Arbor Yemenſis fructum Cofè ferens:

OR, A

DESCRIPTION

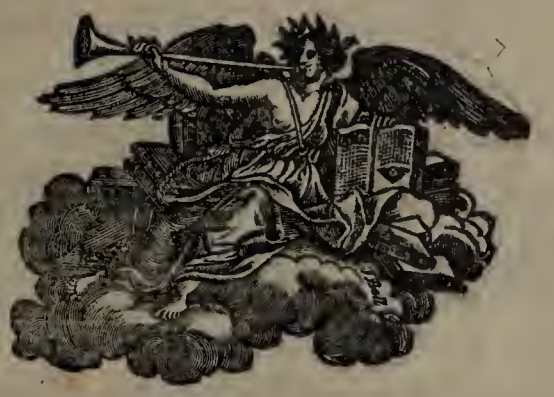
AND

HISTORY

OF THE

COFFEE TREE.

By Dr. *JAMES DOUGLAS*, Honorary Fellow of the Royal College of Phyſicians, *London:* And Fellow of the Royal Society.



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M, DCC, XXVII.

PREFACE.

IN my Botanical Deſcription of the Coffee Berry, *publiſh'd ſome Time ago, I acquainted the Readers with my Deſign of treating the whole Coffee Plant, as ſoon as I ſhould have convenient Opportunities of finiſhing the Obſervations about it which I had then actually begun to make. The Delays and Difficulties I have met with in going through this Enquiry, have been greater than I at firſt apprehended; and I cannot ſay I have as yet compleated it to my Satisfaction; however, what I now venture to communicate, will, I hope, in ſome meaſure gratify the Curioſity of the Publick, and be of ſome real Uſe to thoſe who have any Deſire and Opportunity of cultivating this delightful Exotick, of the Fruit whereof there is yearly made ſo vaſt a Conſumption among us.*

I begin by a Liſt of Names that belong to this Plant, and having made ſome neceſſary Reflections upon theſe, I give a large Account of the Loci Natales, *or Places wherein it is at preſent found to grow, as well in the Kingdom of* Yemen *in* Arabia Felix, *as the other Countries both in* Aſia, Europe *and* America, *thro' which it has now ſpread it ſelf, ſetting down what Informations I have been able to get concerning every Step of its Progreſs ſince it firſt found the Way out of its native Country. Having in the next place premiſed ſome general Obſervations about the Plant it ſelf, as it has been conſider'd by Botanical Writers, I go on to a particular Deſcription of all the Parts of it, taken from my own repeated Obſervations, carry'd as great a Length as it has hitherto been in my Power to do; and I conclude by ſuch Direc-*

tions concerning the Culture and Management of it, as I conceive can be of any Service to us here in England.

Upon each of these Heads I have been at Pains to collect what has been said by Authors before me; and besides the historical Facts which I set down from them, I have taken the Liberty to compare their Observations about the Plant it self with mine, as well to point out their Mistakes, as to explain the particular Discoveries made by each of them, in the same Order of Time in which they were published.

I propos'd to have given Figures not only of all the Parts of a full grown Plant, in an agreeable Variety of instructive Views, but also of the several States of it, from the Time it first appears above the Surface of the Earth, both with respect to Age, and the Seasons of the Year; but as I have not as yet been able to perfect these in any tolerable Degree, I chuse to refer them altogether till some more happy Opportunity shall offer; and then, together with a compleat Set of Figures, I shall be likewise in a Condition to lay before the curious Reader the History of the Invention and Progress of the Use of the Coffee Drink, both in Asia, *and in the Eastern and Western Parts of* Europe; *of the several Methods in which it has been prepar'd since it was first known; of the first Institution of Coffee Houses, and of the Virtues which either Opinion or real Experience have ascrib'd to it. I earnestly beg of all curious Persons to impart to me what Memoirs they may be furnish'd with relating to any of these Particulars, and I shall most willingly acknowledge the Favour in the Way I judge will be most agreeable to them.*

I conclude by returning my most sincere Thanks to those learned and worthy Friends by whom I have been in any measure assisted in the Prosecution of these Enquiries; and among the rest, I must acknowledge my self in a particular Manner obliged to those two curious Gentlemen, Mr. Parker *of* Heling, *and Mr.* Sherrard *of* Eltham, *to whose invaluable Gardens I had at all times free Access, whenever I found it necessary to view the Coffee Plants, which have continued for several Years to thrive there beyond Expectation; every Season bringing them a new Accession to their former Stock.*

A DE-

THE

DESCRIPTION

OF THE

COFFEE TREE.

CHAP. I.

The Names of the Coffee Plant.

THE Names that have been given by Authors to this Plant, to particular Parts of it, and to Preparations of theſe Parts, I ſhall diſtribute into three Liſts: The firſt, containing thoſe of the whole Plant; the ſecond, thoſe of the Fruit; and the third, thoſe of the Liquor made with this Fruit: And I choſe to place all theſe three ſorts of Names immediately after one another, that it may be more eaſy for thoſe who indulge themſelves in ſuch hiſtorical Curioſities to compare them together, in the manner that they will find done in the following Chapter, or in any other that they ſhall think convenient.

The whole Coffee Plant taken together, may, I think, be expreſs'd very juſtly in the following manner. The Botanical Reader will not be ſurpriz'd to find this Name in *Latin*; nor will the Length of it be judg'd unſuitable to the Cuſtom of Authors in that Science, on the like Occaſions.

Arbor Arabica Yemenſis,
Perpetuâ fronde virens.
Folio Caſtaneæ ſeu Lauri haud abſimili.
Flore Jaſminum vulgare quodammodo referente.
Monopetalo,
In quinque ſegmenta diviſo,
Albo,
Odorato.
Vaſculo ſeminali, ut plurimum, bicapſulari, nonnunquam tricapſulari, in fructum nuciformem abeunte;
E cujus nucleis, potus ille ſaluberrimus Coffee *vulgo dictus paratur.*

Or ſhorter, after this manner,

Arbor Yemenſis fructum Coffee Ferens.

I. The Names which have been hitherto given to the whole Plant, and which may be reckon'd ſynonyma to that which I have pitch'd upon, are theſe.

Bon vel Ban Arbor.	J. B.
Euonymo ſimilis Egyptiaca, fructu baccis Lauri ſimili.	C. B.
Arbor Bon cum fructu ſuo Buna.	Parkins.
Buna Alpini.	Chabr.
Café.	Bernier.
Bon vel Ban, *Bonchum, Buncho, Buncha,* *Elkarie Egyptiorum,* *Cachua Arabum.*	Blegny.
The Coffee Tree.	Plunknet.
Coffee Frutex ex cujus fructu fit potus.	Raii.
Coffee Arbor.	Dale.
Coffee Shrub.	Sloane.

Arbre

Arbre du Buun.
Arbre qui porte le Café. — Galand.

Arbor Perſica.
Filix Arabica.
Bannu & Banchos Arabum. — Lang.

Caffé ou Coffé. — Tournef.

Jaſminum Arabicum, Caſtaneæ folio, flore albo, odoratiſſimo, cujus fructus Coffy in officinis dicuntur nobis.
Jaſminum Caſtaneæ folio, flore odoratiſſimo, rubro fructu qui Coffé, duro. — Commelin.

Gelſiminum Arabicum foliis Caſtaneæ, flore albo ingenti odoratiſſimo.
Arbor cofè ferens. — Volkam.

L'Arbre du Café ou Cafier.
Jaſminum Arabicum Lauri folio cujus ſemen apud nos Café dicitur.
Jaſmin d'Arabie, a feuilles de Laurier, & dont la ſemence nous eſt connu ſous le nom de Café. — De Juſſieu.

Arbor Meccana. — Cheyn.

II. Names of the Coffee Fruit.

Bunnu.
Buncho Avicennæ.
Buncha Rhazis. — Rauwolf.

Bon vel Ban. — Alpin.

Buna.
Elcane. — Clus.
Buncha Rhaz. *ex* Rauwolf. — *Cachu.*

Cachu. *Bunchi.*	Cotovic.
Bunchos. *Bunnum* Rauwolf. *Granum quo Turcæ ſomnum fugant* Plater.	J. B.
Cahvé.	Lavalle.
Coffee. *Cophie.* *Cophy.* *Coffé.*	Rumſey.
Ben & Bun.	Banes.
Elcave.	Salmaſ.
Coffee Berry.	Grew.
Coffa.	Mundy.
Café.	Bernier.
Cahoueh Arabum. *Caveh Turcarum.*	Du Four.
Baccæ Coffee. *Coho Seeds.*	Berlu.
Coffee, in Latin *Coava.*	Pechey.
Boncha. *Boncho.* *Elkarie.*	Pomet.
Semeu Coffee.	Herman.
	Buun.

Buun.	Galand.
Terris faba miſſa Pelaſgis.	Vanier.
Coffi.	N. Lemer.
Coffee Behnen.	Lang.
Cahoven.	Volkam.
Cofea.	Quincy.
Faba Meccana quam Coffeam vocant, / *Fructus Arboris Meccanæ.*	Chyne.

III. Names of the Liquor or Drink prepared with the Coffee Fruit.

Chaube.	Rauwolf.
Caova.	Alpin.
Choana.	Paludan.
Cave.	Bellon.
Cahua, Cava Italor.	Cotovic.
Coffa.	Sandys.
Cahué.	Lavalle.
Cahwæ.	Olear.
The Turks berry Drink.	Parkins.
Caffé.	Tavernier.
Cophie. / *Turks Phyſick of Cophie.* / *Cophy.* / *Coffee.*	Rumſey.

Cabwa.	Pauli.
Cahue seu Café.	Banes.
Coffe potus.	Willis.
Café.	Bernier.
Cavet. *Cahuæ.* *Choana.* *Cahveh.*	Du Four.
Cauphe.	T. Blount.
Coava. *Caphé.*	Blegny.
Coffi.	Bontekoe.
Gahouah Arab.	Galand.
Gaouhe Turcarum *Coffé Anglorum & Batavorum*	De Juſſieu.

CHAP.

CHAP. II.

Etymologia.

BY theſe Names, and no more, that I can find, have the Coffee Plant, the Fruit thereof, and the Liquor made with that Fruit, been expreſſed. The Liſts I have here given of them, tho' they cannot I believe be of much ſolid Uſe, may perhaps entertain the Curioſity of ſome of my Readers; and ſince I have been at the Trouble of collecting them merely with that View, it will be ſtill worth while to add the few following Obſervations about them.

1. Tho' ſome of theſe Names are common to the whole Plant, Fruit, and Liquor; there are many which are either peculiar to each, or which belong only to two of them; and therefore it was moſt natural to ſeparate them into three diſtinct liſts, inſtead of throwing them all into one confuſed heap, as has been the general practice of Botaniſts hitherto. Mr. *Ray* ſhall ſerve for an Example of this.

The Name he gives the Plant, is this, *Coffee frutex ex cujus fructu fit potus.*

The Synonyma or Names he ſets down from other Authors are theſe.

Bon vel Ban Arbor, J. B. Item, *Buna, Bunnu, Bunchos Arabum ejuſdem. Bon Arbor cum fructu ſuo Buna*, Park. *Euonymo ſimilis Egyptiaca fructu baccis Lauri ſimili*, C. B. *Bunnu*, Rauwolf. *Buna ex qua in Alexandria fit potio*, Cluſ.

Never was there a Liſt of Synonyma compiled with leſs Judgment than this; for in the firſt place, it is defective by above four parts in five, as will appear by comparing it with mine; and Defects of this kind are more inexcuſable in Mr. *Ray* than in any body elſe; for as he has done little any where but collect from other Authors, the leaſt that could be expected from him, is, that his Collections ſhould be perfect, after ſo many Years Practice.

Again, the Order of Time, in obſerving which with Exactneſs, the greateſt Beauty of ſuch Compilations certainly conſiſts, is entirely neglected; *Rauwolfius* and *Cluſius* are placed after the two *Bauhini* and *Parkinſon.*

But, which is moſt to my preſent purpoſe, above half his Synonyma are falſe, *J. B.* never called the Coffee Plant *Buna,*

Bunnu, Bunchos Arabum; *Rauwolfius* never called it *Bunnu*; nor *Cluſius*, *Buna*. It is the fruit only they have expreſſed by theſe Words, and never the Tree that bears it; and yet Mr. *Ray* has thought fit to rank them all as ſo many Synonyma for his *Coffee frutex*, that is, as Names given by theſe Authors to the whole Plant.

Later Botaniſts have been ſo far from not falling into this laſt mentioned Inaccuracy of Mr. *Ray*, that they have carried it a great deal further. This Author has only confounded the Names of the Tree and Fruit: but in another, I find the *Coava Egyptiorum* from *Alpinus*, placed as a Synonymum for the *Jaſminum Arabicum, &c.* of *Commelinus*; that is, a Name never applied by *Alpinus* to any thing but the Coffee Drink, made to ſignify the Tree which produces the Fruit of which that Drink is made.

2. That we may be able to take a more particular View of the Names contained in the three foregoing Liſts, it will be convenient to ſubdivide each of them into ſuch as Travellers tell us are uſed in the Eaſtern Countries, and thoſe which the *Europeans* have either borrowed from thence, or invented of their own, ſince Coffee was known amongſt them.

As to the firſt of theſe, I am ſurprized to find that no Traveller, except Monſieur *Galand* alone, has given us any Name by which the Coffee Plant it ſelf is expreſſed by the *Arabians*, or any other Eaſtern People: The whole Liſt we have given of theſe Names, except that of the *Buun* Tree, from *Galand*, has been coined in *Europe*, by thoſe who knew nothing of the Plant, but only that it produced the Coffee Fruit; and they who have expreſſed it otherwiſe than by ſuch a Circumlocution, have only diſcover'd their own Ignorance, and the little Care with which they have read the Books of Travels quoted by them. *Chabræus*, *Blegny* and *Langius*, are of this number; but *J. B.* and *Parkinſon*, who likewiſe uſe Oriental Words in expreſſing the whole Plant, have kept within due Bounds.

3. The Eaſtern Names of the Fruit, are either ſuch as have ſome Relation to *Bunchum*, *Bon*, or *Cahouah*.

The firſt Kind, tho' there be perhaps ſome of them that are really Oriental Words, as *Bunchum* its ſelf is, are not however to be reckon'd Eaſtern Names for the Coffee Fruit; becauſe they have only been apply'd to that upon the Suppoſition of its being known to *Rhazes* and *Avicenna*, and called by them by the Name of *Bunchum*, or ſomething like it, which we ſhall ſhew to be a Miſtake. Two *Perſian* Phyſicians were undoubtedly the firſt who fell into it; but it is from *Rauwolfius* that it has been handed down among European Writers.

Bon,

Bon, or rather *Buun*, and the other Names which conſiſt of the ſame Conſonants with it, ſeem to be thoſe by which the Fruit has been moſt generally expreſſed in the Eaſt; but whether ſome part of the Variety that is to be found in them may not be owing to the Miſtakes of Travellers, I leave to the Judges of the Eaſtern Languages to determine. *Salmaſius* has, I think, given us one plain Inſtance of it in *Alpinus*, and Monſ. *Galand*, (if we will believe *La Roque*) another in *Baneſius*, tho' a *Syrian* by Birth.

The third Sort of Names for the Fruit, we ſhall conſider together with thoſe of the Liquor, they being derived from thence.

4. Concerning theſe, the following Remarks from Authors are worth ſetting down.

'It will hardly be believed, ſays Monſ. *Du Four*, that tho' Coffee has been drank for ſo many Years paſt, we ſhould ſtill be ignorant of the true Name of it. The Authors who have written upon this Subject differ from one another as much in the Names they give this Liquor, as in the Qualities they aſcribe to it. Some tell us that before it be ground it ought to be called in *Latin*, *Bunchum*; and in *French*, *Bon*; which they pronounce, *Bun*. After it is reduced to Powder, there are a great many other Names given it, which have been already ſet down.) But Monſ. *D' Arvieuſe*, the *French* Conſul at *Aleppo*, who had been at great pains to inform himſelf while he remained there, tells me that the true Name of the Coffee Bean, among the *Arabians*, is *Cahoueh*, the *Arabians* having no *v* Conſonant; but the *Turks*, and other Eaſtern People, pronounce it *Cahveh*; and that Word is derived from *Cohuet*, which ſignifies Strength or Vigour; and the Coffee Fruit is ſo called becauſe of the Effects aſcribed to it.

This Etymology did not, however, ſatisfy Monſ. *Galand*; as appears from the Account that *La Roque* has given us of that Part of his Book. 'Monſ. *Galand*, ſays he, begins by eſtabliſhing the original and proper Signification of the Word *Coffee*; and according to him it comes from *Cahveh*, as it is pronounced by the *Turks*, with an *v* Conſonant; and it is the ſame thing with *Cahouah*, amongſt the *Arabians*, who pronounce their *v* Conſonant as the *Italians* do their Vowel *u*.

'*Cahouah* is the Infinitive of a Verb, and ſignifies to loath, or to have no Stomach; and it is likewiſe one of the different Names which the *Arabians* give to Wine, becauſe they think the Exceſs of it produces theſe bad Effects.

From this Signification of Wine in particular, the Word *Cahouah* has been extended to all ſorts of Drink; and therefore this Word is not uſed either for the Tree or Fruit, but only for the Drink made of it.

The Fruit is called *Buun*; and the Tree, the *Buun Tree*.

Monſ. *Galand* goes on to remark ſome Miſtakes of *Baneſius*; and then adds, That if that great Profeſſor could be miſtaken in his own Language, it is but juſt to excuſe Monſ. *Du Four*'s Friend, who ſays that *Cahoueh* is the *Arabick* Word for the Coffee Fruit; which is rather a *Turkiſh* Pronunciation than *Arabian*, ſince there is no *e* in their Alphabet. Moreover, that Gentleman has confounded the Term *Caouä*, with that of *Cahouah*; tho' they are both written and pronounced very differently.

