of Rumphus. A fruit generally esteemed in Amboina, where it grows.
- Coelat Sagu. *Palma Farinifera*, or Sagou Palm. In Malacca.

- Culitlawan.** A species of *Laurus*, nearly resembling the Cinnamon. The bark of it is in great request. It has more of the flavour of cloves than of cinnamon. In the Moluccas, the island of Batsjan, Java, and in Borneo; but what grows in the latter is preferred.
- Cumuc.** It grows in Java, and bears the *Cubeb* officin.
- Daun Caudal.** Caudallan & Saçandal. *Cordia Myxa Sebesten officinarum*. In the Moluccas.
- Daun papeda papua.** *Bubon*. It is very diuretic, and used for the cure of a gonorrhœa. In Ternate, where it is called Gura bata.
- Djerennang & Djernang.** Calamus Rotang. This plant produces the best *Sanguis Draconis offic.* In Java, near Bantam; and about Jamby and Patram Palimbang, on the Eastern part of Sumatra.
- Duryon.** Which bears a fruit that is much liked in the Indies. In Java and Malacca.
- Gamomong.** Hebenaster. *Diospiros*. In Sumatra, near Jambyam.
- Hampaddu Tanah.** *Ophiorhiza Mungos*. Called Mungo root by the Portuguese. A famous Medicine for the cure of persons bit by serpents. In Java and Sumatra.
- Ibu Tsjenki & Polong.** The ripe fruit of the Clove tree (another name is given to it before its maturity). In this state, the Dutch call it Antoffelen, or Mother of Cloves: likewise, Moernagelen. These should, if possible, be procured from Amboina, and planted immediately.

Jambo & Jambos. *Eugenia Malaccensis*: called by the French, Pomme rose. They have brought one species of this fruit from the East to the West Indies; but this is better. In Malacca.

Jambo Utan. *Jambosa Nigra*. Another species of the last article. In Java.

Indian Houfeleck. Growing upon stones, and the Kiati tree; of a delightful scent, and great medicinal virtues.

Katfiapiri. The flowers of this plant, on account of the sweetness of their smell, sometimes sell at two-pence a piece. In Java.

Kiffina. *Lignum Aloes*, Calambac officin. This is the famous odoriferous wood so precious in the East. It grows in the kingdom of Siam; in the provinces of Tsjampa and Bonna, near the sea; likewise in Cochin China, or Anamico, and in Junan. The Botanical characters are not known. Specimens of this in flower and fruit would be a great curiosity.

Lada. *Piper nigrum*. The Black Pepper. In Java, Sumatra, Borneo, &c.

Lanquas or Lancuaz. The Lawas of the Javanese, and the *Galanga offic.* In Java.

Louanjaoy. This is the Arabic name for the *Benjamin tree*, which grows in the woods of Malacca, and in Siam, Java and Sumatra. The Chinese call it Comingham.

Mangostan. The most excellent of all the fruits which India produces. Java, Malacca, and the Molucca islands.

Mangka & Manga; called Po by the Javanese. The Mango. An excellent fruit, well known. In Java.

- Maffoy. A tree that grows in New Guinea, near Namma Totto, Cajumera, and Lackayha. The Dutch purchase from the natives great quantities of the aromatic bark of this tree, which they sell in China.
- Mogori or Fula Mogori. It bears white flowers of a smell preferable to that of violets. In Java.
- The *Nardus officin.* About Batavia.
- Nibun Befaar. *Palma vinaria*, or Wine Palm. In the Moluccas, Celebes and Balya.
- Nanca. The *Saccus* of Rumphius. A very good fruit. In Java, Sumatra, &c.
- Pela. The *Myristica aromatica*, or Nutmeg tree; called in Ternate Gosora. It is principally produced in the Banda islands: the best is said to grow in Nyra.
- Piffang Batu. A kind of Banana, which bears seeds. In the Molucca Islands.
- Soccum Bidji & Kuller. The *Soccus Lanofus*, or Bread-fruit tree. Near the town of Bantam, in Java; and in Balega and Madura.
- Soccun Utan & Kullus Utan. The *Soccus Granofus*, or Bread-fruit seed-bearing tree, the parent of the former. In Amboina and the neighbouring islands.
- Soulamoe Caju, or Pohon. *Rex Amaroris*. Supposed to be a species of *Opbyoxylon*. A celebrated medicine in Ternate, where it is called Panawa-Maffou, Oepas Maffou & Panawar-Pipis. Grows in Java, and the Moluccas likewise.
- Tuba Bidji. *Menispermum cocculus offic.* In Celebes.
- Tonj Rak. *Anacardium offic.* Malacca Bean, or Marking nut. This tree produces an inferior kind of varnish.

varnish in great plenty, much used by the Chinese. Corfama in Cambodia.