If this Account of the Original and true Signification of the Word *Cahouah* be juſt, as there is no Ground to doubt of either, conſidering both the extraordinary Skill of that Author in the Oriental Languages, and the long Stay he made in the Eaſt; we need be at no Loſs what Judgment to make of all the Eaſtern Names that have been given to the Coffee Drink; they may all be eaſily derived from the *Arabick*, *Cahouah*; and the Variety that is to be found in them is owing either to the real Changes they have undergone in the Mouths of the different Eaſtern Nations, *Perſians*, *Egyptians*, *Turks*, *&c.* or to the Miſtakes of Travellers, moſt of whom being ignorant of theſe Languages, have not always equally well expreſſed, in Writing, the Sounds by which they heard this Liquor ſignified in the different Countries of the Eaſt. Neither are ſuch Miſtakes to be wondred at, conſidering how common they are even among the different Nations of *Europe* at this Day; whoſe Languages have a nearer Relation to one another, than the Eaſtern Languages have to any of them. Let a *French* Man, for inſtance, hear forty *Engliſh* Words diſtinctly pronounced one after another, ſeveral times over, it is forty to one at leaſt, that he does not write two of them right. There are Examples enough of this in all the *French* Writings, where there is occaſion to mention any *Engliſh* Words; and we have one in the foregoing Liſt. Monſ. *De Juſſieu* tells us very gravely, that both the *Engliſh* and *Dutch* call this Liquor *Coffé*: with a ſingle *é* accented; only for this Reaſon, becauſe he has heard the Word *Coffee* pronounced nearly the ſame way as a *French* Man would do, had it been ſpelt after his manner.

From Monſ. *Galand*'s Etymology we learn likewiſe, that all the Words by which the Fruit it ſelf has been ſignified, that have any Reſemblance to *Cahouah*, which make the third Claſs of the

Eaſtern

Eaſtern Names of it, are not to be looked upon as ſuch, being never uſed in that Senſe by the Orientals.

5. From theſe Eaſtern Names are derived thoſe by which all the *European* Nations do ordinarily expreſs both the Coffee Plant, Fruit and Liquor. As we had the firſt Knowledge of theſe things from them, it was natural to take their Names along with them, and only by degrees new mould them a little, according to the Genius of each particular Language into which they were adopted.

The *Turkiſh* way of pronouncing *Cahouah*, *viz.* with an *v* Conſonant, as we have heard, occaſioned firſt the writing of it here in *England* with *ph*, and afterwards with *ff*; which is equivalent thereunto. The *ca* we find changed into *co*, in *Sandy*'s Time; *i. e.* in the Year 1628, in which his Travels were publiſhed; and it was near the Year 1659, that is, ſeveral Years after there were publick Coffee-houſes in *London*, before the Termination *ee* was fully ſettled; for we find Judge *Rumſey* and Sir *Henry Blount* writing this Word ſometimes with *ie*, ſometimes with *ee*; but *Howel* always uſes the latter; and it has continued ever ſince his time. Sir *Thomas Pope Blount* writes it ſometimes *cauphe*, having found it ſo written, probably, in ſome old Book: From whence there is ground to conclude, that the *Turkiſh ca* was firſt changed into *cau*, which being pronounced pretty much the ſame way as *co*, this laſt, as being ſhorter, came at length to be uſed inſtead of it.

Variations of the like kinds, and by the like degrees, may be obſerved, no doubt, in the other modern *European* Languages: But it is not our preſent Buſineſs to enquire further into them.

As Coffee was unknown during all the time in which the *Latin* can in any Senſe be ſaid to have remained a living Language, we are not to expect any true *Latin* Word for it: To ſupply that Want, Authors who affect to find *Latin* for every thing, how much ſoever unknown to the *Latins* themſelves, have had Recourſe to the two univerſal Engines, which are always ready in time of Need, *viz.* inflecting the laſt Syllable of this Word into a *Latin* Termination, and expreſſing it by long Circumlocutions, which ought rather to be called Deſcriptions than Names. Of the firſt kind is the *coffea*, *æ*, of Dr. *Quincy*, and the *coava* of *Pechey*. The former is allowable enough, had there been any Neceſſity for it; but the other is owing either to the Stupidity of its Author, or uſed with a Deſign to impoſe on the Reader: For what can be concluded from theſe Words, *coffee is in* Latin, Coava; but either that *Pechey* took *coava* for a genuine *Latin* Word himſelf, or had a mind to perſuade other People that it was ſo?

It

It is needleſs to enumerate the various things that have been made uſe of by Authors, as a Foundation for the Circumlocutions by which Coffee, and eſpecially the Coffee Plant, has been expreſſed: It is ſufficient to remark, That thoſe moſt in Vogue now-a-days have been taken from the Agreements obſerved therein with theſe Parts of the Jeſſamins which Botaniſts principally attend to in diſtributing Plants into Claſſes, Sections, Genera, *&c.* by this means *Jaſminum* is become the generical Word for it; and the reſt of the Circumlocution is only a Catalogue of Differences by which it is diſtinguiſhed from the other Species of Plants ranked under the ſame Genus with it; or a ſort of Deſcription of what is thought to be moſt remarkable in it.

CHAP. III.

Locus Natalis.

IT would be to no Purpoſe to take Notice of all the Miſtakes that both Botaniſts and Travellers have been guilty of in determining the Countries where Coffee grows: Some have brought it from *India*, others from *Perſia*, others from *Egypt*, and a great many from that Country of *Arabia* where *Mecca* is ſituated; but it is now paſt all Diſpute, that Coffee grows no where in *Arabia*, but in the Kingdom or Province of *Yemen*, in *Arabia Felix*; nor any where elſe in the World, except in the Iſlands of *Java* and *Bourbon*, and ſome other Places where it has begun of late to be cultivated by the Induſtry of the *Dutch*, *French* and *Engliſh*; of which in the proper Place.

This Kingdom of *Yemen*, as all the other Parts of the vaſt Territories of *Arabia*, is ſtill too much unknown for the Reader to expect any particular Account of it; Monſ. *De Liſle* has been at all poſſible Pains to give us an accurate Map of ſo much of it as he could get any tolerable Informations about, either from the *European* and *Arabian* Geographers, or from the *French* Officers who were upon the two Expeditions lately made from *St. Malo's* to *Moca*; of which Monſ. *La Roque* has given us a very compleat Relation; yet even that is very imperfect.

However, that I may not leave my Readers altogether unacquainted with the Country to which all the World is beholden for the Fruit which I am now deſcribing, I have thought it pro-

per to insert here a short Abstract of a Journey from *Mocca* to the Court of the King of *Yemen*, undertaken by some Persons in the second of the forementioned Expeditions; and likewise published by Monsr. *La Roque*.

The two Vessels of which this second Expedition consisted, arrived at *Mocca* on the 11th of *December*, 1711; and soon after, the King of *Yemen*, of which Country *Mocca* is now the principal Sea-Port, fell sick. His new Minister, who at the time of the former Expedition had been Governor of that Place, extolled the Skill of the *French* Physicians, and advised him to send for those that he heard were lately arrived. The King consented, and charged *Cheick Saleh* himself, (that was the Minister's Name,) with this Affair; who thereupon immediately dispatch'd two Deputies to the *French* Captains, with a very obliging Letter, signifying the Subject of their Commission.

The Captains, after some Deliberation, concluded at last that this was a fit Opportunity to shew the King some Samples of the Grandeur of *France*, and to discover as much as they could of the Country to which they were then establishing a Trade. Hereupon the proper Persons were pitched upon; and having receiv'd their Instructions from the Commanders, and likewise some Presents for the King, they left *Mocca*, well mounted on horseback, the 14th of *February*, 1711-12. Their whole Company consisted of about twenty Persons, under the Guard of a Troupe of Horse, their Baggage and all Necessaries for their Journey being carried by Camels, and other Beasts of Burthen.

They set out about four a Clock in the Afternoon, and travell'd all the rest of that Day, and a good Part of the Night, and about three in the Morning they arrived at *Mosa*, a little Country Town ten Leagues distant from *Mocca*.

The next Day they travelled fifteen Leagues, to *Manzary*, where there being only six or seven Houses, they passed the Night under Palm and Poplar Trees.

For eighteen Leagues further the Roads were exceeding good, the Country being almost one continued Plain, at the End of which lies *Tagus*, a Town much renowned amongst the Inhabitants, and strongly walled, with a Castle which commands the whole Town. The Governor was Son to the late King, and the Deputies did not fail to pay him their Respects. He received them very civilly, and treated them, amongst other things, with Coffee, *a la Sultane*; a Drink made of the Involucra of the Fruit only, and much in Request all over that Country.

From thence they continued their Journey towards *Manzuel*; and about ſix Leagues from *Tagus* they had the Pleaſure of ſeeing Coffee Trees for the firſt time; and theſe paſs for the moſt beautiful and beſt cultivated in all *Yemen*.

Manzuel has nothing remarkable; and from thence they went in two Days to *Yram*, lying the firſt Night under the Trees.

After they left that Town, they found the higheſt Mountains which are in the Kingdom; and the Country, which till then was pleaſant enough, tho' moſtly mountainous, began to be dry and barren; no Trees were to be ſeen there, nor Valleys full of Coffee Plantations, as they had hitherto frequently met with.

From *Yram*, they went to *Damar*, another conſiderable Town at fifteen Leagues Diſtance. The Roads were uneaſy, and the Heat exceſſive, till after Sun-ſet.

At *Damar* the Scene changes again, and a very fine Country begins to open. *Muab*, the Reſidence of that King, is but a quarter of a League from thence, and the Deputies arrived there the eighth Day after they left *Mocca*; having travelled above an hundred and twenty Leagues almoſt conſtantly to the North Eaſt.

Their Reception, and all that befell them during the three Weeks they remained there, I leave to be conſulted in the Author, there being but little of that which has any Relation to my preſent Deſign.

The Town of *Muab* is remarkable for nothing but the Prince's reſiding there. One of the Suburbs is wholly inhabited by *Jews*, who are never allowed to lie within the Gates. The Air is very good. Between nine in the Morning and four in the Afternoon the Heats are great; but it is pretty cool both before the riſing and after the ſetting of the Sun.

The Soil about the Town appear'd every where very good. All the Plains were ſown with Wheat and Rice; and the little Hills and Valleys were planted with Coffee Trees, Vines and Fruit Trees.

There was nothing remarkable in the King's Gardens, except the great Pains taken to furniſh it with all the Kinds of Trees that are common in the Country; amongſt which there were Coffee Trees, the fineſt that could be had. When the Deputies repreſented to the King how much that was contrary to the Cuſtom of the Princes of *Europe*, who endeavour to ſtock their Gardens chiefly with the rareſt and moſt uncommon Plants that can be found. The King returned them this Anſwer, That he valued himſelf as much upon his good Taſte and Generoſity as any Prince in *Europe*; the Coffee Tree, he told them, was indeed very

common

common in his Country, but it was not the leſs dear to him upon that account; the perpetual Verdure of it pleaſed him extreamly; and alſo the Thoughts of its producing a Fruit which was no where elſe to be met with; and when he made a Preſent of that that came from his own Gardens, it was a great Satisfaction to him to be able to ſay that he had planted the Trees that produced it with his own Hands.

The Kingdom of *Yemen* is not hereditary, but he that has had the Art of making himſelf the ſtrongeſt Party during a King's Life, is commonly his Succeſſor; and the King takes all poſſible Care to gain every Body in Favonr of his Children or neareſt Relations.

The King is independent, being tributary to no other Prince; and as a Proof of that, while the Deputies remained at *Mouab* there arrived Ambaſſadors to him from the Grand Seignior. It was given out that it was only an Embaſſy of Ceremony and Compliment; but the true Reaſon was to perſuade the King, not to allow the *Europeans* the Liberty of exporting Coffee by the *Red Sea* directly, which was a great Loſs to the *Turks*.

The King being at length perfectly recovered, the Deputies took Leave of that Court, and returned to *Mocca*; they came back the ſame Way they went, but not being in ſo great a Hurry, they had more Time to make Remarks concerning the Country.

The greateſt Part of the Mountains are barren, being burnt up by the Heat of the Sun. They produce no great Trees, but upon the lower Sides of them there are Plenty of Coppices. They met with red Partridges bigger than ours, Quails and Turtle Doves in abundance, which the *Arabians* never offer to ſhoot. The Foxes and Monkeys were ſo tame, that let a Man go as cloſe to them as he pleaſed, they never offered to run away.

But the greateſt Curioſity of our Travellers, upon their Return, was to obſerve every thing that relates to the Coffee Plantations, and to inform themſelves of the *Arabians* concerning them.

Beſides the Coffee Trees, there were to be ſeen in the ſame Plantations with them, a great many other Sorts of Fruit Trees, ſuch as Peaches, Apricocks, Almonds, Citrons, Oranges, Figs, Apples, *&c.*

They were informed, that beſides the Towns which they ſaw, there were others of very great Note, amongſt which is *Sanaa*, formerly the Capital of the whole Kingdom, and the Seat of their Kings. There are likewiſe ſeveral of the great Roads of the Kingdom paved for above an hundred Leagues together.

Theſe are the Particulars contain'd in this Relation; which may ſerve to give at leaſt ſome general Notion of the Country which produces Coffee. The true Extent of it is not as yet known; and much leſs in what Parts of it Coffee Trees grow, or how much Land is yearly employed for theſe Plantations. Mr. *Bradley* tells us, that the greateſt Part of them are a few Days Journey inland from *Mocca*, and near the City *Sanaa*, about twenty Degrees of Northern Latitude. And in another Place, that the Coffee Tree is found from the Latitude of eighteen to twenty Degrees North.

We ſhall hear ſomething more determinate about this from Mr. *De la Morveille*, in what he has ſaid about the Coffee Trade. But as the Coffee Plant has now, notwithſtanding all the Pains the *Arabians* have been at to prevent it, found its Way to other Parts, and is there cultivated with good Succeſs; an Account of the Manner in which that happened, and what have been the Conſequences thereof, belongs likewiſe to the Hiſtory of the *Locus Natalis* of this Plant. And here I muſt begin by obſerving, that by a late Account ſent to Mr. *De Juſſieu* at *Paris*, from one Mr. *Gaudron*, an Apothecary at *St. Malo's*, publiſh'd in the Hiſtory of the Royal Academy, it would ſeem that the Coffee Plant, or at leaſt one Species of it, was a Native of the Iſland of *Bourbon*, near *Madagaſcar*, as well as of the Kingdom of *Yemen*.

'The Inhabitants of the Iſland of *Bourbon*, ſays Mr. *De Fontenelle*, 'having ſeen ſome Branches of the Coffee Tree, full of 'Leaves and Fruit, which a *French* Veſſel had brought from '*Mocca*, preſently diſcover'd that they had the ſame Sort of 'Tree growing upon their Mountains; and upon comparing 'them together, the Ships Company were convinced that they 'were really alike; only that the *Bourbon* Coffee Fruit is longer, 'ſmaller, and greener than that of *Arabia*, and when burnt has 'a bitterer Taſte.

Whatever Way this Plant got into that Iſland, it is certain that the *French*, to whom it belongs, have lately cultivated Coffee there with good Succeſs, and have ſent ſeveral large Quantities into *Europe*; and it is not long ſince the publick News-papers gave us an Account of the Sale of one Parcel by the *French Eaſt India* Company at *Paris*, which was ſaid to be as good as any that comes from the *Levant*. Tho' we ſhould ſuppoſe this an indigenous Plant of that Iſland, yet it has been ſo lately known there, and that only by comparing it with others brought from *Arabia Felix*, that had not a Way been found of propagating it from this

this Country, *Europe* might ſtill have been without it; and the Curious might ſtill have had Reaſon to complain in theſe elegant Words of Mr. *Ray*, *Mirum tantum Theſaurum unius gentis, peculium eſſe, tamque lucroſæ ſtirpis Plantaria, intra unius Provinciæ Anguſtias coërceri. Mirum vicinas Nationes extimulante invidia aut avaritia, ea jam pridem non vel vi depopulatas eſſe, vel ſemina aut vivas radices dolo ſurripuiſſe. Mirum quem vigilem draconem Coævetis ſuis tuendis præficiant indigenæ, qui omnes inſidiantium technas, & conatus fruſtretur & eludat.* But now, by the Care and Induſtry of the ſagacious *Dutch*, the Ground of that Complaint has ceas'd, *Deluſæ jam vigilantiſſimi Draconis Arabici technæ, Arborque non tantum in alias Aſiaticas tranſplantata nunc Regiones, ſed & in Europam noſtram tranſvecta, lætè nunc in Belgio & Septentrionalibus Oris, accedente indefeſſis culturæ curis vireſcit.* As *Volkamerus* has well expreſſed it.

How the *Dutch* made themſelves Maſters of the Coffee Plant, has been variouſly related by Authors: Some are of Opinion, that they found Means to carry off a whole Tree by Stratagem; and Mr. *Bradley*, amongſt the reſt, has related a Story to this Purpoſe. But it is from Profeſſor *Boerhaave* that we learn the whole Truth of this Matter; and likewiſe by what Means the Plant was brought into the *Amſterdam* Garden. *Nicholas Witſen*, Burgomaſter of *Amſterdam*, and Director of the *Dutch Eaſt-India* Company, wrote ſeveral times to M. *Van Hoorn*, then General of *Batavia*, to cauſe ſome freſh Coffee Seeds to be brought from *Mocca*; and to be planted and cultivated with all poſſible Care in the Iſland of *Java*, of which *Batavia* is the Capital. *Van Hoorn* did as he was directed; and having in a little time rais'd a conſiderable Number of Plants, he ſent one of them to *Amſterdam*, in a Preſent to *Witſen*, who, as he had been the original Founder of the Phyſick Garden there, thought that the moſt proper Place for it to be lodg'd in. There it ſoon bore Fruit, from which many new Trees have already and ſtill continue to be raiſed. This Relation that learned Author aſſures us he had from *Witſen* himſelf; but his original Words, of which I have here given the Subſtance in *Engliſh*, deſerve to be ſet down: *Ampliſſimus vir Nicolaus Witſen, Amſtelædamenſis Conſul, atque Indiæ Orientalis Societatis Præfectus, poſtquam ſæpe literis monuerat Primum Societatis Indicæ Præfectum Van Hoorn ut Semina recentia Caffé Moſchâ Arabiæ Felicis urbe deferenda curaret, atque in inſula Java in cujus Metropoli Batavia habitabat, terræ commiſſa foveret; cui ille juſſo parens, arboreſque inde nactus plurimas, unam miſit ampliſſimo viro, qui ſtatim quam liberaliſſimè incomparabili hoc Ornamento donavit hortum Amſtelædamenſem, cujus*

olim & Conditor fuerat. Ibi tulit dein fructus, ex quibus ſatis novæ aſſiduò ſtirpes prodeunt. Ita quidem, ut rariſſimæ Arboris Spectaculum in Europa unius Witſen curæ debeatur & liberalitati, errentque qui aliter hac de re publicè commentati ſunt, ut ſuis ad me datis literis ipſe ampliſſimus vir memonuit. The Authors M. *Boerhaave* here means, are probably the Relaters of that Story of the *Dutch* having ſtollen away a whole Plant from *Arabia*; which we have already taken Notice of.