- Trec. The Gum Lac tree. In Pegu and Martaban.
- Tsjampacca. *Michelia Champaca*. An elegant sweet-smelling flower. In Java, Malacca, &c.
- Tsjendana. *Sandal wood*. The best is to be found in Timora. There are some trees of it in the Eastern parts of Java; but not so good.
- Upas Lakki Lakki. *Laetaria salubris*. The root is of a bitter taste, and much used medicinally. In Java.
- Upas Bidji and Solon Pantey. The Caju-maas and Kellor-laut of the Javanese. *Sophora heptaphylla*. This root is a very celebrated medicine. It grows in the barren, sandy parts of Java and Borneo.
- Vidara. *Rhamnus fujuba*. The fruit is agreeable; and the root, which is bitter, is highly esteemed as a medicine. In Java and Malacca.

The tree that produces the walking Cane, is one of the plants we want, and likewise the Rattan.

There grows in the Philippine islands, a plant called Catalangay, or Cantara; and by the Indians, Igafar and Manaog: the seeds of which are known to the Spaniards under the names of Pepitas de Byfayas, Catbalogen and St. Ignatius's Bean. They have a high opinion of its medicinal virtues. It is used pretty much in the same cases as the Jesuits Bark. This, as well as the Nutmeg and Cloves, might be procured by means of our countrymen at Balambangan, on the Northern coast of Borneo.

C H I N A.

The Flat Peach.

China Root. *Smilax China.*

Som. *Sium Ninsi.*

Comingham. The *Benjamin tree.*

Tsjitick or Chekian. The thorny cane for fences.

Tsjen. Tsjeny. *Calambac*, or *Lignum Aloes.* In Sjampaha, under the dominion of Coinamen, or Quinam.

Tschet Zutt. *Sanguis draconis.*

Chi-tse. Hia-tfaa-tom-chom. Santfi.

Katya. Cava. Lechee, & Queefah; with other fine fruits, or beautiful plants, particularly from the Northern parts; also such as are used in dying, or in medicine, may be brought over here, so as to be highly advantageous in time, to our Southern colonies.

There is a great variety of Oranges and Lemons in the different parts of India, which might be propagated in our hot-houses, or conservatories. Perhaps all fruits of this kind, or that have a fleshy covering, might be brought over safely in jars, surrounded with powdered sugar.

C O C H I N - C H I N A.

Mr. Le Poivre, who was in this country not many years ago, informs us, that it produces, though but in small quantities, a cinnamon superior in quality to that of Ceylon; and for which the Chinese will pay three or four times more than for that which the Dutch bring them. He adds, that they have likewise the Aloes wood, which is the most precious perfume in the world: and

and that they cultivate a plant peculiar to their territories, called T'ai, which being fermented like Indigo, gives a durable tincture of a fine emerald colour. These plants would undoubtedly be of great value to our West-India colonies, could they be brought over and naturalized there.

O T A H E I T E.

The inhabitants of this island have no grain, pulse, or legumes. Nor do they need them, but for variety; possessed of that inestimable tree which bears the Bread-fruit, their real wants are easily supplied, as two of those trees suffice for the support of one man throughout the year. They reckon that an acre of land so occupied, affords more nourishment than any two acres of other produce; and these crops, bestowed by providence without the common tax of annual labor, are less precarious. It is, therefore an object of no small importance to our West-India planters. There are other plants in Otaheite which might be useful for the sake of change; such as some species of Bananas, and of ground, or root provisions, that are of a better kind than what our Colonies produce.

From NEW ZELAND.

The Chlamydia, or New-Zeland Hemp.

A M E R I C A.