Concerning this Coffee Plantation in *Java*, Monſ. *La Roque* ſpeaks in theſe Words: 'The wiſe and ſagacious *Dutch* have planted Coffee brought from *Arabia*, near *Batavia*, and by tranſplanting, and other proper Methods, they have rais'd many Trees there: The Succeſs, nevertheleſs, does not fully anſwer, ſince they continue ſtill to ſend Ships and ready Money into the *Red Sea* to purchaſe Coffee from the *Arabians*. It is pretended, that the too great Heat of that Climate is the Reaſon why the Fruit ſeldom comes to due Perfection. And indeed Coffee Trees require a moderate Heat, much Shade, and a freſh free Air.' This Author acquaints us further, That the *Engliſh* likewiſe had begun to plant Coffee at *Fort St. George*, in the *Eaſt Indies*; but with ſo little Succeſs, that he was inform'd they had now laid aſide all Thoughts of that Deſign.

Whatever might be the State of the *Dutch* Coffee Plantations in *Java*, when M. *La Roque* wrote, they are now in a very thriving Condition; great Quantities of Coffee being every Year brought from thence into *Europe*. As for any Deſign of planting Coffee about *St. George*, I never could hear that that was carry'd further than meer Curioſity.

But now to return to the *Amſterdam* Garden, the Univerſal Nurſery of Coffee Trees for all the Weſtern Parts of *Europe*; I can neither find in what Year that Plant was brought thither, nor to what Place the firſt Trees were ſent from thence. We may however probably conjecture, that the neighbouring Gardens of the United Provinces were firſt ſupply'd; but I find no printed Account of any ſent out of *Holland*, before thoſe which *Chriſtoph. Volkamerus* ſaw in M. *Munnukhauſen*'s Garden in *Germany*; of which, as likewiſe of ſome Seeds ſent by *Commelinus*, the famous Botanick Profeſſor at *Amſterdam*, to his Brother *Joh. Georg. Volkamerus*, he has given the following Account: *Miſit Café fructus cera obductos conjunctiſſimo fratri Dn. D. Joh. Georg. Volkamero, ex Amſterodamenſi horto Excell. Comelinn. Floræ illud delicium. Arboris autem Café ferentis ramum quem hic delineavimus ſumma liberalitas Excellentiſſimi Domini L. B. a Munnickhauſen Magnæ nunc Britan-*

niæ Monarchæ Potentiſſi, & Electoris Brunſwicenſis Hannoverani (quem Deus T. O. M. ſervet & tueatur) Theſaurarius & conſiliarius intimus, ex horto ſuo Swebberhano prope Hamelenſe Fortalitium extructo, cum regiis certe comparando, mihi quod grata mente recolo exhibuit.

This Account is dated in 1714; M. *Munnickhauſen* muſt therefore have had his Plant before that time; but we are ſure it was in that Year (Mr. *Bradley* ſays about the latter End of it) that the Magiſtrates of *Amſterdam* ſent a large Tree bearing Fruit in a Preſent to the late *French* King. Monſ. *La Roque* ſaw it immediately after it was plac'd in the Royal Garden at *Paris*; and from what he ſays, we likewiſe learn that there were ſome ſmall Plants there before. " On the 29th of *July*, ſays that Author, Monſ. ' *De Juſſieu*, Doctor of Phyſick, and Royal Profeſſor of Botany, ' was ſo kind as to carry M. *Galand*, *Arabick* Profeſſor in the ' Royal College; M. *Parent*, of the Academy of Sciences, ' M. *Onange*, a learned *Chineſe*, and my ſelf, to the Royal Gar- ' den, to ſee the young Coffee Plants that are there; but at our ' Arrival we were told that the King's firſt Phyſician had ſent ' thither the great Coffee Tree lately come from *Holland*, and ' which had been preſented to His Majeſty by the Magiſtrates of ' *Amſterdam*. We went therefore firſt to ſee this rare Plant; and ' we conſidered it a great while with Pleaſure. It was in a Caſe ' in the ſame Glaſs Frame with the Torch Thiſtle of *Perou*, be- ' ing about five Foot high, and not above one Inch Diameter. ' It ſhoots out divers little Branches that ariſe all along the Stalk, ' and altogether form almoſt a Pyramid; the Leaves are all rank'd ' in Pairs, but not ſo big as thoſe I had from *Arabia*. And ' M. *Galand* perceiv'd no Difference between this Tree and one ' he had ſeen at *Conſtantinople*. There was green Fruit upon it ' about the Size of a ſmall Plumb; red Fruit almoſt like a Cherry, ' and ſome nearly ripe, of a much deeper Colour. The *Hol-* ' *lander* who was intruſted with the Care of it, and came along ' with it from *Marly*, told us there was another ſtill at *Amſter-* ' *dam*, much larger than this, being as high as the ſecond Story ' of an Houſe, and proportionably thick. This great Tree came ' originally from *Arabia*, being tranſplanted very young, and ' carried to *Java*, where after it had grown for ſome time, it ' was at length ſent to *Amſterdam*, and there continues ſtill to ' proſper. (*In all this our Author was miſinform'd.*) From the ' Fruit thereof a great many Trees have been rais'd; ſome of ' which have bore Fruit at three Years old; and, as the *Dutchman* ' told us, the Tree ſent to the King was of this Number.

' M. *De*

‘ M. *De Juſſieu* carry'd us afterwards to ſee the other Plant which ‘ came ſome time before from *Holland*. It is as yet but very in- ‘ conſiderable, bears no Fruit, and is but about a Foot and an ‘ half high, tho' very freſh and in good Plight. But to return ‘ to the firſt, in order to ſatisfy my Curioſity compleatly, I want- ‘ ed now only to ſee it in Flower; and this I had the Pleaſure ‘ of, by M. *De Juſſieu*'s Means, in about five Weeks after. I ſaw ‘ ſome of the Flowers unblown, others perfectly open and ſpread, ‘ and from thence I was fully convinced of the Truth of every ‘ thing I have advanced in my Memoirs on that Subject.

In this ſame Year, 1714, Mr. *Bradley* tells us, the *Dutch* ſent over ſeveral Trees to their Settlement at *Surinam* in the *Weſt Indies*, in order to cultivate them in that Country, where he thinks they will undoubtedly turn to good Account; as he is perſuaded they would do, if they were propagated in the South Parts of *Carolina*. That Trial I believe has not as yet been made, but there is now a very large Stock of Coffee Trees in *Barbadoes*; from whence not only whole Plants, but even ſome Pounds of dry'd Fruit have been ſent to *England*. And I am inform'd by Mr. *Philip Miller* of *Chelſey*, that in the Year 1720, one Capt. *Young* carry'd the firſt Plants from *Surinam* to that Iſland. If we may believe Mr. *Bradley*, in his late Appendix, it is owing to His former Writings that ever they thought of cultivating Coffee there. ‘ I am, ſays he, the more particular (*about making hot-beds, ‘ no noubt very neceſſary in* Barbadoes) on this account, becauſe I ‘ now find that my former Writings concerning Coffee, have ‘ brought that Plant to be familiar in our *American* Plantations, ‘ I mean the Iſland of *Barbadoes*, where at preſent there is a great ‘ Number of Plants in a fruit-bearing State, from whence ſome ‘ have been brought to the Royal Palace at *Hampton Court*, in a ‘ proſperous Condition; and I doubt not but the Plant, for its ‘ Beauty and Curioſity, will be as much coveted by all Lovers ‘ of Gardens, with us; eſpecially ſince the ſame Expence, in ‘ point of Culture, will ſerve for the Education of all the choice ‘ Fruits of the hotteſt Climates.

But to return to the Progreſs of the Coffee Plant in *Europe*. Being by this time pretty common in the Northern Countries thereof, it at length found its Way over the *Alps* into the Phyſick Garden at *Piſa*, from whence, no doubt, it has now ſpread to the other curious Repoſitories in *Italy*. It is M. *Tilli*, Botanick Profeſſor at *Piſa*, who acquaints us with this Circumſtance. The Grand Duke, he ſays, being inform'd that the Coffee Tree was cultivated in the *Amſterdam* Garden, deſir'd of the Director there-

of

of that he might have a Plant for his Phyſick Garden at *Piſa*; and as they readily conſented, it accordingly arriv'd ſafe at *Leghorn* in 1715, in the hotteſt time of the Year, having ſuſtain'd no Damage in the Voyage; and being from thence tranſported to *Piſa*, it continues there to flouriſh and bear Fruit to Perfection, from which many young Plants have been rais'd. *Hujus rariſſimæ Plantæ in Ampliſſimo Amſtelædamenſi horto Vegetantis ad Aures Regiæ Celſitudinis Magni Ducis Rumor pervenerat, & ſicuti omnes ejus impetus tam in genere Scientiarum quam in genere novitatis ad laudem ſemper ſunt propenſi, ut honeſta & utilia quælibet animus ejus continuè cogitet, hanc plantam quoque ex horto Amſtelædamenſi in Piſanam urbem transferendam cogitavit; hinc factum ut tanti Principis nomine, claritate ac benevolentia illuſtriſſimi & nobiliſſimi ejus horti curatores ad nos Anno 1715, hanc Café plantam titulo & deſcriptione Jaſmini Arabici Caſtaneæ foliis flore albo odoratiſſimo a Doctiſſimo Commelino facta, omni cura & diligentia miſerunt. Hinc & Navis Gubernator ſuam adhibuit operam & ſollicitudinem; opportune enim Liburnum appulit; tunc æſtus erat graviſſimus, flagrantiſſimo ſidere Cœlum incaluerat, attamen a tanta Locorum diſtantia, abſque ullo Hybernaculo nihil detrimenti acceperat.*

When the Coffee Tree was firſt ſeen in *England*, I am not able poſitively to determine. Mr. *Wiſe*, His Majeſty's chief Gardiner, aſſures me, that ſome time before the Death of the late Queen *Mary* this Plant was in the Royal Garden at *Hampton Court*; and I have been told, that the late Biſhop of *London*, Dr. *Compton*, had one at *Fulham* in 1696. brought directly from *Batavia*, by one Capt. *Adams*.

In the Year 1706, Her Grace the Dutcheſs of *Beaufort* (as I am inform'd by the Gardiner) had one at *Chelſey*.

In 1712 it was certainly in the Right Honourable the Lord Viſcount *Weymouth*'s Garden at *Long Leate* in *Wiltſhire*. This appears by a Catalogue of all the Stove and Greenhouſe Plants and Annuals in that Garden, taken *July* 28, 1714, when that Nobleman died, communicated to me by my worthy Friend the Reverend and Learned Mr. *Harbein*; in which Catalogue I find *the true Coffee Plant three Foot high ſent to my Lord from* Holland, *in* 1712.

But the firſt printed Account we have of any Plants ſent from *Amſterdam* to *England* is by Mr. *Bradley*, in his firſt Treatiſe of Coffee, publiſh'd in 1714; that is, in the ſame Year in which he himſelf ſaw them in *Holland*. 'The Heer *Gerebrand Pancraſs*, 'Commiſſary of the Garden, and Preſident of the City of *Amſterdam*, did me the Honour to accommodate me with this great

' Curioſity, which I ſent into *England*, and intruſted to the Care ' of Mr. *Thomas Fairchild*, a moſt accurate Gardiner at *Hoxton*.

Dr. *Sherrard* has been ſo kind as to inform me, that about the Year 1719 he ſent a Coffee Plant to Dr. *Eudal* at *Enfield*; and in 1723, his Brother, Mr. *Sherrard*, had ſome for his fine Garden at *Eltham*, likewiſe directly from *Holland*.

In 1724, Mr. *Parker* of *Heling* had two Plants ſent him from *Amſterdam*.

There has been likewiſe a good Number of Plants ſent directly hither from *Barbadoes*. Thoſe that came laſt Summer to His Majeſty, were ſent by the Governour of that Iſland, and entruſted to the Care of Dr. *Gamble*. His Royal Highneſs the Prince, and the Duke of *Chandos* had ſome by the ſame Ship.

CHAP. IV.

The Coffee Plant in general.

IN this Chapter my Deſign is only to lay before the Reader a ſhort View of the Sentiments of Authors concerning the Genus of this Plant, with reſpect to *Theophraſtus*'s general Diviſion of Vegetables; and to remark the other Plants to which it has been compared. The Obſervations which belong to this Place, are therefore ſuch only as could not conveniently be rank'd under any Head of the following Deſcription, and at the ſame time ſerve to convey a general Idea of the whole Plant, the particular Parts of which I am afterwards to examine.

Every Body knows that *Theophraſtus* has divided all Plants into theſe four Claſſes, Trees, Shrubs, Under-ſhrubs and Herbs. The Coffee Plant has been thought by different Authors to belong to every one of theſe; for it is by ſome called a Tree, by others a Shrub and Buſh, by others an Herb, in expreſs Terms; and by others, in fine, it has been compared to different Plants of all theſe Kinds.

Alpinus, the firſt Author who has mention'd the Coffee Plant, calls it a Tree, and compares it to the *Euonymus*, a few things excepted concerning the Figure and Subſtance of the Leaves. It is not eaſy to determine what *Euonymus* is here meant; did he not ſeem to place the chief Difference between the Coffee Plant and that, in the Leaves, I ſhould be apt to think he had in view

the Spindle Tree, which grows commonly in Hedges in moſt Counties of *England*, for the Leaves thereof bear a very great Reſemblance to thoſe expreſſed in *Alpinus*'s Figure.

J. B. who only copies from *Alpinus*, what he has ſaid about this Plant, agrees with him likewiſe in calling it a Tree, and both he and his Brother *C. B.* compare it to the *Euonymus*, without any farther Explication.

Petrus de la Valle, the celebrated *Italian* Traveller, in a Letter dated at *Conſtantinople*, 1615, calls it alſo a Tree. It grows, he ſays, near *Mecca*; and of the Fruit the *Turks* Drink is made.

Garcias Silva Figueroa, in the Account he has given us of his own Embaſſy from *Spain* to *Perſia*, begun in 1617, tells us that the *Perſians* made their Coffee of certain Herbs.

Veſlingius, in his Notes on *Alpinus*, 1638, gives this Plant the Name of a Tree; but at the ſame time owns he had never ſeen it.

Parkinſon compares it to the Prickle Timber, or Prickwood Tree, which he takes to be the *Euonymus* of *Alpinus*.

Baneſius, in the firſt Treatiſe that was ever publiſh'd expreſſly on Coffee, 1671, is likewiſe the firſt whom I find to have called this Plant a Shrub or Buſh; which are the Names he conſtantly gives it thro' his whole Book. And as he has likewiſe quoted *Alpinus*'s Account of it, the *Engliſh* Tranſlator thinks fit to add, by way of Note, that the *Euonymus* is by our Botaniſts term'd the Spindle Tree, or Prickwood; but it is believ'd (ſays he, without telling us by whom, or for what Reaſon) that it is not *Alpinus*'s *Euonymus*.

Chabræus, in his *Seiographia Stirpium*, 1678, joins with the other Authors in calling the Coffee Plant a Tree; but it is meerly upon the Authority of *Alpinus*, who indeed is the only Perſon, during all this time, that appears to have ever ſeen it; for *Baneſius* no where ſays that he did; and the reſt either frankly own they never did, or ſay nothing about the Plant at all.

Monſ. *Bernier* has ſomething new upon this Head, but we ſhall ſee preſently, from Monſ. *La Roque*, that he has been very ill inform'd. 'I cannot tell you (ſays he to Monſ. *Du Four*, in a Letter publiſh'd with that Author's Treatiſe on Coffee) 'whether 'Coffee be a kind of Bean, which is ſown every Year as we do 'ours, or the Fruit of ſome Shrub; I find nothing upon that 'Head in my Journals; but what I can aſſure you of is, that 'it muſt be a Species of *Convolvulus*, becauſe I remember perfectly well to have been told that it is always planted near the '*Mouzé*, to which it clings, and ſo ſupports its ſelf.' This

Mouzé

Mouzé is what the *Portugueze* call *Adam's Fig Tree*, becauſe of the Largeneſs of its Leaves.

It is no Wonder that this Account ſtartled Dr. *Robinſon*, and that, having nothing but *Alpinus* and his own Obſervations on the dry'd Coffee Fruit to be guided by, he was at a Loſs what to make of it. 'M. *Bernier*, who paſs'd the *Red Sea* into *Arabia*, (ſays the Doctor to Mr. *Ray*, in a Letter publiſh'd not long ago by Mr. *Derham*) 'doth affirm, That the *Arabs* aſſured him that 'the Coffee Fruit was ſown every Year, under Trees, upon which 'it did climb and run. From which he concludes it to be a 'Species of *Convolvulus*. I think he might as well have con-'cluded it to be a *Phaſeolus*, or ſome other ſcandent Legume—— 'If M. *Bernier* was truly inform'd of its annual ſowing and climb-'ing, then *Alpinus* never ſaw the true Coffee Plant—— I have ex-'amin'd many Coffee Berries, as they call them, here in *London*, 'and am almoſt perſuaded by my own Obſervation that they are 'neither Berries nor the Seeds of any *Convolvulus*, nor of any 'Legume, but are rather of the Nut Kind.