The Cinchona, or Jesuits Bark. The true Winteranus Cortex, the Ipecacuanha, Jalappa and Zarsaparilla, have been already mentioned. The latter, and perhaps the three last, may be had from the Bay of Honduras.

Thee

The trees which produce the Balsams of Peru, and of Tolu, are not known to grow in our islands. The first is an inhabitant of Peru, Mexico, and Brasil; the other grows in the province of Tolu, near Carthagena. Both may be obtained without any great difficulty.

By the River of the Amazons there is a tree, called by the natives Chaoutchou, which produces the Elastic Gum. It grows also in many other parts of the Continent; from the French settlement of Cayenne, to the Bay of Honduras. This may be of value in our West India colonies: and even compleat specimens of it would be of service.

It appears from Don J. d'Ulloa's Account of Spanish America, that they have upon the Continent some fine fruits, which are not known in our islands. It may be worth while to enquire after them; and particularly for the Chirimoya, which he describes as bearing a flower of a most exquisite scent, which is succeeded by a delicious fruit. It grows in the territories of Quito.

The Paragua Tea, is thought to be a Cassine. We are not however certain of it. The seed might be got from Paragua by means of some of our merchants settled in Madeira, or at Lisbon; the expelled Jesuits might probably give us a more perfect knowledge of this plant.

MEDITERRANEAN SEA.

- Croton Tinctorium. Turnesol. South of France, about Narbonne.
- Quercus Coccifera. Alkermes Oak. In Languedoc, near Montpellier, about Toulon, and in several parts of Italy.
- Olea. Olives of different species, from France, Spain, and Italy.

Daphne Gnidium. Montpellier. Italy.

Pastinaca Opopanax. Italy. Sicily.

Nyctanthes Sambac. Kudda Mulla of the Hortus Malabaricus.

Jasminum Indicum Mali Aurantiæ foliis, flore albo, pleno amplissimo. This beautiful double flowering India Jasmin, was brought from Goa, in 1690, to the Grand Duke of Tuscany, who would not suffer cuttings or layers of it to be given to any body: but about thirty years ago the English embassador procured a plant of it, which died in the passage, either for want of proper care, or conveniences. The box with the figures of the Mangostan and Bread-fruit is recommended for a second attempt.

Lignum Rhodium. This is not known, but is supposed to be a *Cytissus*. It grows in the Morea.

Pistacia Lentiscus. Of the island of Chios. It produces the Gum Mastic, which is [a very valuable article. We are doubtful whether the *Lentiscus* in our green-houses is the same.

Quercus Ægilops. The *Avellanea*, or *Valenida* oak. The cups of the acorns are very large, and used here in dying. It grows in Greece and Natolia; particularly in the island of Zia, in the Archipelago.

Quercus Gallifera. Gall-bearing oak. This oak is not known in England. It grows in the neighbourhood of Smyrna and Aleppo. The acorns of this Oak, and of the others, must be sown

sown in the boxes, soon after they are gathered; without which precaution they will not succeed.

The *Rubia Peregrina*, or True Turkey Madder plant, is much wanted. And their cotton being of a different species from ours in the West Indies, some of the seed might likewise be useful.

In E G Y P T.

The *Mimosa Nilotica*, or Gum Arabic Acacia; called by the Arabs, Charad.

Arum Colocasia, or Ægyptian Wake Robin.

Momordica Balsamina. Balsam Apple.

Ficus Sycomorus. The Scripture Sycamore.

Cassia Senna. Than which nothing is more wanted.

The Calaf, or Dwarf Ægyptian Willow.

The Abdellavi. Cucumis.

The Egyptian Onions, (Basal) and Leeks (Karrat) are remarkably good, much preferable to any that grow in Europe.

There is a possibility of getting the seeds of the plant which yields the Myrrh, by the caravan from Ethiopia to Cairo.

Having given before, the best accounts that I could collect, of this Mangostan and Bread-fruit trees, I now come to point out a method of propagating them, in order to their being brought over in these boxes in a growing state. As to the Mangostan, we find that its seeds are often defective: care therefore ought to be taken to sow only such as are fresh and plump, and taken from the ripest fruit.

The

The nuts of the feed-bearing Bread-fruit tree ought to be sown in boxes, as I am persuaded that the tree without seeds has originally proceeded from it. But as the latter of these trees is of the greatest importance, it will be necessary to get the suckers, which I am informed grow around it; these likewise are to be planted in boxes, in order to take root.