Du Four's Treatiſe of Coffee was printed in 1683, and in the Beginning thereof he terms the Coffee a Legume, or kind of foreign Bean; but when he talks of the Plant it ſelf, he is not altogether againſt its being called a Tree, tho' he inclines more to rank it among the Shrubs. 'The Tree that produces the Coffee (ſays he) 'is like the *Euonymus* or Spindle Tree (*Fuſain* in *French*) 'which bears the Seed we call *Bonnet de Pretre*, as we are inform'd 'by *Alpinus*, who ſaw it in his Travels. In the Memoirs which 'I have received from the *Levant*, it is compared to our middling 'Sort of Cherry Trees, both in Leaves, Branches and Size, for 'at moſt it is but a Shrub.

Blegny compares the Trunk of the Coffee Plant to a common Bean Stalk. What led him into this Miſtake was his looking on the Branch delineated by *Alpinus*, to be the whole Plant.

As *Du Four*'s Book was the lateſt, and, as Mr. *Ray* owns, the beſt that he had heard of about Coffee, when the ſecond Tome of his *Hiſtory of Plants* came out, we need not be ſurpriz'd to find that he imitates him in calling it a Shrub.

In this, and in nothing elſe, he is followed by the Worthy and Learned Sir *Hans Sloan*, whoſe Account of this Plant, publiſh'd in the *Philoſ. Tranſact.* N° 208, is by far the moſt exact that had till then appear'd.

Mr. *Dale*, in his *Pharmacologia*, 1710, ventures to diſſent from Mr. *Ray* in this Particular, and calls the Coffee Plant a Tree. This was certainly not the Effect of any Knowledge he had of the

Plant, for in the very next Line he tells us it is *Arbor prægrandis*, a Tree of an extraordinary Size; and compares it to the *Tilia*, or Lime Tree.

Dr. *Salmon* agrees with *Dale* in calling the Coffee Plant a Tree; but inſtead of the *prægrandis* of that Author, he ſays it is but a very little Tree.

Sir *Thomas Pope Blount*, in his Natural Hiſtory, 1693, takes Notice (from *Du Four* I ſuppoſe) of the Reſemblance of it to the Cherry Tree, except that it is ſcarce ſo big.

Dr. *Pechey*, in his *Compleat Herbal*, 1694, calls it a little Tree; but rather than to ſay he copy'd Dr. *Salmon*, I ſhall ſuppoſe he tranſlated the *Arbuſculum* of Mr. *Ray*.

Pomet, after finding Fault with *Blegny*, tho' without naming him, tells us, (*Hiſtoire des Drogues*, 1694,) that for his Part, he rather inclines to *J. Bauhinus*'s Opinion, that it is like the Spindle Tree. How can this Author have ever read *J. B.* and not ſee that he copies *Alpinus*?

Herman acquaints us, in his Poſthumous Treatiſe of the *Materia Medica*, publiſh'd 1710, that the Coffee Trees grow in *Arabia Felix*, and that they are as big as Lime Trees. As this Book was handed about in Manuſcript long before it was printed, it was from thence, perhaps, that *Dale* got this Compariſon.

The two *Lemerys* ſtick by *J. B.* and only refer to him for a farther Account of this Plant.

It is hard to tell upon what *Langius* founded the Reſemblance, when, in his *Materia Medica*, 1704, he compared the Coffee Plant to the *Filix*; or how, after ſuch a Compariſon, he ſhould ſtill call it a Tree.

Tournefort has no where mention'd this Plant, but in a Poſthumous Treatiſe of the *Materia Medica*; and even there he has only copy'd *Du Four*.

Chomel, in his *Plantes Uſuelles*, 1712, and *Andry*, in his *Aliмens du Carême*, 1713, call it ſimply a Tree which grows in *Arabia Felix*.

Valentini, in the *Latin* Edition of his *Materia Medica*, publiſh'd in 1716, tells us it is an exotick Tree as big as the Lime Tree.

C. Commelinus is the firſt who has been at Pains to examine this Plant with a View to diſcover the Family it belongs to; for neither *Moriſon* nor *Tournefort* in his Inſtitutions, have ſo much as mention'd it; and the Way that Mr. *Ray* has claſs'd it is only by Gueſs. According to this Author, the Coffee Plant is a Species of Jeſſamin; and *Volkamerus*, in the *Acad. Cæſar. Leopold. Ephem. Obſ.* 168. adds, that it is of the *Bacciferous* Kind.

Meſſieurs *La Roque* and *De Juſſieu* have given us ſo exact and compleat a Deſcription of this Plant, that they had no Occaſion to compare it to any other, as a Mean to convey a better Idea of it; and after what they have ſaid there can no more Difficulty remain whether it ought to be ranked among the Trees or Shrubs. *La Roque* adds, *en paſſant*, that when at its full Growth it is not unlike an Apple Tree. But what we have principally to remark from this Author's Account, is an Obſervation which lets us into the Reaſon of M. *Bernier*'s Miſtake, and clears up the Difficulty which Dr. *Robinſon* was in about it. 'If our Travellers, ſays Monſ. *La Roque*, 'had not made this Journey to *Mouab* (the 'City where the King of *Yemen* then reſided) we ſhould perhaps 'have long remain'd ignorant of one Singularity about the 'Coffee Trees, of which no Body has hitherto taken Notice; 'and that is, that in Places very much expoſed to the South, 'or which lie too open, theſe Plants are ſet under great Trees, 'which they ſay appear'd like a kind of Poplars, and they ſerve 'to ſhade and defend the others from the exceſſive Heat of the 'Sun. The Inhabitants are perſuaded that without this Canopy 'the Flowers would ſoon be burnt up, and no Fruit ever appear; 'and our Travellers ſaw ſome Inſtances of this in other Trees 'which had not the Advantage of a Shade. They obſerv'd this 'in the firſt Coffee Trees they met with in their Journey: It was 'in a Plain near the City of *Tagus*, which is very much expos'd. 'The Poplars ſtood at certain Diſtances all over the Plantation, 'and each of them ſhaded a good Number of Coffee Trees re-'gularly planted for that Purpoſe, much after the Manner that 'Apple Trees are in *Normandy*. In other Places which do not 'lie ſo open there are none of theſe Trees to be ſeen, the Coffee 'Plants thriving well enough there without a Shade.

Thus far Monſ. *La Roque*. And theſe were undoubtedly the great Trees which *Bernier* had been told of; for which he could imagine no other Uſe than that they ſupported the Coffee Plants, as others do the *Convolvuli*.

Profeſſor *Boerhaave* agrees in every thing with *Commelinus*. It was ſufficient for the Deſign of his Index, publiſh'd in 1720, to name and claſs this Plant as he had found it done by any good Author before him.

According to Mr. *Joſeph Miller*, in his late *Botanicum Officinale*, the Coffee Plant ſeems to be neither Tree nor Shrub, but ſomething between both; which he expreſſes by calling it a *ſhrubby Tree*. He is likewiſe afraid to make it a Species of *Jaſmin*, but ſays only, that it is ſo according to *Commelinus*.

Mr. *Bradley* is as poſitive on the other hand, that *Commelinus* was in the right; aud aſſures us that every Day confirms him more and more that it is of that Tribe.

In this Manner have Botanical Writers talk'd concerning the Coffee Plant in general; and if we look back on all that has here been quoted from them, we ſhall find,

1. That of all the Authors who have ſaid any thing upon this Subject, the greateſt Part are agreed that this Plant is truly and properly a Tree, and ought to be reckon'd ſuch.

2. That of the remaining Authors, *Baneſius*, Mr. *Ray*, and Sir *Hans Sloane*, think it is properly a Shrub; *Du Four*, that it may be reckon'd either a Tree or Shrub; *Miller*, that it is neither the one nor the other, but a ſhrubby Tree; *Figueroa*, that it is an Herb; *Langius*, that it is both Herb and Tree; and *Bernier* is altogether undetermin'd about it.

3. The other Plants it has been compar'd to, and the Authors of theſe Compariſons, are the following,

Euonymus,	*Alpin.*
Prickle Timber Tree,	*Parkinſ.*
Convolvulus,	*Bernier.*
Cherry Tree,	*Du Four.*
Common Bean,	*Blegny.*
Tilia, or Lime Tree,	*Dale.*
Filix, or Fearn,	*Lang.*
Jeſſamin,	*Commelin.*
Apple Tree,	*La Roque.*

CHAP. V.

The Root, Trunk and Branches of the Coffee Plant.

THO' the Coffee Tree is now to be found in many Gardens about *London*, it has been my Misfortune as yet never to have had a full Opportunity of examining theſe Parts of it which make the Subject of this Article. I ſhall, however, venture to communicate the few Obſervations I have hitherto been able to make about them; leaving a more perfect Deſcription of them to be ſupply'd by ſome other Hand, in caſe I ſhould never be in a Condition to do it my ſelf.

The Coffee Fruit being planted in a convenient Soil, the firſt Part of the ſucceeding Tree which appears above Ground, is the ſeminal Leaves; and as ſoon as they are ſpread, the tender Stem may be perceived to ſprout out betwixt them tip'd with two other Leaves of the ſame Kind with thoſe that always remain on the Plant. From between theſe, another Portion of the Stalk may in a little time afterwards be perceived to ſhoot, crown'd likewiſe with a new Pair of Leaves lying in a Plain which cuts the former at right Angles; and in this manner the tender Trunk advances.

How long it is before the firſt Branches begin to appear, I cannot certainly tell; I ſaw a young Plant in Mr. *Sherrard*'s Garden, ſeven Inches high, bearing five Pair of Leaves, beſides the ſeminal ones, without any Veſtige of Branches. But when they do ariſe, their Manner of Growth is much the ſame with that of the Trunk. They come out in croſs Pairs from the *Alæ* of the above-mention'd Leaves, and all of them make acute Angles with the Stem, thoſe neareſt the Top being moſt inclined.

Neither is the Deſcent of the Root, in all Appearance, much different from the Aſcent of the Trunk and Branches; for in a very ſmall Plant which I had the good Fortune to get with the Root entire, I obſerv'd it to run down for a good way pretty ſtrait, and that afterwards it bent ſeveral Ways, very long Fibres ariſing from it thro' its whole Length, moſt of them ſtanding the ſame Way as the Branches do on the Trunk, only much more numerous, and, as far as I could find, in a Poſition not always exactly regular. As the Plant grows up, ſome of the Fibres

which lie neareſt the Surface of the Earth become equal to the main Body of the Root in Thickneſs, and ſend out other ſmall ones in the ſame Plenty; and in this Manner it ſpreads to a conſiderable Breadth as well as Depth, theſe ſeveral *Digiti* ſhooting out different Ways, and at different Angles with the Horizon. This is all that I could with Certainty diſcover in another pretty large Root ſent me by a Friend; but which by Misfortune had been cut and mangled when dug up.

To what Height and Thickneſs theſe Plants will grow with us, cannot as yet be determin'd, there being none, as far as I know, in *England* which have reach'd their utmoſt Limits of Increaſe. Mr. *Parker* of *Heling* has one which laſt Summer was full five Feet above Ground; the Circumference, near the Root, was three Inches, and from thence it riſes gently tapering, the Top being no thicker than a ſmall Branch. At the going off of each Branch there is a conſiderable *Nodus*, eſpecially near the Top, but the Joints below each of them are always bigger than thoſe above them. In this Plant I counted eighteen Pair of Branches; the longeſt, which was in the third or fourth Row from the Ground, meaſuring eighteen Inches in Length, and three quarters of an Inch in Circumference.

The *Cortex* or Bark of this Plant is pretty thick, and may be plainly diſcern'd to be made up of two Parts, caſed over one another; the outermoſt of which ſeems to me to fall off from the Trunk and greater Branches, which makes theſe appear of a lighter Aſh Colour than the reſt; the upper Covering of the Bark being ſeveral Degrees darker than the other.

The Wood is pliant and flexible, of a much whiter Colour than any Part of the Bark, and ſpecifically lighter than moſt other Trees. This becomes the more remarkable, becauſe the Pith is but of a very moderate Size.

What has here been ſaid about the *Cortex* and Wood of this Plant, agrees equally to the Root and Trunk, at leaſt as far as I have hitherto been able to obſerve.

I ſhall conclude this Account with the following Obſervations communicated to me by that ingenious Gardiner Mr. *Philip Miller*, concerning the Coffee Trees which were lately ſent from *Barbadoes* to His Royal Highneſs the Prince. The Height of them from the Surface of the Ground was, in *September* laſt, fifty two Inches. Each Tree hath thirty two Branches, which come out by Pairs, oppoſite to each other. The lowermoſt Branches were twenty five Inches long, and ſo decreaſing in Length to the uppermoſt, which was three Inches long; and all together they form a handſome Pyramid.

The Stem of the Tree next the Surface is three Inches in Girt, and at the Top an Inch and three quarters.

The Root ſpreads nineteen Inches Diameter, and is very full of ſmall Roots. The larger Roots were of a dark brown Colour; but the *Fibrillæ* very white, and pretty tough; and when broken they ſmell very like Liquorice, but have little or no Taſte. The whole Root is ſo ramify'd, and each Ramification ſo full of *Fibrillæ*, that it looks like a ſhockey Head of Hair; and it was very difficult to clear them of the Earth.

In no Author, that I have yet met with, is there ſo much as one Word about the Root of the Coffee Plant. *Pomel* indeed tells us of one that was eaten by the Rats, near *Paris*; but beſides that this Story is in all Probability falſe, we are as far to ſeek about the Deſcription of this Root as ever.

Of all the *Europeans* who have travelled into *Arabia Felix*, where the young Coffee Plants are every where tranſplanted at certain times of the Year, it is a Wonder that none has ever had the Curioſity, either by ocular Inſpection, or at leaſt from the Accounts of the Inhabitants, to inform himſelf what kind of Roots they have. And it is a much greater Wonder ſtill, that during a Courſe of ſo many Years, in which there have been Plants ſent to all Places, from the *Amſterdam* Garden, that no Botaniſt who has had an Opportunity of examining the Roots, has ever publiſh'd a Deſcription of them.

The Trunk and Branches, having a nearer Relation to the Fruit, and being diſcoverable with much leſs Trouble than the Root, have not been ſo much neglected by Authors.

Alpinus has ſaid nothing in particular about either of theſe; but ſuppoſing the Figure he has given us of a Branch to be in any meaſure like the Plant it was taken from, we may infer from thence, that it decreaſes very ſenſibly in Bigneſs, as it removes from the Trunk, till at Top it appears to be not much thicker than the Foot Stalks of the Leaves: That it is not quite ſtrait, but gently bent two contrary Ways in form of an *Italian f*; and that there are three leſſer Branches ariſing from it, the uppermoſt about the Middle, and all of the ſame Figure with it.

From this Time, all the Way down to Monſ. *Du Four*, we meet with nothing but repeated Copies of *Alpinus*'s Figure, without any Deſcription; and even this Author has only told us that the Branches are ſmall and limber; referring for all the other Particulars about them, as well as about the Trunk, to the Figure placed at the Beginning of his Book; which is only a good Copy of that of *Alpinus*.

Sir *Hans Sloane*'s Figure is likewiſe taken from a Branch, and differs extremely from all that ever I have ſeen in the Number and Diſpoſition of the ſmaller Twigs that ariſe from it.

About the Deſcription of it, the Author tells us that it was taken from a Tree ſeven or eight Foot high; that the Branch it ſelf was five Foot long, and cover'd with a grey almoſt ſmooth Bark. The Wood is white, and the Pith not very large. The Twigs are cover'd with a darker colour'd very ſmooth Bark, and ariſe oppoſite to one another by Pairs, ſtanding croſs to one another, coming out of oppoſite Sides of the Branch, or the two Pairs next to one another, cutting each other at right Angles.

The Branch from whence this Deſcription is taken, was dried; but nevertheleſs, he ſays, it will every way agree to thoſe of a growing Tree; Mr. *Clyves*, who brought it to *England*, having inform'd him of every Particular of it.

Monſ. *De Juſſieu* tells us, that in the Year 1715, the Coffee Tree in the Royal Garden at *Paris* was about five foot long, and the Trunk as thick as a Man's Thumb. The Branches ariſe at certain Diſtances, always in Pairs croſſing one another: They are very limber, round, knotted and cover'd, as well as the Trunk, with a very thin white Bark. The Wood of them is pretty hard, and of a ſweet Taſte. The lower Branches are commonly ſimple, and ariſe more horizontally than the upper ones, in which the Trunk ends, and which are ſubdivided into leſſer Twigs ſpringing from the *Alæ* of the Leaves in the ſame Order.

Valentini refers to the Count *Marſigli* for an Account of this Tree, and has only copy'd one of the Figures of that Author.

Monſ. *La Roque*, from Informations taken in *Arabia Felix*, informs us that the Tree which bears Coffee is from ſix to twelve Feet in Height, and from ten to fifteen Inches

Inches in Circumference.. When in Perfection it looks not unlike an Apple Tree eight or ten Years old. In an aged Tree the lower Branches are ordinarily bent; and at the ſame time they ſpread themſelves all round the Trunk, and ſo form a Sort of Umbrella. The Wood is very tender, and withal ſo pliable, that the Extremities even of the higheſt Branches may be brought within a Foot or two of the Ground without breaking. The Bark is of a whitiſh grey Colour, and the Surface of it ſomewhat uneven.

Concerning two other Trees which this Author ſaw in the Royal Garden at *Paris*, he obſerves that one of them was only about a Foot and an half high; the other, then juſt arriv'd from *Holland*, was about five Feet in Length, and an Inch in Diameter. Little Branches aroſe all along the Stem, and taken all together they form'd almoſt the Figure of a Pyramid.

Mr. *Bradley* has been at Pains to examine and delineate the Coffee Trees that grew in the *Amſterdam* Garden. His Figure, however, is only that of a Branch, which he tells us reſembles in every Point that he took it from, except only the Size, which ought to be one third bigger to make it equal with the Life. About the Trunk or Branches of this Tree he has ſaid nothing, further than that it is of a very quick Growth, and naturally inclinable to ſhoot upwards; that in its native Country it generally attains, as is reported, the Height of forty or fifty Feet, altho' the Stem, in the thickeſt Part, does not exceed five Inches in Diameter. He adds, That in the Garden of *Amſterdam* there were two Coffee Trees about ſeventeen Foot high when he ſaw them.

As this exceſſive Height aſcribed to the Coffee Trees by Mr. *Bradley*, is only upon the Teſtimony of other People, it ought to be of no Force againſt the Truth of the Memoirs furniſh'd to Monſ. *La Roque* upon that Subject; and I am even afraid Mr. *Bradley* did not accurately meaſure thoſe he ſaw at *Amſterdam*.

CHAP. VI.

The Leaves of the Coffee Plant.

THE Leaves of the Coffee Plant terminate both Ways in a narrow Point, and from thence are expanded on both Sides in the Figure of a Curve Line, ſo as that the broadeſt Part of them is commonly about the Middle of their Length. Their regular Figure is to have this Curve Line ſimilar, an equal Part of the Leaf lying on both Sides the *Coſta* or Rib. They are not all, however, of this Shape, and the Variations from it conſiſt either in that the ſame Parts of the Leaf are not equally broad on each Side of the *Coſta*; or that the Extremities of them are laterally bent or incurvated; both theſe admitting of many different Degrees.

The Length of the largeſt Leaf which I had ever an Opportunity of meaſuring was nearly ſeven Inches; the greateſt Breadth two Inches and three quarters. The whole Circumference can ſeldom be exactly meaſured in a large Leaf, becauſe the Edges are moſt commonly undulated; but as near as I can gueſs from the Largeneſs of the Undulations of the Leaf I have now before

me, the Circumference of it is between ſeventeen and eighteen Inches.

Thro' the Middle of each Leaf lengthwiſe runs a ſtrong *Coſta* or Rib, riſing above the Surface on both Sides, but moſt on the lower or back Side. It decreaſes in Thickneſs as it advances towards the Extremity, being thickeſt near the Branch to which it is fixed; and as during a ſmall Space from thence the Leaf is extremely narrow on both Sides, that Part has been taken for a *Pedunculus* or Foot Stalk; and in the Leaf I have here given the Dimenſions of, it is about half an Inch in Length.

From each Side of the Coſta ariſe a great many Fibres of different Sizes, the largeſt being parallel to one another, and inclined obliquely towards the End of the Leaf. The others are ſpread irregularly thro' the Pulp of the Leaf, which is pretty hard and ſolid, tho' not very thick.

The Surface and Edges of young Leaves are ſmooth and even, except where Riſings are form'd by the Coſta and large Fibres; but as they increaſe, the Edges become commonly pinched, the reſt of the Leaf undulated or wav'd in many different Manners, bending likewiſe ſometimes both according to the Length and according to the Breadth.

The Leaves while freſh are all pretty much of the ſame Colour, the upper Side being of a deep graſſy green, the under Side lighter by a good many Degrees.

Hitherto we have conſider'd the Leaves by themſelves; the next Step is to examine them on the Plant. From the time that the Trunk appears above Ground, till the Branches are ſhot out, Leaves grow upon it in the ſame Order as the Branches do afterwards. In a young Plant only ſeven Inches high, I counted five Pair, beſides the ſeminal ones, and the largeſt of them was four Inches in Length. Theſe ſeminal Leaves differ from the reſt in Shape, being more nearly circular, and adhering to the Stem by the Sides, rather than by one End. Some Leaves are found on the Trunk, even after the Branches are out, in all Ages of the Tree, and they grow always cloſe by the Root of a Branch, but without being pair'd as before.

Two very tender Leaves are always found at the Top of the Trunk, join'd to a ſmall ſhort Foot Stalk, ariſing from between the Pair immediately below them. This Foot Stalk increaſes and becomes a new Joint or *Internodium* of the Trunk; but before it has gain'd any conſiderable Length or Strength, a new one tip'd with other two Leaves ſhoots out from its Top, betwixt the two Leaves placed there. In this manner the Tree increaſes in

Height; and the Growth of the Branches is perform'd in the ſame manner.

On theſe all the other Leaves are to be found. They ariſe from the *Nodi* already mention'd in an oppoſite Situation to one another; that is, one on each Side; but they are all in the ſame Plain, in which they differ from thoſe of the Trunk; and in their natural Situation, before they come to be bent and diſtorted, both Edges are at an equal Diſtance from the Horizon. The Number of Leaves on each Branch, is, I believe, pretty nearly proportionable to the Length of the Branches. On one, which meaſured eighteen Inches, there were ſixteen Pair of Leaves, but the Diſtance between each Pair is not always the ſame.

The Size of the Leaves on the ſame Branch is ſtill more different; neither are the largeſt always neareſt the Trunk, but indifferently on any other Part of the Branch; and it is certain that all of them do not arrive at the ſame Dimenſions before they decay. The firſt Sign of that is a Change of the Colour from Green to a light Yellow towards the Top; from thence it ſpreads over the whole Leaf, and to that a browniſh Colour ſucceeds, but not till that Part of the Leaf where it is found is quite dry'd and waſted. The Time when this happens, with reſpect to every ſingle Leaf, is not long after it has grown to its full Extent; tho' I am apt to think that their being ſo cloſely pent up in Stoves may contribute ſomething to the Shortneſs of their Duration; the Plant it ſelf, nevertheleſs, is undoubtedly an Ever-green; and I believe there is very little Difference to be obſerved in the Number of green Leaves in any Seaſon of the Year; but whether, or in what time young ones grow out from the ſame *Nodus* from whence the old ones fell, I have not had an Opportunity of obſerving.

Alpinus has only obſerv'd about the Leaves of this Plant, that they are thicker, harder and greener than thoſe of the *Euonymus*, and that they remain always green (*perpetuò virentia*): This laſt, as we have heard, muſt be meant of the whole Plant, not of any ſingle Leaf. In his Figure the Shape of the Leaves is very ill repreſented; but the Manner in which they ariſe from the Branches tolerably well, if we except the croſſing.

Monſ. *Du Four* obſerves further, That they are not very large, but pretty thick, in proportion to their Extent; that they are intire, or without Inciſures; and that in every reſpect they are very much like thoſe of a middling Cherry Tree. He takes Notice likewiſe that this Plant is an Ever-green, but however that the Leaves decay and fall off very ſoon, the Fruit remaining naked and expos'd upon the Tree. This Deſcription is meant of the Coffee Leaves in *Arabia Felix*, none of which Monſ. *Du Four* ever ſaw, and therefore the Inaccuracy of it is to be imputed not ſo much to him as to thoſe from whom he had his Informations.

Sir *Hans Sloane* is the firſt who has expreſs'd the Manner in which theſe Leaves ariſe from the Branches; and he has likewiſe added ſeveral new Obſervations about them. ‘ After the ſame manner, ſays he, ‘ ſtand the Leaves on the Twigs, as the ‘ Twigs on the Branches, at ſome times an ‘ Inch, ſometimes two Inches Diſtance, ‘ each Pair of Leaves from the other. The

' Leaves have ¼ Inch Foot Stalks, being ' about four Inches long, and two broad ' in the Middle where broadeſt, whence ' they decreaſe to both Extremes ending in ' a Point. They are ſmooth, whole, with- ' out Inciſures on their Edges, ſomewhat ' like the Leaves of a Bay.' When we conſider that this Author had only the Leaves of one dry'd Branch to take this Deſcription from, it muſt be own'd that he has examin'd this Part of it with great Accuracy; and as for the Compariſon he makes of theſe Leaves to thoſe of a Bay, it is at leaſt as juſt as any that have hitherto been pitch'd upon; eſpecially while the Leaves are ſmall and not curled.

Commelinus, and after him *Volkamerus* and others, compare theſe Leaves to thoſe of the *Caſtanea* or Cheſnut Tree. It muſt be own'd, that from a tranſient View of what the Gardiners call the *Spaniſh* Cheſnut Leaves, one would be apt to think that they reſembled the large ones of our Plant very much; but upon a more ſtrict Examination, I find them to differ extremely. The Cheſnut Leaves are much narrower in proportion to their Length; the large Fibres much thicker ſet, ariſing higher on the backſide of the Leaf, and much more diſtinctly continued to the Edges; the Edges are pretty deeply crenated, and the Interſtices between the Notches end in ſtrong ſharp Prickles or Thorns; the Undulations are not near ſo large, and quite otherwiſe diſpoſed; in fine, tho' this does not relate to the Make of the Leaf, thoſe of the Cheſnut do not ariſe in Pairs from the Branches, nor in the ſame Plain with one another.

Tournefort has nothing new about the Coffee Leaves; ' They ariſe, ſays he, in ' Pairs oppos'd to one another, being of ' an oval Figure, but ending in a ſmall ' Point.

M. *Bradley* tells us that the Leaves are bicompoſite, or ſet in croſs Pairs at the Joints, and not unlike thoſe of the common Bay, but curled at the Edges, and inclinable to hang down. And in the ſecond Edition he inclines rather with his learned Friend Mr. *Pettiver*, to think the Leaves like thoſe of the *Laurus Vulgaris*, than to compare it to thoſe of our common Cheſnut; but in all the Editions of his new Improvements, even thoſe publiſh'd ſince his laſt Treatiſe of Coffee, he inclines to the common Cheſnut again.

I need not take notice of the Defectiveneſs of what Mr. *Bradley* has told us about this Part of the Plant; but I cannot help remarking his Miſtake about the Situation of the Leaves upon the Branches: They are never ſet in croſs Pairs, but lie all in the ſame Plain; and on the Trunk, except before the Branches ſprout out, they are ſeldom in Pairs at all. So that with reſpect to neither of theſe will Mr. *Bradley*'s Account of the Situation of the Leaves be found to hold.

Monſ. *De Juſſieu*'s Deſcription is in theſe Words: ' Both Sorts of Branches are ' always cover'd with Leaves, intire and ' without Inciſures in their Circumference, ' ſmall and pointed at the two Ends, op- ' pos'd by Pairs, but without croſſing one ' another as the Branches do, and ariſing ' from the *Nodi* of theſe. They reſemble ' very much the Leaves of the common ' Bay, but are not ſo dry nor thick, tho' ' larger and more pointed; their Extremi- ' ties inclining ſometimes a little to one ' Side. The upper Surface of them is of ' a ſhining Green, the lower Side of a ' pale Green; and they are all yellowiſh at ' firſt. They are wav'd or curl'd at the ' Borders, which perhaps is owing to the ' Culture; and there is nothing aromatick ' nor uncommon in their Taſte. The ' biggeſt of them is about three Inches in ' Breadth, and four or five in Length, ' with ſhort Foot Stalks join'd to them.

Monſ. *La Roque* obſerves, ' that theſe ' Leaves are very like thoſe of the Limon ' Tree, (*Citronier*) but not ſo much point- ' ed; thinner, and of a darker green Co- ' lour. That the Branches are at no time ' altogether ſtrip'd of Leaves; that they ' ariſe moſt commonly in Pairs from the ' two oppoſite Sides of the Branches, and ' all in the ſame Plain, at ſmall Diſtances ' from one another.

CHAP.

CHAP. VII.

The Flower of the Coffee Plant.

THE Flower ariſes from the very Middle of the *Alæ foliorum*, or Juncture of the Leaves and Branches, by a ſmall green *Pedunculus*, or Foot Stalk, which tho' not above the eighth Part of an Inch in Length, may nevertheleſs be plainly perceiv'd not to run in the ſame Plain with the Branches, but to be a little inclin'd upwards; and for that Reaſon the reſt of the Flower appears to be ſituated not ſo much between the Leaf and Branch as above them both.

Round the Edges of the upper Extremity of the *Pedunculus*, ariſes the *Calix* or Cup of the Flower, and is preſently after divided into four or five ſmall Segments; two of which, commonly larger than the reſt, we may obſerve to be of the ſame Texture and Shape with the Leaves of the Plant, and to run up a little way upon the tubulous Part of the *Petalum*, at a little Diſtance from it; for this Reaſon, and alſo becauſe the Foot Stalk being ſo very ſhort, it is not always eaſy to diſtinguiſh whether theſe Segments ariſe from it, or immediately from the *Alæ*; they might equally be ſuppos'd to be the Beginnings of new Leaves ſpringing out with the Flower, only that they decay ſoon after it, leaving the Fruit naked. This evidently proves that they are all of the Nature of a *Calix*, the Uſe of which is to ſerve firſt for a *Perianthium*, before the Flower is quite blown, and afterwards to defend the tender *Ovarium*.

OVARIUM.

This *Ovarium*, or Seed Veſſel, is fix'd to the upper Extremity of the *Pedunculus* within the *Calix*; and conſider'd in this State, that is, as making a Part of the Flower, it is only a ſmall green Globule, in which nothing farther can with Certainty be diſtinguiſh'd, till after the Decay of the Flower. Then it begins to ſwell, and by degrees advances to a perfect Maturity, as we ſhall ſee in deſcribing the Coffee Fruit.

PETALUM.

From the Top of the Seed Veſſel ſprings the *Petalum* of this Flower, by a tubulous Beginning, but it is afterwards parted moſt commonly into five Segments, ſometimes into four or three only. The lower or tubulated Part is exactly in the Shape of the Neck of a common Funnel, being narrower at Bottom than at Top; and the Length of it is between a quarter and three eighth Parts of an Inch. The Segments do not run up from it in a ſtrait Line, but go off almoſt at right Angles, and ſo form rather a *Diſcus*, than the upper Part of an *Infundibulum*, in the Senſe aſſigned to theſe Terms by *Tournefort*. They are all pretty much of an equal Length in the ſame Flower, being commonly about half an Inch. Neither do they differ any other ways in Figure, ſave only that ſome of them continue of an equal Breadth thro' their whole Length, others begin, a little way from their Extremity, to contract by degrees. The Colour of both Parts and both Sides of the *Petalum* is the ſame, a very pure white; which however I have ſometimes obſerv'd to be brighter in the Segments than in the *Tubulus*.

STAMINA.

The *Stamina* ariſe from the Inſide of the lower Part of the *Petalum*, always equal in Number to the Segments thereof, of a white Colour, and a very ſmall Size. Before they reach as high as the Origin of the Segments, they ceaſe to adhere to the *Tubulus*, and run up a little way above it, being, as far as they are diſtinctly viſible, never above three eighth Parts of an Inch in Length.

APICES.

To each of the *Stamina* is join'd an *Apex* or Pendant, ſomething longer than they are, and of a very different Figure. I know nothing they can be ſo juſtly compar'd to as the Claws of ſome ſmall Birds; for they are crooked or bent ſulcated on the concave Side, and bigger at Bottom than at Top. In this *Sulcus* the *Stamina* are fix'd, a little above the lower Extremity; ſo that theſe and the *Apices* have an oblique Situation, with reſpect to one another. All the convex Side of the *Apices* is of a whitiſh yellow Colour, the concave Side of a dark brown.

STYLUS.

The *Stylus* is a long ſtrait ſmall white Tube, ſpringing from the Middle of the upper Side of the *Ovarium* within the *Petalum*, thro' the hollow Part of which it aſcends in the very Center of the *Stamina* and *Apices*. In this manner it runs up for near an Inch, and then the upper Extremity of it divides, and the two Portions of about a quarter of an Inch or ſometimes more in Length, either both fall back in Form of a circular Arch or Hook, in an oppoſite Situation to one another, or one of them only; the other remaining ſtrait, and then the whole appears not unlike a Water-man's Boat-hook.

Such is the Structure of a perfect Coffee Flower. The Progreſs of it comes next to be examin'd, from the time of its firſt Appearance, wholly inclos'd in the *Calix* or *Perianthium*, till it totally waſts and decays. It is hardly ever diſtinctly viſible till having broke thro' that Caſe, it ſhews it ſelf in the Shape of a white round Bloſſom, the whole Flower being then wrapt up in that Manner. As it begins to unfold, the firſt thing we begin to diſcover further, is the forked Extremity of the *Stylus*, and the Explication of the whole Flower follows ſoon after, there being ſeldom above twenty four Hours between that and the Appearance of the white Bloſſom: The Decay of it comes on as faſt; its Prime rarely out-laſting the Space of one Day. It continues for ſome time longer in a fading State, the *Petalum* turning inſenſibly brown; and afterwards this and all the other Parts of the Flower ſoon vaniſh and die.

We ſhall hear from Monſ. *La Roque* what are the flowering Seaſons of this Plant in *Arabia Felix*. I have never ſeen it flower here in *England* at any other time than between the End of *June* and Middle of *Auguſt*; tho' I doubt not but that ſome may appear after that Month is paſt.

Mr. *Ray* very juſtly complains that no Author had given any Account of the Flower of this Plant, at the time when he wrote; and *Langius*, even after the Plant it ſelf had found its way to *Europe*, repeats the ſame Complaint, and had equal Reaſon for it; for till after his *Lectiones Materiæ Medicæ* was publiſh'd, I do not find ſo much as one Obſervation about this Flower, except one mention'd by *Struſius*, from an *Arabian* Phyſician, namely, that it is white.

The firſt Deſcriptions we have of it were taken from the Plants in the *Amſterdam* Garden; and all Authors who have mention'd it agree that it is very much akin to the Flower of the Jeſſamin. From hence *Commelinus* deriv'd its Name; and he has likewiſe taken Notice of the Colour and Smell of the *Petala*.