If suckers cannot be obtained, the extremities of the boughs must be laid in the earth (as is practised by the gardeners about London); but if the boughs are so high as to render this impracticable, a stage ought to be erected, with a box full of rich earth; in which their extremities, or younger shoots, must be laid. These shoots must be nicked, and a small slit made in them upwards, which must be kept open by a thin piece of wood; they are to be secured in the earth by hooked sticks. It will be necessary to make an opening in that side of the box next to the tree, sufficient to let the boughs down into the earth, which may be secured in its place by a strip of cloth nailed across it to the outside of the box. By means of a bell glass, or leaded cucumber-glass, to be placed on the earth over the layers, they will strike root much sooner. There ought to be two inches at least of earth pressed down round the outward edge of the glasses, that no air may pass to the layers but through the earth.

This tree may likewise be propagated under bell or leaded glasses, by cuttings; but as it yields a milky juice, it is necessary that the great leaves be shortened, and the cuttings not planted for a day till their wounds be healed. Earth ought to be carefully raised round these glasses, as before; and the boxes placed in a shady situation till the cuttings take root.

Young plants of the Mangostan, or any other curious tree from the East Indies, may be raised in the same manner.

When these plants have taken sufficient root, they are to be transplanted, with as much earth as is possible about them, into the boxes in which they are to be brought over. The lower part of the earth, as has been before observed, in these boxes,

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ought to consist of rotten leaves, or wood turned to mold, the upper part of fresh loamy earth, like to that which in England is called hazel mold. When the plants have made some progress in the boxes, and given evident tokens of their being in a growing state, they may be safely put on board, where they must be placed in the best sheltered and most airy part of the ship. The surface of the earth in the boxes ought to be covered with rotten leaves, or moss, to prevent too great evaporation of moisture.

In case of cold, bad weather, it will be necessary to shut up the top and sides of the square-wired box, leaving open only that side where it is glazed.

N. B. Persons who intend to bring over the above plants, must provide themselves with a variety of bell and leaded glasses, which may be had from any of the seedsmen in London.

The most likely places to obtain these plants are Bencoolen or Batavia.

* * * It is recommended to captains, surgeons, &c. of East India ships, to carry out with them varnished tin specimen boxes, which may be procured from the eminent seedsmen; that, when they remain but a short time at any place, they may have it in their power to make cuttings of such rare plants as may occur; which must immediately be put in these boxes, to prevent withering. These cuttings ought to be about six inches long; and, if possible, with a small bit of the older shoot. When they are on board, they must be stripped of their lower leaves, and planted in rich earth, in the wire boxes, under bell-glasses, which must be surrounded with earth about the edges, as was before mentioned, to the height of two inches. These glasses may be from six to ten inches in diameter, and the same in height: they may be procured from the nursery-men, or seedsmen in London, and packed in fresh moss, in the wired boxes. The cuttings ought to be watered gently at first; when they have taken root, the air is to be admitted to them by degrees.

A D V E R T I S E M E N T.

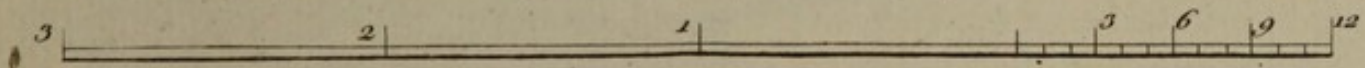
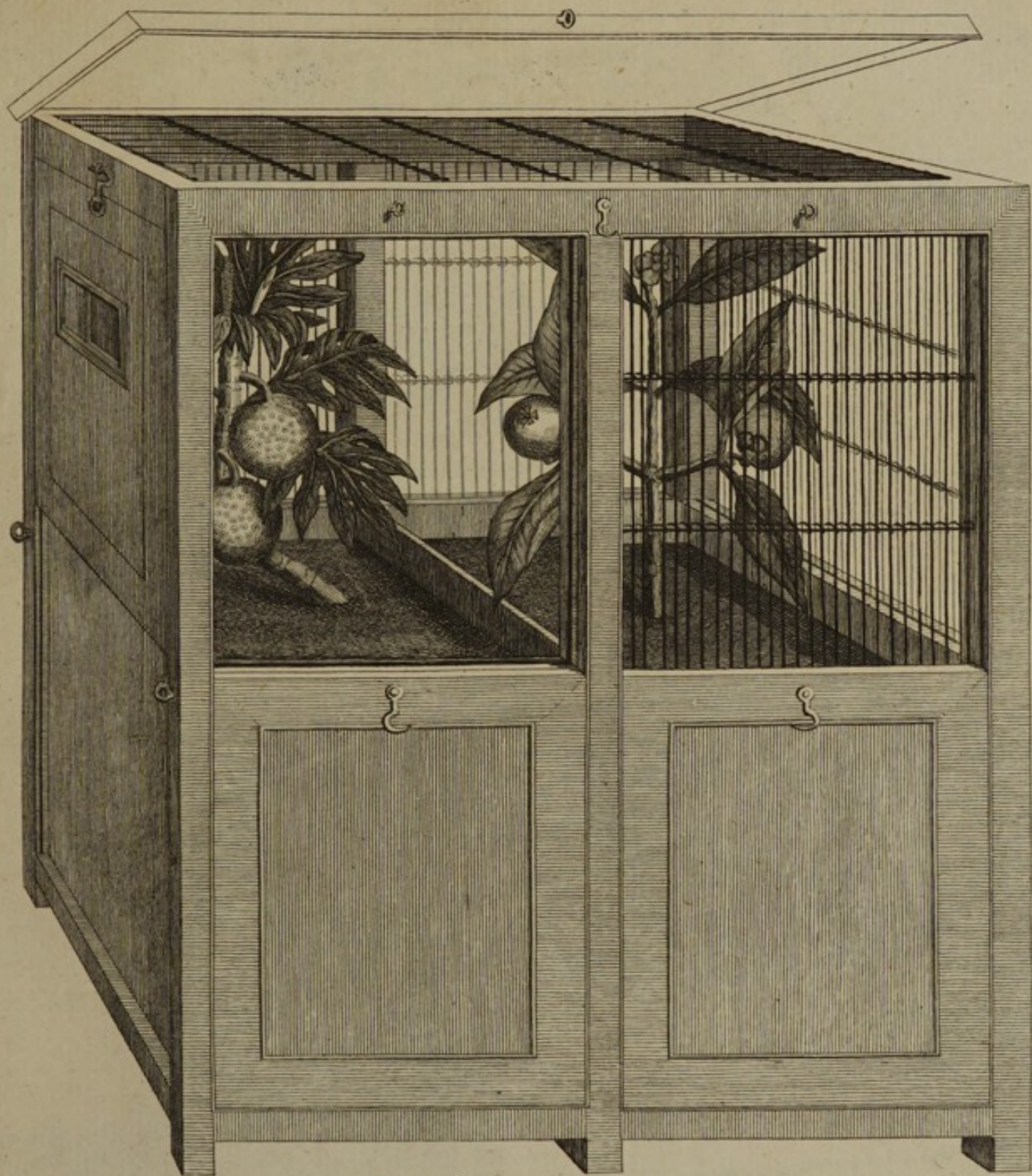
WE have the greatest reason to believe, from the favourable sentiments of the society of West India merchants, and of the agents for the West India colonies, who have already had this affair under consideration, that very handsome premiums will be offered by them to such persons as shall bring over in a healthy, growing state, plants of the Mangostan, Bread-fruit, or any other valuable trees that may be of real use to these colonies.—Proper notice shall be given in the news-papers so soon as any thing is determined concerning this matter by these gentlemen.

F I N I S.