That this Flower reſembles that of the Jeſſamin, as much or more than any other, may be very true; but ſtill there is a vaſt Diſparity between them. In the Jeſſamin Flower the *Pedunculus* is twenty times longer, the united Part of the *Calix* much

larger, and the Segments only ſmall Filaments or *Laciniæ*; the Seed Veſſel is quite of a different Structure; the tubulated Part of the Flower bears a much greater Proportion to the Segments in Length, and the Colour of it is rather green than white; the Segments are differently ſhap'd, and the Number of them much more various and uncertain. In fine, the *Stamina*, *Apices* and *Stylus* have almoſt nothing in common in the two Flowers, ſave only that they are deſign'd for the ſame Ends.

Volkamerus had an Opportunity of examining this Flower in *Germany*, and he has obſerv'd about it, That it is of the perfect Kind; (in Oppoſition, I ſuppoſe, to thoſe which Botaniſts term ſtamineous Flowers, called by M. *Vaillant* incomplete, or imperfect;) that it is extremely beautiful, and of a ſtrong and agreeable Smell; that it is of the monopetalous Kind, ariſing by a long Tube, and afterwards parted into five Segments; of a white Colour, and very large. Upon all which Accounts, and others likewiſe taken from the Fruit, he concludes that *Commelinus* was very much in the right to make it a Species of Jeſſamin.

Theſe Obſervations relate only to the *Petalum*; but Mr. *Bradley*, who knew very well that the other Parts of which Flowers conſiſt are in a philoſophical Senſe the moſt eſſential Parts of them, has not ſuffer'd theſe to paſs unregarded. 'The 'Flowers, ſays he, put forth in Cluſters 'at the Joints, towards the Extremities of 'the Branches, and are in Figure, Size and 'Colour, the ſame with thoſe of the com-'mon Jeſſamin, with the Addition only 'of five yellow *Apices*, which hang looſely 'on the Top of the Flower, and a Style 'which projects near half an Inch above 'it. The Smell of the Flower, he adds, 'is faint, and not worth our Notice.

In his other Writings, he ſtill inſiſts upon the Likeneſs of this Flower to the Jeſſamin; and in the lateſt of them he tells us, 'that every Day confirms him more and 'more that the Coffee Plant is of this Tribe.

About the Time of flowering he has likewiſe obſerv'd, that in the *Amſterdam* Garden it begins in *July*, and laſts till *October*.

Monſ. *De Juſſieu* deſcribes the Flowers in this Manner: 'From the *Alæ* of moſt 'of the Leaves ariſe the Flowers, ſome-'times five in Number, with ſhort Foot-'Stalks. They are all white, of one Piece, 'and of equal Bigneſs, very much like 'to thoſe of the *Spaniſh* Jeſſamin, only that 'the Tube is ſhorter, and the Segments 'not ſo broad; the *Stamina* five in Num-'ber, whereas our Jeſſamins have but two. 'Theſe *Stamina* riſe above the tubulous 'Part of the Flower, and ſurround a forked '*Stylus* ſituated upon the Embrio of the 'Fruit or *Piſtillum*, which lies within the '*Calix*. The *Calix* is green, divided into 'four pointed Segments, the oppoſite Pairs 'of which are unequal in Size. Theſe 'Flowers have a very pleaſant Smell, but 'are of very ſhort Duration.

La Roque, very much to the ſame Purpoſe, acquaints us that 'the Flowers are 'white, very like the Jeſſamin, conſiſting 'of five little ſhort Leaves (*feuilles*) their 'Smell is very agreeable, with ſomething 'balſamick in it; but the Taſte is bitter. 'They ariſe from the Place where the Foot-'Stalks of the Leaves are joined to the 'Branches.

'In almoſt all Seaſons of the Year, continues this Author, 'there are Trees 'to be ſeen in Flower in *Arabia*; but in 'that Plant which he ſaw at *Paris*, ſome of 'the Flowers were in bloſſom only, others 'perfectly blown in the beginning of *Sep-'tember*.

CHAP.

CHAP. VIII.

The Coffee Fruit.

TO the Flowers of the Coffee Plant, ſucceeds the Fruit; which, as it is the only Part of the Plant that is uſed, will require to be treated at more Length than the reſt. In order to do this with the greater Clearneſs, I have thought it convenient to throw all that I have to ſay upon this Subject into three diſtinct Articles; in the firſt of which I ſhall examine the whole outward Appearance and Coverings of the Fruit; in the ſecond, the *Nuclei* or Kernels which theſe Coverings incloſe; and in the third, the ſeminal Plant, or true Seed: And under each of theſe Heads I ſhall ſubjoin ſuch a Part of the hiſtorical Remarks about the whole Fruit, as belongs to what is there treated. I ſhould willingly have added a fourth Article, no leſs curious and entertaining than the reſt, concerning the Progreſs of the Fruit from the Time that the Flower decays, and the *Vaſculum ſeminale* begins to ſwell, till it arrives at a State of perfect Maturity, in which I here conſider it; but in order to do that with all the Accuracy that is neceſſary, I muſt have deſtroy'd a great many more freſh Berries than I could poſſibly obtain in this Place. I have been obliged therefore to content my ſelf with remarking the Changes that may be perceiv'd while the Fruit remains upon the Tree; and as theſe only regard the Size and Colour of the *Pericarpium* or Coverings of the freſh Fruit, I have ſet them down in the Article which is deſtin'd for theſe.

ART. I.

The Coverings of the Coffee Fruit.

IN a freſh Berry theſe Coverings may in a proper Senſe be term'd the *Pericarpium* of the Fruit; and therefore all that relates to the outward Appearance thereof can only be taken from this. The Situation of the Fruit upon the Trees, is the ſame with that of the Flower, to which it ſucceeds; only the Foot-Stalk ſhoots out by degrees to a greater Length, being, when the Fruit is ripe, above a quarter of an Inch long, its green Colour ſtill continuing.

The

The Colour of the Fruit it ſelf is at firſt green, which as it advances in Age and Size gradually changes, firſt to a red, and then paſſing from one degree of that Colour to another, becomes very dark by the time that the Fruit is ripe. In all States it is of an oval or ſpheroidical Figure, not unlike the *Cornelian* Cherry; and I never found the longeſt Diameter of it to meaſure much above half an Inch; nor the greateſt Circumference above an Inch and an half. The tranſverſe Diameter in theſe ſame Berries was about ſeven ſixteenth Parts of an Inch; and the Circumference that way an Inch and three eighth Parts. The Weight of the whole about eight Grains.

The Pulp and Inſide of the *Pericarpium* is of a light red Colour, but this laſt is variegated with many Streaks of white; even when the Fruit is come to Maturity; this Covering is not very thick, and there appear no Signs then of its being lined with any inner Membrane; the *Septum* by which the two Kernels are parted, is ſtill mucilaginous; and both of them are cover'd with a thick Subſtance, of the ſame Kind out of which the firſt of the proper Coats is probably form'd by drying; the ſecond being viſible already.

Theſe few Remarks concerning the Size, Appearance and Subſtance of the *Pericarpium*, are all which it is neceſſary to make about the freſh Fruit, as diſtinguiſh'd from the dry'd Berries. We ſhall ſee in another Place in what manner this is perform'd; and as the chief Deſign of it is that the Husks and Kernels may afterwards be eaſily ſeparated; it is not often that we meet with many dry'd Berries intire in theſe Parts. I have however been at Pains to pick out a conſiderable Quantity from Bales of raw Coffee at the Drugſters, and ſome of them I found to contain two perfect Kernels in one common Husk, others one only; I ſay perfect Kernels, becauſe even in thoſe that are ſingle, there are moſt commonly, if not always, ſome Remains of the abortive Kernel lying like a *Clypeus* or Target upon the other, as ſhall be explain'd more particularly afterwards. I have always obſerv'd, that the Number of ſuch entire ſingle Berries in each Bale exceeded the double ones; at a Medium of all the Tryals I made, the Proportion of them was nearly as ſeven to one. The Reaſon why we have any entire Berries at all imported can be no other than that they are ſmaller than the reſt, and ſo eſcape the Roller which the *Arabians* make Uſe of to take off the Husks; and as there are fewer double Berries of that ſmall Size than ſingle ones, a greater Number of theſe muſt remain with the Husks on.

Theſe two Sorts of Berries differ from one another in Figure; neither are all of each Kind entirely alike. The ſingle ones are moſtly of an oblong oval Figure, except where the Prominence form'd by the abortive Kernel makes a ſmall Variation; the others, eſpecially the ſmaller Sort, are more nearly round, with a ſenſible Depreſſure on both Sides, running from the Foot Stalk to the other End; and by theſe Marks it may be eaſily known whether a Berry be ſingle or double, without taking off the Husk.

The Length of the ſingle Berries I have always found between half an Inch and a quarter; the tranſverſe Circumference from an Inch to five eighth Parts; and the Weight from five Grains to one. The double ones meaſur'd from three eighth Parts to a quarter of an Inch in Length; from an Inch and one eighth Part to ſomething leſs than an Inch in Circumference; and weigh'd from four Grains to ſeven eighth Parts of one Grain; and by theſe Dimenſions it appears that the double Berries may as eaſily miſs the Roller as the ſingle ones.

From this general View of the intire dry'd Berries, I go on to the *Coverings* in particular. Theſe are always three in Number; one common to both Kernels, and two proper to each of them. The common and outermoſt Covering is only the *Pericarpium* dry'd; and in ſome Berries it is very much ſhrivell'd, wrinkly, uneven, and as it were furrow'd, being of a blackiſh or dark brown Colour. In others, eſpecially the double Berries, it is ſmoother, and of a lighter ſhining brown.

The upper Extremity of this Covering, or that which is oppoſite to the Foot Stalk, terminates in an *Umbilicus*, as it is call'd by Monſ. *De Juſſieu*, which looks as if a circular Impreſſion had been made upon it, with a pretty deep Hole in the Center thereof; this Circle is nothing but the Veſtige of the tubulous Part of the Flower ſtill remaining, as the Hole is of the *Stylus*; for upon that Part of the *Ovarium* they both ſtood.

Upon boiling, or long ſteeping in Water, this Coat becomes ſo ſoft that it may eaſily be ſcrap'd off; but if macerated only a little it grows thick, and may be taken off without being deſtroy'd, if cut in two equal Parts; and by ſo doing I have obſerved, that in many Berries it is conſiderably thicker near the *Umbilicus*, than in any other Part.

This *Involucrum* is always multicapſular, being divided moſt commonly into two Cells or *Loculamenta*, as Botaniſts expreſs it; and ſometimes, tho' very rarely, into three. The *Septum* or Partition by which theſe Cells are form'd, may here be very diſtinctly perceiv'd to be a thin fine Membrane, of a different Subſtance

from the outer Coat, and dividing the Cavity of it into two equal Parts, in each of which is lodged one Kernel, involv'd in its two proper Coverings. Thro' the Middle of it, lengthways, runs a Branch or *Faſciculus* of ligneous Fibres, continued probably from the Foot Stalk, and ſerving to convey Nouriſhment to the tender *Fœtus*. In examining the outer Coverings of ſome Berries, I have been often inclined to believe that the whole Cavity of them was lined with an inner Membrane, really diſtinct from the pulpy Part of the Coat; and perhaps this *Septum* may be only a Production or Elongation thereof, continued on both Sides to the *Faſciculus* of Fibres already mention'd: But whatever Way it be form'd, as it adheres inſeparably to theſe Fibres it has all the Properties of a true Partition, and therefore the Seed Veſſel it ſelf is certainly *multicapſular*. In thoſe I have for Diſtinction's ſake call'd ſingle Berries, this *Septum* is ſtill to be ſeen between the abortive Kernel and the other; but then it no longer occupies the Middle of the Cavity, but is thruſt out of its Place, and by that means very much impair'd.

The ſecond Covering, or firſt of the proper Coats, may be truly reckon'd a *Cortex* or Shell, being very ſtrong and hard, but withal very brittle; and, if I miſtake not, the Conſiſtence of it muſt be in a great meaſure owing to the drying of the Berries, for in all the freſh Berries I ever had an Opportunity of examining, it was ſoft and mucilaginous. I am ſurprized that they who contend that the Coffee Fruit is of the Nut Kind, as diſtinguiſh'd from a Berry, have not made uſe of this Coat to prove it. The Difficulty it ſelf is indeed a meer trifling about Words; the Signification of theſe Terms *Nut* and *Berry*, being, as far as I can find, hitherto unſettled among Botaniſts.

Since this is a proper Coat, it muſt either be continued over the *Sulcus* or *Rima* in each Kernel, or terminate at both Sides, ſomewhere on the Edges of it. Which of theſe is true in fact, I cannot with Certainty determine; I am apt to imagine the laſt; and that therefore by means of this *Sulcus*, the Fibres in the *Septum* always placed oppoſite to it, may have ſome Communication with the Kernel it ſelf, or at leaſt with the inner Covering of it.

The Colour of this ſecond or cortical Coat, is moſtly that of a Limon, only a little more inclined to red, and the Figure of it always the ſame with the Kernel it incloſes.

The third or innermoſt Covering, which becauſe of its Colour may be call'd the Silver Coat, is made up of a very fine thin Membrane, ſurrounding not only the outſide of the Kernel, but

alſo

alſo the Proceſs which lies in the Cavity of it, as ſhall be preſently ſhewn. The two Sides of it enter the *Sulcus* of the Kernel, and there jointly form a double *Lamina*, which is from thence continued quite over the Proceſs; and to that, as well as to the reſt of the Kernel, this Coat adheres very cloſe. I have never been able to diſtinguiſh either of theſe Coats in an abortive Kernel.

The moſt ancient Author by whom I find the Coffee Fruit mention'd, is *Rauwolfius*, who was in the *Levant* in 1573, and he has obſerv'd, that both in Bigneſs, Shape and Colour, it is like the Bay Berry. It is the dry'd Fruit *Rauwolfius* here talks of, and the Compariſon he makes of theſe to the Bay Berries, is not much amiſs, only theſe laſt are commonly larger than the entire Coffee Berries we meet with in theſe Parts. He adds, that the Fruit is ſurrounded by two thin Shells, which contain two Grains in two diſtinct Cells. Theſe two Shells are probably the common and firſt of the outer Coats; which are all that have been taken Notice of by any Writer ſince his Time. What he has ſaid about the two Cells is very indiſtinct, and yet it is more than has been ſaid by any Body ſince.

Next to *Rauwolfius*, is *Proſper Alpinus*, who was in *Egypt* in 1580; what he has ſaid about the Coffee Fruit is but very little, neither is it certain whether he means the entire Berry, or the Kernel only.

Cluſius has obſerved upon this Subject, that the Coffee Fruit is ſmall, yet ſomething bigger and more oblong than that of the *Fagara*, with a kind of *Sulcus* running lengthwiſe on both Sides of it, being cover'd with a thin Cortex of a dark aſh Colour.

Gerrard has done nothing but copy *Cluſius*'s Figures, which he has placed by Miſtake among the *Indian* Fruits; and *Johnſon*, in his Editions, has added *Cluſius*'s Text to his Figures.

J. B. tells us that this Fruit is hardly bigger than the Seeds of the *Ricinus*, of the Shape of an Olive, with a *Sulcus* or *Lacuna*, ſometimes on one Side, ſometimes on both. By this laſt can only be underſtood, that the Depreſſure is not always alike perceivable on both Sides of the Fruit. This Author has likewiſe taken notice that the Fruit conſiſts of two Shells, whereof the outermoſt is thick and black; the other thin, and red on that Side which lies next the Kernel, on the upper Side of an aſh Colour.

Petrus de la Valle ſays only, that the Grains of which Coffee is made are of an oval Figure, and about the Bigneſs of a ſmall Olive. And *Olearius* compares the Size of it to that of a ſmall Bean.

Veſlingius informs us of the Difference he had obſerv'd in *Egypt* between the Taſte of the Coverings and that of the Kernel: The firſt, he ſays, is in ſome Degree acid, the other very ſenſibly bitter. This Diſtinction we need not be very ſollicitous about, for in however great Requeſt the Shells may be in *Arabia Felix*, and the Countries which lie near it, on account of the Liquor there made of them, call'd by way of Excellency, *Café a la Sultane*; yet but a ſmall Quantity of them ever comes into *Europe*, and before they get hither they have pretty much loſt their Taſte, and every other ſenſible Quality that is worth minding about them.

According to *Parkinſon*, the Coffee Fruit is ſomewhat bigger than a hazel Nut, and longer, round alſo and pointed at one End, furrow'd alſo on both Sides, yet on one Side more conſpicuouſly than on the other. He tells us likewiſe, that the outer Coat is a thin Shell of a darkiſh aſh Colour, and the other he calls a yellowiſh Skin. All this ſhews plainly enough that *Parkinſon* had ſeen the Coffee Fruit, but withal, that he had been at very little Pains to examine it.

Baneſius aſſures us, that the intire Fruit is ſomething like the Cacao, but cleft along the Middle like a date Stone, and cover'd by a Shell or Husk.

Dr. *Grew* has ſaid nothing about the Coffee Fruit in particular; but ſince, by what we ſhall ſee afterwards, he appears to have examin'd it very exactly; and has often declar'd, that in the far greateſt Part of Seeds there are three *Involucra*, it is reaſonable to ſuppoſe that all thoſe I have deſcrib'd were known to him.

Dr. *Robinſon*, in his Letter to Mr. *Ray*, informs us that the intire Fruit is round on one Side, and flat on the other; but what we have principally to remark from this otherwiſe judicious Botaniſt, is the Manner in which he endeavours to prove that this Fruit is of the Nut Kind, in which I think he has come very far ſhort of his uſual Accuracy: ‘ The intire Fruit, ſays he, is co-
‘ ver'd with two Skins; the exterior Skin,

'or rather Shell (being as thick almoſt as 'that of a *Piſtachio*) is of a dark Colour; 'the ſecond, or interior Membrane, that 'covers the Kernels is much finer, and of 'a yellowiſh white Colour. Under this 'ſecond Skin lie generally two Kernels, 'ſometimes one.

What Part of this Nut ought to be reckon'd the Kernel is eaſily determin'd: As for the Shell, I have already taken Notice, that the firſt of the proper Coats ſeems beſt to anſwer that: Dr. *Robinſon* has choſen the common or outer Coat, and he is in the right to ſay it is almoſt as thick as that of the Piſtachoe; but then, if I am not miſtaken, it is not by virtue of that outer Coat that the *Piſtachoe* is call'd a Nut, but on account of a hard Shell that lies under it, to which the outer Coat of the Coffee Fruit has no Reſemblance, neither in Subſtance nor Situation. By what he ſays further, that under this ſecond Skin lie generally two Kernels, it would ſeem that he look'd upon it not as a proper but as a common Coat, as much as the other; but how this can be, I do not ſo well underſtand, ſince not only each Kernel in particular is quite ſurrounded by this Coat; but being thus involv'd, is intirely ſeparated from the other by means of the *Septum*. In fine, by the Date of this Letter it appears that it was written the Year before the ſecond Volume of Mr. *Ray*'s *Hiſtory of Plants* was publiſh'd; and therefore it may ſeem ſtrange, that after all the Pains this Author had been at, he ſhould not have been able to perſuade his Correſpondent to rank his Coffee *Frutex* not among the bacciferous Plants, as he has done, but among the nuciferous. The Difference however lay, probably, in the Uſe of a Word only, Mr. *Ray*'s *Arbores nuciferæ fructu per maturitatem ſicco*, being, as he himſelf informs us, in every thing, except in Size, the ſame with the *Bacciferæ* of that kind.

What I have hitherto remark'd concerning the Reſemblance of the Coffee Fruit to a Nut, muſt be underſtood of the dry Berries only; for in the freſh Fruit all the Coverings are ſo perfectly ſoft and pulpy, that they can in no Senſe, neither ſingly nor together, be ſaid to form a Shell. And whether a Fruit, which while it hangs upon the Tree is certainly not a Nut, can afterwards, by drying, be changed into one, I leave to thoſe who are better vers'd than I in ſuch Diſtinctions, to determine.

There is nothing but Repetitions to be met with in the other Author, before the Year 1694, in which Sir *Hans Sloane* informs us that the Fruit comes out *ex alis foliorum*, hanging or ſticking to the Twigs by Inch-long Strings or Foot-Stalks; and ſometimes one, two or more at the ſame Place.

Both *Lemerys* obſerve that this is a ſmall longiſh Fruit, round like a *Pignon* (which I ſuppoſe to be the Seed of the *Ricinus Americanus*) and that the *Cortex* is a pretty hard ligneous Husk.

In *Tournefort*'s poſthumous Treatiſe of the *Materia Medica*, we are told that the Seeds are incloſed in Husks; for the moſt part conſiſting but of one Cell, ſometimes of two. By this I ſuppoſe the Author means no more, than that for the moſt part each Husk contains but one Seed. This is true with reſpect to the intire Coffee Fruit that is imported into *Europe*: but with reſpect to all the Coffee Fruit produced in *Arabia Felix*, juſt the contrary is to be ſaid.

Volkamerus, who had ſeen the Coffee Plant in a bearing State, tells us that the Fruit conſiſts of two Kernels lying upon one another, included in a juicy *Pericarpium*; and from thence he concludes that the Plant it ſelf ought to be ranked among the bacciferous Kind.

Mr. *Bradley*, in his firſt Treatiſe, obſerves, that 'about *October* theſe Trees have 'done blowing, and then they are com-'monly well ſet with green Fruit, which 'hang on them till the *July* following be-'fore they are ripe; they reſemble at that 'time the Berries of the *Lauro Ceraſus*, or 'Bay Cherry, and are much of the ſame 'Shape and Colour, (*i. e.* of a dark red) 'but inſtead of a ſingle Stone, theſe have 'two Kernels which ſplit in the Middle, 'like the Bay Berries of the Shops.' He has ſaid nothing further about the Coffee Fruit in any of his later Works.

What belongs to this Article, from M. *De Jeſſieu* is, That 'the Embrio or young 'Fruit grows nearly to the Bigneſs of a 'Heart-Cherry, and is pretty much of the 'ſame Figure with it; but that when it is 'perfectly ripe and dry, it is reduced to 'the Size of a Laurel Berry. The Fruit 'ends in an *Umbilicus*, being at firſt of a 'light green Colour, then reddiſh; after-'wards of a very beautiful red, and when 'perfectly ripe, of a dark red. The Pulp 'is glairous, or mucilaginous, of an un-'pleaſant Taſte, and when dried becomes 'like that of a black Prune. Under this 'Pulp lie two thin oval Coats, cloſely ad-'hering together, convex on one Side, and 'flat on the other, by which they touch; 'and of a yellowiſh white Colour.

Monſ. *La Roque*, much to the ſame Purpoſe, acquaints us, that 'to every Flower 'ſucceeds a ſmall Fruit, but which by de-

‘ grees grows to the Size of a large Cher-
‘ ry, in which State it is very good to
‘ eat. It adheres to the Tree by a ſmall
‘ ſhort Foot-Stalk, and when perfectly
‘ ripe is not much bigger than a Laurel Ber-
‘ ry. It comes out between the Leaves
‘ and Branches. At firſt it is green, but
‘ grows red as it ripens; and the Sun hav-
‘ ing dry'd this red Pulp, it becomes a
‘ Husk of a dark brown Colour, which
‘ makes the firſt or outer Cortex of the
‘ Coffee Bean, and within it lies another
‘ thin Membrane, which makes the ſecond
‘ or inner Cortex.

M. *Miller* has only told us, ‘ that in the
‘ Coffee Plant the Flowers are ſucceeded by
‘ Berries, and that each Berry includes two
‘ Seeds in an inner thin Skin.

ART. II.

The Kernels of the Coffee Fruit.

ALL the Coverings deſcrib'd in the laſt Article being remov'd, the Kernel it ſelf comes next to be examin'd; the Colour of which, to begin by that, varies according to the Freſhneſs, Goodneſs, and Place of Growth of the Berry; ſome of them have a Caſt of green, ſome are whitiſh, ſome dark or brown, and if damaged by ſalt Water, they are perfectly black.

The Figure of the Kernels varies likewiſe; but that is principally determin'd by the Number of them in the ſame Berry. The ſingle ones, filling up the whole Cavity, have Liberty to extend themſelves on all Sides, and conſequently the Figure of them is that of a longiſh Oval, with a Cleft on one Side, upon which lies the abortive Kernel, as has been already ſaid, in Form of a *Clypeus* or Target, very thin, and of a circular Figure, a little depreſs'd on one Side, to accommodate it ſelf to the other. The double Kernels, for the ſame Reaſon, are nearly oblong Hemiſpheroids, being convex on the back Side, and flat on that by which they join one another; and in moſt of them it may be remark'd that they are a ſmall matter bigger at one End than at the other. Thro' the Middle of the flat Side of each, runs a *Sulcus* or *Rima* lengthwiſe, generally narrower than that of the ſingle Berries. The Figure of the triple Kernels is likewiſe to be determin'd by their Situation in the Seed Veſſel; but of ſuch I believe very few are to be found.

The far greateſt Part of the Coffee that is imported into *Europe*, conſiſts of ſuch Kernels as have been double in the ſame Fruit, and the Dimenſions and Weight of all the Kinds thereof may be gueſs'd at by thoſe taken at a Medium from the Kernels that are brought us by the Way of *Turkey*, and thoſe that come from *Java* in the *Eaſt Indies*. The greateſt Length of the firſt Sort is three eighth Parts of an Inch, Breadth one eighth Part, and Weight three Grains. Of the *Java* Coffee I found the

Length to be half an Inch, Breadth five ſixteenth Parts, and Weight five Grains and an half.

The principal Body of each Kernel conſiſts of an hard, callous, cartilage-like uniform Subſtance, made up of two *Laminæ*, firſt laid one upon another, and then rolled and folded up into the Figure we have juſt now deſcrib'd. Whoever views a tranſverſe Section of a Kernel, the firſt Idea of its Structure that preſents it ſelf to him will be undoubtedly that of a Body rowl'd up, as I have ſaid; but I think a more eaſy Way to conceive that fully, will be firſt to imagine two oblong hollow Hemiſpheroids caſed cloſely over one another, and cover'd with a Lid ſlit thro' the Middle lengthwiſe; and then that this Cavity is fill'd up by another Body, adhering to or proceeding from the whole under Part of one Side of the Lid, but looſe from the other, under which the Edge of it is turn'd up, ſo as to form a new kind of *Sulcus*, continuous with the former, tho' not always in the ſame right Line. This inner Body I know no better Way to expreſs, than by calling it a *Proceſs* ariſing from one Side of the Slit or *Sulcus* ſo often mention'd. The Structure of a ſingle Kernel is to be conceiv'd much after the ſame manner, only here the Slit is generally wider, the two Sides of it being not flat, but convex; and ſo appear rather to be a Continuation of the ſame Figure with that of the Backſide of the Kernel, than as a Lid laid over a Cavity. By this means likewiſe, the Figure of the Cavity varies, and that of the Proceſs along with it. In every thing elſe the Structure of both Kinds of Kernels is the ſame: And I have only theſe two Things further to obſerve about them.

Firſt, that the two *Lamina* of which they are compos'd, are not every where of the ſame Thickneſs; from whence it follows, that one Side of the Cavity is ſometimes ſhallower than the other. In the next Place, the Proceſs does not always come out from the ſame Side of the *Sulcus*; or, which is the ſame thing, the Kernel is not always rowl'd up one Way. By which I mean, that the Situation of all the Parts of the Kernel being once determin'd by that of the ſeminal Plant, (of which in the next Article,) the Proceſs will be found to adhere ſometimes to the right Side of the *Sulcus*, and ſometimes to the left.

Rauwolfius has taken Notice only of the Colour of the Kernels, and that, he ſays, is yellowiſh.

From *Alpinus* we learn, that the Kernels he found in *Egypt* were of a ſweet Taſte, mix'd with a little Bitterneſs, but no Sharpneſs. Whether he was altogether in the right in this, I leave to every Body's Experience to reſolve them.

Cluſius tells us that they are of a darkiſh yellow Colour, acid Taſte, and flat on one Side.

J.B. that 'the Coverings being remov'd, 'there appears a hard Kernel, much of the 'Shape of a date Stone, with an hollow run-'ning thro' it lengthwiſe; of a pale aſh Co-'lour, and a bitter unpleaſant Taſte; and that

'that all the way from the *Umbilicus* to the 'oppoſite Point, it appears as if it were di-'vided into two Grains *(ab umbilico ad oppoſitum mucronem gemina oſtentat grana.)* From the whole of what we have quoted from this Author, both here and in the laſt Article, it appears plainly that his Deſcription was taken from a Fruit with only one Kernel; and therefore it is not eaſy to gueſs the Meaning of the laſt Words of it. Conſidering the Place where they lie, I ſhould be inclin'd to think they were added by the Editors, for they are no ways of a Piece with the reſt; but if they do really belong to *Bauhinus*'s Text, I can make no more of them than this, That when a ſingle Kernel is view'd on that Side on which the *Sulcus* lies, it appears as if it were divided into two Grains.

But whatever be the true Meaning of them, I can find nothing in all this Deſcription that contradicts what we have heard from *Cluſius*; and therefore I cannot imagine the Reaſon why *J. B.* ſhould add, that tho' the outward Appearance of this Fruit anſwer'd in every thing to the Figures given us by *Cluſius*, yet there were other things in which they did not agree; and that therefore he durſt not ſay that his was the ſame with that from whence *Cluſius*'s Figures were taken. It may be his Scruple was grounded on this, that *Cluſius*'s Berries were double, and his own ſingle.

By *Olearius* the Colour of the Coffee Kernel is compar'd to that of common Wheat, and the Taſte to that of *Turkey* Wheat.

We have heard already, that according to *Veſlingius* the Taſte of them is very ſenſibly bitter.

Parkinſon informs us, that on each Side of the Huſk of the Coffee Fruit lieth a ſmall long white Kernel, flat on that Side they join together, of an acid Taſte, and ſomewhat bitter withal.

Baneſius diſtinguiſhes the Coffee Kernels into two Sorts, with reſpect to their Colour; one he ſays is whitiſh, the other of a darkiſh Citron Colour, tending towards a green; and theſe laſt are to be preferr'd to the firſt. All this is true enough in fact, but it ſeems to be owing to our Author's not having underſtood *Avicenna*, that ever he was ſo lucky as to obſerve it. *Avicenna* has told us the ſame thing of a Root which he calls *Bunchum*, and this *Baneſius* and others, as we ſhall afterwards hear, have miſtaken for the *Buna* or Coffee Fruit.

The curious Enquiries which the learned Dr. *Grew* made concerning the Seeds, as well as all the other Parts of Plants, have furniſh'd him with ſome very uncommon Obſervations concerning the Coffee Fruit in particular, beſides what he has ſaid about other Seeds, which will equally agree to it. Theſe laſt I leave to be conſulted in his excellent *Anatomy of Plants*; the others muſt not be omitted here. Having deſcrib'd the Coverings that belong to Seeds, which he proves, in the greateſt Part of them, to be three in Number, he obſerves, that in many there is a *Vitellum* or Body analogous thereto, which is neither Part of the true Seed, nor Part of the Covers; but diſtinct from them both. This he tells us makes ſometimes the principal Part of the Fruit, being much bigger than the true Seed it ſelf; and in enumerating the different Figures, Diſpoſitions, and other Properties of theſe *Vitella*, among the reſt he obſerves, that in Gooſegraſs or Cliver it is of a horny Subſtance, but ſhap'd ſomewhat like a Bonet with the Rims tuck'd in; and ſo in the Coffee Berry, but rowl'd or folded up into a kind of oval Figure, with a Notch or *Rima* running thro' the Length, where the two Ends meet. This Paſſage contains the only Hint that is to be met with in Authors concerning the true Structure of the Coffee Kernel; and I hope it will be ſtill better underſtood by the Account I now give of it.

Dr. *Robinſon* has obſerv'd but little about theſe Kernels; under the ſecond Skin, he ſays, lie generally two Kernels, ſometimes one, round on one Side and flat on the other. On the flat Side of the Kernel there is always a Slit or Mouth; ſo that every Kernel does exactly reſemble a *Concha veneris*.

Lemery compares the two together to a young Pea in Bigneſs; and ſays further, that they are of an oval Figure, eaſily parting into two Halves; of a yellowiſh Colour, with a Caſt of white.

Langius ſays the Kernel is of a mealy Taſte.

Tournefort, that the Seeds are hard, of a whitiſh aſh Colour, convex on one Side, flat on the other, and furrow'd; of a mealy Taſte, and without any Smell; five or ſix Lines in Length, and three in Thickneſs.

Chomel and *Andry* agree in every thing with *Tournefort*; only the laſt adds, that theſe Seeds are very heavy in proportion to their Bulk.

Mr. *Bradley*, as we have already heard, has obſerv'd that the Coffee Fruit has two Kernels, which ſplit in the Middle, like the Bay Berries of the Shops. It is true, the Coffee Kernels do ſplit in the Middle, and ſo do the Bay Berries of the Shops; but wherein the Likeneſs of their ſplitting conſiſts, I ſhould be glad to learn.

M. *De*

M. *De Jussieu*'s Obſervations about the Kernels are theſe: ‘ In each of the inner ‘ Coats is contain'd a callous oval Seed, ‘ arched on the back Side, and flat on the ‘ other, in the Middle of which is a pretty ‘ deep *Sulcus* running thro' its whole Length. ‘ Sometimes one of theſe Seeds proves a- ‘ bortive, and then the other grows com- ‘ monly bigger than it would otherwiſe ‘ have been; both Sides of it become more ‘ convex, and it fills up the whole Cavity ‘ of the Fruit.

Monſ. *La Roque* has added ſome new Obſervations ſtill, concerning the Progreſs or gradual Formation of theſe Kernels: ‘ Under the Pulp, ſays he, lies the Bean or ‘ Grain which we call Coffee; and even ‘ when the Fruit has arriv'd at its full ‘ Bigneſs the Bean is extremely tender, and ‘ of a diſagreeable Taſte; but as the Fruit ‘ ripens, it acquires by degrees a little more ‘ Solidity; and by the time that the Pulp ‘ is nearly dried up, the Bean is become ‘ pretty hard, and of a light green Colour, ‘ ſwimming in a thick brown and bitter ‘ Liquor.

Valentini tells us, that ‘ what is call'd Cof- ‘ fee, is nothing but the Kernels of certain ‘ ſmall Nuts, conſiſting of two Parts, like ‘ Beans, arch'd on the upper Side, flat and ‘ furrow'd on the other; of a dark yellow ‘ Colour, mealy Taſte, and Smell like that ‘ of burnt Beans. It is Pity this Author did not add, that it was the Smell of roaſt- ed Coffee he meant, and then the Compa- riſon would not be amiſs; neither are theſe two much different in Virtues, if we may believe the learned Doctor *Cheyne*.

ART. III.

The Seminal Plant, or true Coffee Seed.

WE have heard from Dr. *Grew*, that the main Body of the Kernel deſcrib'd in the laſt Article, is not the true Seed, but only a *Vitellum* or Body analogous thereto; which he ſometimes likewiſe calls the bulky or cartilaginous Cover of the Seed. As he is the only Author who has obſerv'd this Difference, ſo none but he has deſcrib'd what the true Seed, as diſtinguiſh'd from the *Vitellum*, really is. ‘ The *Fœtus*, or true Seed in the Coffee Ber- ‘ ry, ſays he, lies in the inner or cartilaginous Cover, where one ‘ would not expect to find it, near the Top or Surface of the ‘ Back. The Lobes of the Seed are vein'd like two very minute ‘ Leaves, and join'd to a long Root like a Stalk, the End of ‘ which comes juſt to the Bottom of the Cover, ready for its ‘ Exit into the Ground.” All this he has expreſs'd by five Figures in *Tab.* 77. of his *Anatomy of Plants*; whereof the firſt exhibits the hilly or furrow'd Side of the Coffee Berry; the ſecond, the Back; the third, the Back par'd a little, ſo as that the true Seed may appear *in ſitu*; the fourth, repreſents the true Seed taken out of the Kernel; and the fifth ſhews it very much magnify'd.