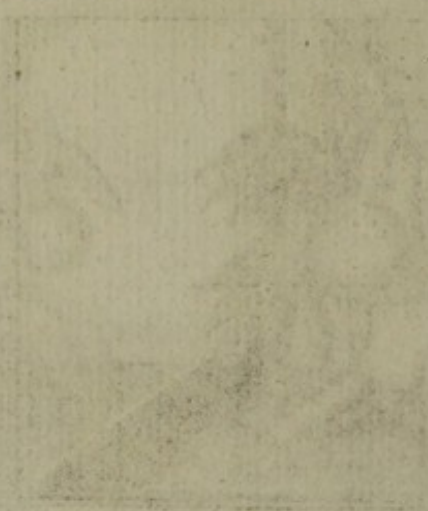
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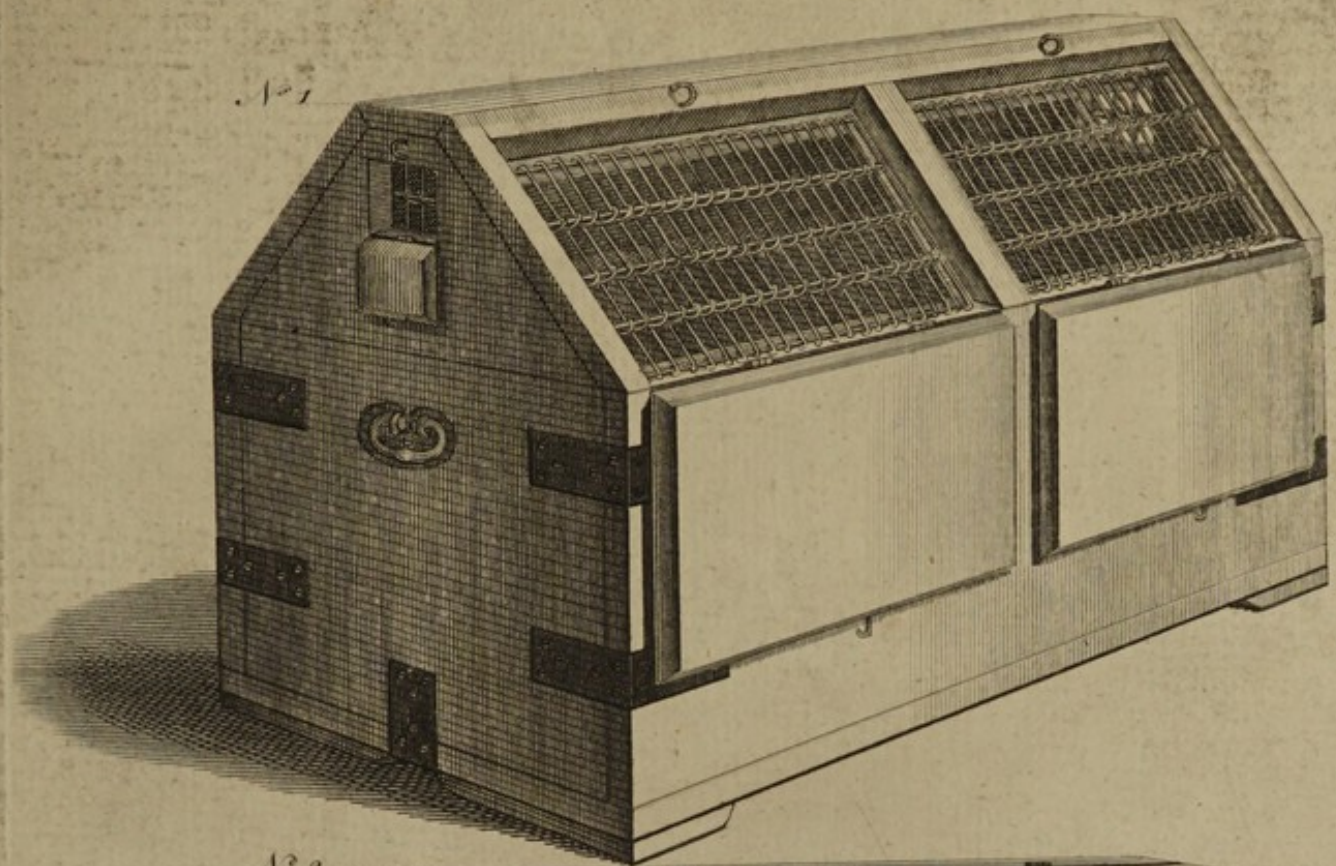
We have the greatest reason to believe, from the favourable
 testimony of the Society of West India Merchants, and of the
 Agents for the West India Colonies, who have already had the
 affair under consideration, that very handsome premiums will be
 offered by them to such persons as shall bring over in a healthy
 growing state plants of the Mangolian, Bread-fruit, or any other
 valuable tree that may be of real use to these Colonies. — Notice
 shall be given in the next paper to be seen as any thing is
 determined concerning this matter by their Gentlemen.

CONTENTS



*A Wired Case for bringing over the Bread Fruit Tree; the Mangostan
or any other usefull Plants from East India or the South Seas.*



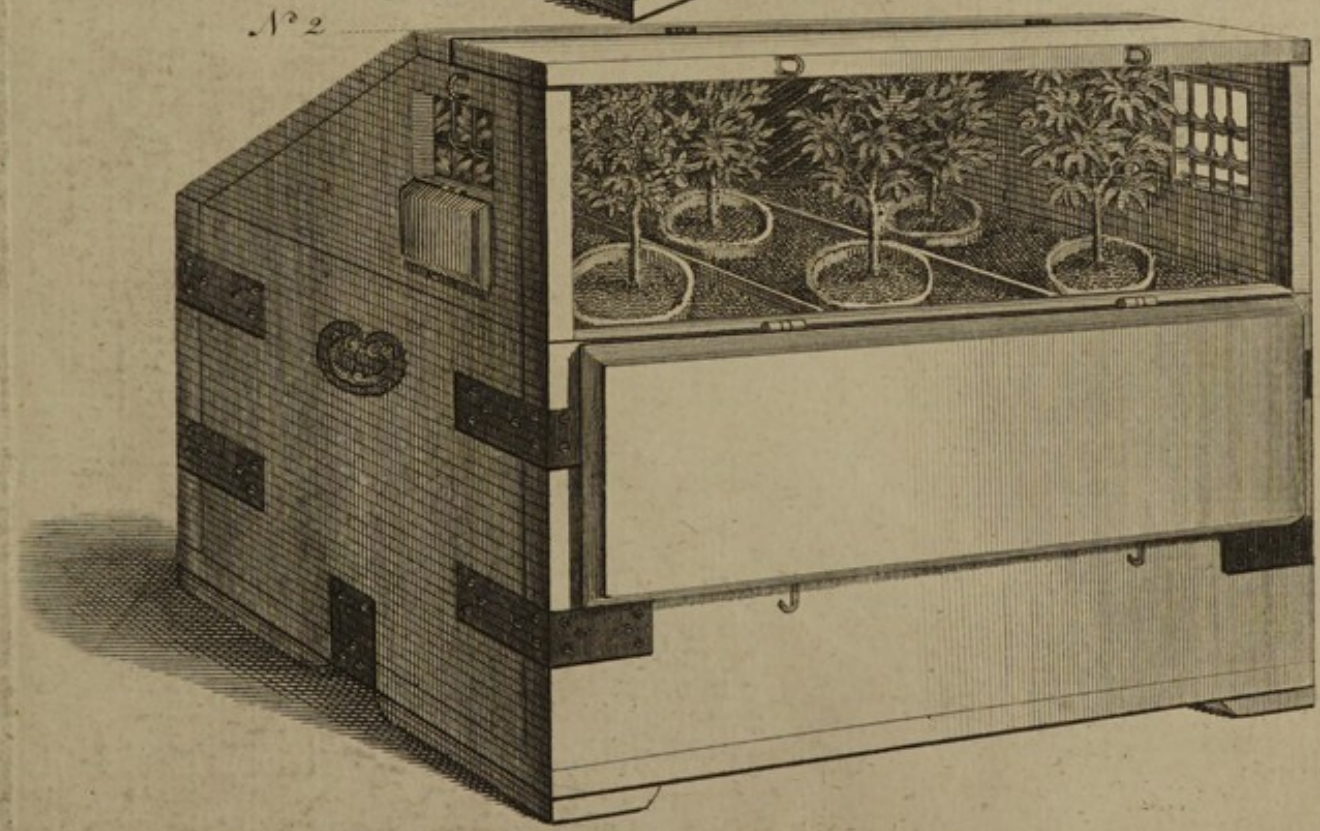


A Scale of Feet.

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Five Designs of Wired Boxes for bringing Plants from the Est Indies. N^o 1 for Sowing of Seeds, & N^o 2 for Planting Young Trees. As the seeds must appear above-ground; & the Young Trees have taken good Root, before the Boxes are put on Board: Published as the Act directs, April 9th 1774, by J. Ellis, Grays Inn, London.