This is the Account which Dr. *Grew* has given us of the true Seed, (or, as it is call'd by *Malpighi*, and others ſince his Time, *the Seminal Plant*) of the Coffee Fruit; and whoever is acquainted with Dr. *Grew*'s Writings, knows, that according to him, in every Seminal Plant may be diſtinguiſh'd the Radicle, Lobes and Plume. This Remark was neceſſary in order to the underſtand-

ing

ing of ſome Terms which I ſhall be obliged to make uſe of in explaining what farther Obſervations I have made, both concerning the Situation and Structure of the Seminal Plant.

It lies between the two *Lamellæ* of the *Vitellum* or Body juſt now deſcrib'd, in a Bed exactly fitted to it, the *Radicle* always terminating at the Extremity of the *Sulcus*, which in an entire Kernel may be diſcover'd by a round Speck, of a different Colour from the reſt of the Surface. As the Back of the Kernel is convex, the Seminal Plant, to accommodate it ſelf to that Figure, is likewiſe bent upwards, and ſo lies crooked. The Poſition of it is not exactly according to the Length of the Kernel, or parallel to the longeſt Diameter of it, but oblique; it being all on one Side of the *Rima* (as may be ſeen by Candle-light, even with the naked Eye) in an entire macerated Kernel. It is not, however, always on the ſame Side, but ſometimes on the right, ſometimes on the left; and yet this Poſition is no ways caſual, but regulated by the Rowl or Fold of the Berry; that is, the Seminal Plant lies always on that Side of the *Sulcus* to which the *Proceſs* is fix'd.

When it is carefully taken out of the Kernel, the Figure of it reſembles nothing ſo much as the Ace of Spades in Cards, only the Radicle is longer in proportion to the Lobes, than the Handle of that Spade is commonly made. The Colour of it appears then lighter than that of the Kernel. And the *Radicle* or little Root, as far as I can perceive, is exactly round, and runs tapering from one End to the other; that to which the Lobes adhere being ſmalleſt, as is well expreſs'd in one of Dr. *Grew*'s Figures. The Lobes or Leaves may eaſily be ſeparated from one another all the Way to their Inſertion into the Radicle; but nothing like a Plume is diſcernible betwixt them.

I have only further to remark, that in the Situation of this Seminal Plant, as well as in the whole Structure of the Kernel, the Wiſdom and Contrivance of Nature is very diſcernible. The Extremity of the Radicle is placed in the weakeſt Part of the whole Kernel, and conſequently finds the eaſieſt Paſſage poſſible into the Ground; the two *Lamellæ* are there, as it were, only tuck'd in; and thus ſmall *Rimæ* or Chinks muſt neceſſarily be left, which in dry'd Kernels we ſee oftentimes increas'd to very ſenſible Clefts: Beſides, upon the leaſt Swelling of the Kernel in the Ground, theſe Folds muſt extend themſelves, and by this means likewiſe favour the Exit of the Radicle. Again, by the oblique Situation of the whole Seminal Plant, and always on that Side to which the Proceſs is fix'd, they lie in the moſt ſecure Part of the whole

Kernel, which would have been quite otherwiſe had they lain ſtrait, and ſo over the *Sulcus*. In fine, the Kernel it ſelf is roll'd up in the manner we ſee it, not only for the Security of the Seminal Plant, but alſo that it may unfold by more eaſy Degrees, according as the Lobes and Plume are ready to expand themſelves. The firſt of theſe Ends accounts likewiſe for the Neceſſity of the Proceſs, the ſecond for that of the *Rima* or *Sulcus*, and both of them for the Conveniency of a double *Lamina* in the Kernels. But as this unfolding will require Time, the Radicle probably gets a very ſure Footing in the Ground, before the Seminal Leaves reach the Surface of it.

CHAP. IX.

The Culture of the Coffee Plant in England.

HAving already publiſh'd an Account of the Management of this Plant in its native Country, *Arabia Felix*, I ſhall here confine my ſelf to the Culture of it in the Weſtern and eſpecially in the Northern Parts of *Europe*, the Directions to be obſerv'd herein being what it principally concerns us to be acquainted with. Very little has been publiſh'd on this Subject by any Author except Mr. *Bradley*, whoſe Obſervations I ſhall give in the ſame Order in which they appear'd; to theſe I ſhall ſubjoin the few Remarks which have been made by other Botaniſts; and then conclude with a Paper of Inſtructions communicated to me by an ingenious Gardiner, Mr. *Thomas Knowlton*, founded entirely on his own Experience.

In his firſt *Treatiſe on Coffee*, Mr. *Bradley* tells us, that 'the 'Coffee Plant having now found its Way into *England*, it may 'be neceſſary to offer ſome proper Directions for its Culture, 'agreeable with the Method obſervable in the *Amſterdam* Gar-'den. When we ſhall have an Opportunity to propagate theſe 'Trees from the Berries, we muſt then, immediately after they 'are gather'd, carefully take off the outſide Husk, and ſeparate 'the two Seeds which are found in each; clean them from the 'Pulp, and ſet them an Inch deep in Pots of fine Earth, which 'are already warm in a Bed prepar'd with Horſe-litter, keeping

‘ the Glaſſes cloſe cover'd for ſix Weeks, and often ſprinkling ‘ them with Water. From this Way of Management we may ‘ expect them to come up in leſs than two Months Time after ‘ ſowing. And then for their further Improvement, you are ‘ only to remark, they love Warmth, little Air, a light ſandy ‘ Earth, and much Water; and this laſt Hint anſwers to an Ob- ‘ ſervation of that great Naturaliſt Dr. *Sloane*, where he tells us ‘ *That the* Arabians *cut artificial Channels from the Rivers, on purpoſe* ‘ *to nouriſh theſe Plants.* Theſe Rules being well obſerv'd, we ‘ may expect them to bear Fruit in five Years Time from the ‘ putting in of the Seed.

From his *New Improvements in Planting and Gardening*, we learn, that ‘ in the Culture of this Plant the *Dutch* Gardiners ‘ prepare a Soil for it compos'd chiefly of Sand; and the Re- ‘ freſhings they give it with Water are ſeldom and ſparing in the ‘ Winter, but in the Summer it has a more plentiful Allowance, ‘ eſpecially during the Time of its Bloſſom. About *June* they ‘ take it out of the Houſe, and waſh and cleanſe the Leaves and ‘ Branches, and letting it remain in the Air till the Beginning ‘ of *July*, they then ſet it again in the Conſervatory for flower- ‘ ing. In *April* and *Auguſt* they give freſh Earth to the Plants, ‘ and they thrive extremely. In raiſing theſe Plants from the ‘ Seeds, they firſt ſeparate the Kernels in each Seed, and after ‘ they are clean'd from the Mucilage about them they are imme- ‘ diately ſet two Inches deep in Pots fill'd with ſandy Soil, and ‘ plung'd into Hot-beds. The Seeds, being thus order'd, muſt ‘ be kept moiſt by frequent Sprinklings of Water, till they come ‘ up, and the Glaſſes over them always kept cloſe. About ‘ ſix Weeks after ſowing they will begin to appear, and have ‘ two or three Leaves apiece before Winter. I have heard that ‘ unleſs the Seeds are ſown as ſoon as gather'd, they will not ‘ come up; and hitherto there is no other Way known of pro- ‘ pagating this Plant, but from Seeds: Tho' I think it would not ‘ be againſt Reaſon to try to inarch it upon ſome other Kind of ‘ Jaſmin.

In the ſecond Edition of his *Treatiſe of Coffee*, I find nothing material added to what we have ſet down from the firſt; but in his *Monthly Treatiſes* he has enlarg'd upon this Subject in ſeveral Places: The Sum of all he has ſaid comes to this, That ‘ in ‘ the *Amſterdam* Gardens the Coffee Trees are kept conſtantly in ‘ a Glaſs Caſe, which as near as I can gueſs, ſays he, is about ‘ fifteen Foot long, and about twelve Foot wide; the Height ‘ about twenty Foot; the Front is all Glaſs; under the Floor is

‘ an

‘ an Oven for Fire, which leads into Flues, that after their Paſ-
‘ ſage here and there, end in a Chimney, as other Stoves do.
‘ They uſe no Tanners Bark in this Houſe, nor give the Plants
‘ any Air all the Summer, but thro' little Caſements about a
‘ Foot ſquare, placed about the Middle of the great Windows
‘ or Pannels of Glaſs; and even theſe little Caſements are ſel-
‘ dom open'd, becauſe there is a Door which opens out of this
‘ Glaſs Caſe into a large Greenhouſe, which they commonly
‘ keep open in the Summer-time. Their Earth is very light.
‘ They begin to make the Fires in the Stoves in *October*, and con-
‘ tinue it conſtantly till the Weather is warm enough in the
‘ Spring for the Plant. I ſuppoſe this continued Fire in the
‘ Stoves is neceſſary to continue the Growth of the Plants, when
‘ the Juices are once flowing; for to warm the Houſe one Day,
‘ and let it cool the next, will certainly check the Growth of
‘ a Plant.

‘ It is obſervable, that when the Fruit is ripe, about the Be-
‘ ginning of *July*, it muſt be gather'd, and immediately the
‘ Seeds muſt be clear'd from the Pulp, and ſet in the Ground,
‘ otherwiſe they will not ſprout. This Particular the Gardiner
‘ at *Amſterdam*, Mr. *Cornelius*, obſerves diligently, and tho' I ſent
‘ ſome Berries freſh gather'd, by the Poſt, which were not above
‘ four Days in their Paſſage to *London*, to a very great Artiſt,
‘ they could not be made to grow; but when they are ſet imme-
‘ diately, he tells us, that even in the natural Earth, he has ſeen
‘ ſome Coffee Plants above Ground within three Weeks after the
‘ Seed was put in the Ground; but then they muſt not be put
‘ in promiſcuouſly in a Body of Earth, but planted an Inch or
‘ two deep in it. It is a Cuſtom there, twice or thrice in a
‘ Summer to clean the Leaves of the Coffee Plants with wet
‘ Spunges, which takes off the Duſt that ſtops the Pores of the
‘ Leaves. This I look upon to be of conſiderable Uſe, becauſe
‘ I ſuppoſe the Leaves to receive ſome Nouriſhment from the
‘ Air, which circulates about them; and conſequently the whole
‘ Plant is benefited by it. I obſerv'd likewiſe, that the Gardiner
‘ there gave them frequent Waterings, a little at a time, becauſe
‘ the Earth was very light; but eſpecially in the Summer, when
‘ the green Fruit was towards ripening, he gave them more Wa-
‘ ter than at other times, that is towards *June*.

Mr. *Bradley*'s lateſt Obſervations on the Culture of the Coffee Plant are contain'd in his *Appendix to his New Improvements*:
‘ I ſhall proceed, ſays he, to remark ſome Particulars relating to
‘ its Culture, which yet are not made publick. I have already

'given my Reaſons why I ſuppoſe it to be a *Jeſſamine*; and 'have in my New Improvements preſcrib'd the inarching of it 'upon the common Jeſſamine, as we do the Plant commonly 'known by the Name of the *Arabian Jeſſamine*, which I am per-'ſuaded will do very well, ſince every Day confirms me more 'and more that it is of that Tribe; however, I have heard from 'Mr. *Knowlton*, who was lately Gardiner to Dr. *Sherrard*, that 'in the Doctor's curious Gardens at *Eltham*, he rais'd the Coffee 'Trees both by Layers and Cuttings; ſo that if there may be 'ſome Difficulty in raiſing it from the Berry, there will be none 'in raiſing or propagating of it theſe Ways.

'But there is one thing which ſtill remains to be mention'd 'concerning the Management of the Coffee Tree, which I have 'only ſlightly touch'd upon in my New Improvements; and 'that is, the Neceſſity of waſhing the Leaves and Shoots about '*June*, and even in *September* too. This muſt be done with a 'Spunge and Water, and if there is ſome Tobacco ſteep'd in the 'Water, I believe it will do good, for I find that the Leaves 'and Stalks of the Coffee Tree are apt to be cover'd, about '*June* and *July*, with a kind of Mildew, ſuch as may be ob-'ſerv'd on the Flower Stalks of Collyflowers, which afterwards 'changes to little Inſects that will poiſon the Plant; theſe there-'fore ſhould be carefully waſh'd off as ſoon as we diſcover them, 'and is what is very ſtrictly obſerv'd by the Gardiners in *Holland*, 'not only in this Caſe, but in the Culture of every Stove Plant. 'They have People on purpoſe to clean the Leaves of their Houſe 'Plants, but more frequently the Coffee Tree than any other; 'and no Plants look better than theirs. I remember M. *Corne-'lius*, the curious Gardiner at the Phyſick Garden at *Amſterdam*, 'ſet ſome Seeds of the Coffee in a Pot which ſtood abroad, and 'they came up, and made as good an Appearance as any of thoſe 'that were rais'd in the Bark Bed.

By theſe different Steps has Mr. *Bradley* arriv'd at that Degree of Inſight into the true Method of cultivating the Coffee Tree, which he is at preſent Maſter of. His Knowledge thereof he owns to be owing, in a great meaſure, to what he obſerv'd in the *Amſterdam* Garden; but what I wonder at is, that in his lateſt Performances theſe Obſervations do not always agree with thoſe publiſh'd in the former, that is nearer the time in which he had made them. For ſome Things likewiſe he has been oblig'd to M. *Knowlton*, whoſe Thoughts upon this Subject we ſhall hear preſently at more Length, after we have mention'd a few Remarks more concerning the Culture of this Plant, from Meſſieurs *De Juſſieu* and *Tilli*.

The firſt of theſe Authors has told us only, that if the Seeds are not immediately ſet as ſoon as gather'd, they will never germinate; and that of this he has had ſeveral Proofs himſelf from Tryals made in the Royal Garden at *Paris*.

Tilli remarks further, That in the Garden of *Piſa*, during the Month of *Auguſt*, he has ventur'd to take this Plant out of the Stove, and ſet it under the Shade of ſome other Tree in the open Air, and that it was ſo far from ſuffering any Damage, that it throve the better for ſo doing.

M. *Knowlton*'s Account of the Culture of the Coffee Plant, is in a Letter dated at *Petworth* in *Suſſex*, *Feb.* 4. 1725-6, and beſides the Diſcoveries it contains, it deſerves to be valued for this Reaſon likewiſe, becauſe the Directions he gives are all taken from his own Experience of what he found to anſwer beſt, not from Conjectures and Hear-ſay only. They may therefore be ſecurely depended on by all who have a mind to cultivate this Plant in *England*.

'In the latter End of *July*, 1723, ſays he, the worthy Doctor '*Sherrard* (with whoſe Brother I then liv'd) brought over from 'the Phyſick Garden of *Amſterdam*, one Coffee Tree of about 'three Foot high, and one Berry. The Berry, carefully co-'ver'd over with Wax, was given to me, with ſome Directions 'relating to the Culture of it, from *Cornelius Voſs*, Gardiner at '*Amſterdam*; but theſe being no ways agreeable to my own No-'tion, nor to the Practice of Gardening here in *England*, I begg'd 'Leave to uſe my own Skill, without being confin'd to them. 'The Berry being open'd, parted into two Seeds, and having 'prepar'd a good freſh rich ſandy Soil, I put them into a ſmall 'Pot fill'd therewith, about two Inches deep, and immediately 'after plung'd the Pot into a temperate Hot-bed. In about four 'or five Weeks afterwards I had the Pleaſure of ſeeing one of 'them come up, with his Cap on his Head; and the other fol-'low'd in a Week afterwards. They continu'd growing very faſt 'both Winter and Summer alike, and in a Twelvemonth's Time 'were above two Foot high.

'Having now three Trees in good Health, I reſolv'd to try 'ſome Experiments relating to the Culture and Propagation of 'this Plant. The firſt was an Inarchment on the yellow *Indian* 'Jeſſamin, and likewiſe on the *Arabian* and *Braſile* white Jeſſa-'min; but all three without Succeſs, tho' repeated each of them 'twice over. The next was to make an Inciſion at a Joint, and 'to lay four Branches down in the ſame Soil in which the Trees 'were planted. This ſucceeded very well, for in about ſix Weeks

‘ time they were all well rooted, and fit to take off. Afterwards
‘ I took eight or nine Cuttings, at different times, and with a
‘ great deal of Care I got five of them to take Root very well.
‘ It would have been eaſy for me to multiply theſe Experiments,
‘ but as I was now Maſter of twelve Trees, I thought it unne-
‘ ceſſary to give my ſelf any farther Trouble, at that time, and
‘ I have not had ſo good an Opportunity ſince.

‘ In raiſing theſe Trees I uſed to give them frequent Water-
‘ ings, tho' but little at a time, and the Water being always well
‘ temper'd by ſtanding a Day or two in a Stove beforehand:
‘ This laſt I was particularly cautious about during the Winter.

‘ I found by Experiment likewiſe, that this Tree ought by no
‘ means to have the Ends of the Shoots cut or ſhortened; all
‘ the pruning it will bear is to have its lowermoſt Branches lopt
‘ off cloſe to the Trunk.

‘ Another Caution neceſſary to be obſerv'd, is to waſh the
‘ Leaves often; for by long ſtanding in the Houſe they contract
‘ a Duſt, and beſides are very ſubject to a particular Sort of In-
‘ ſect that ſoils them, and prejudices the young Shoots, which
‘ generally lying on the under Side of the Leaf, may have done
‘ a great deal of Miſchief before they are obſerv'd, except we be
‘ appriſed of them beforehand. They ſeem peculiar to the Cof-
‘ fee Leaves, for I never found them on any other Plant.

INDEX

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