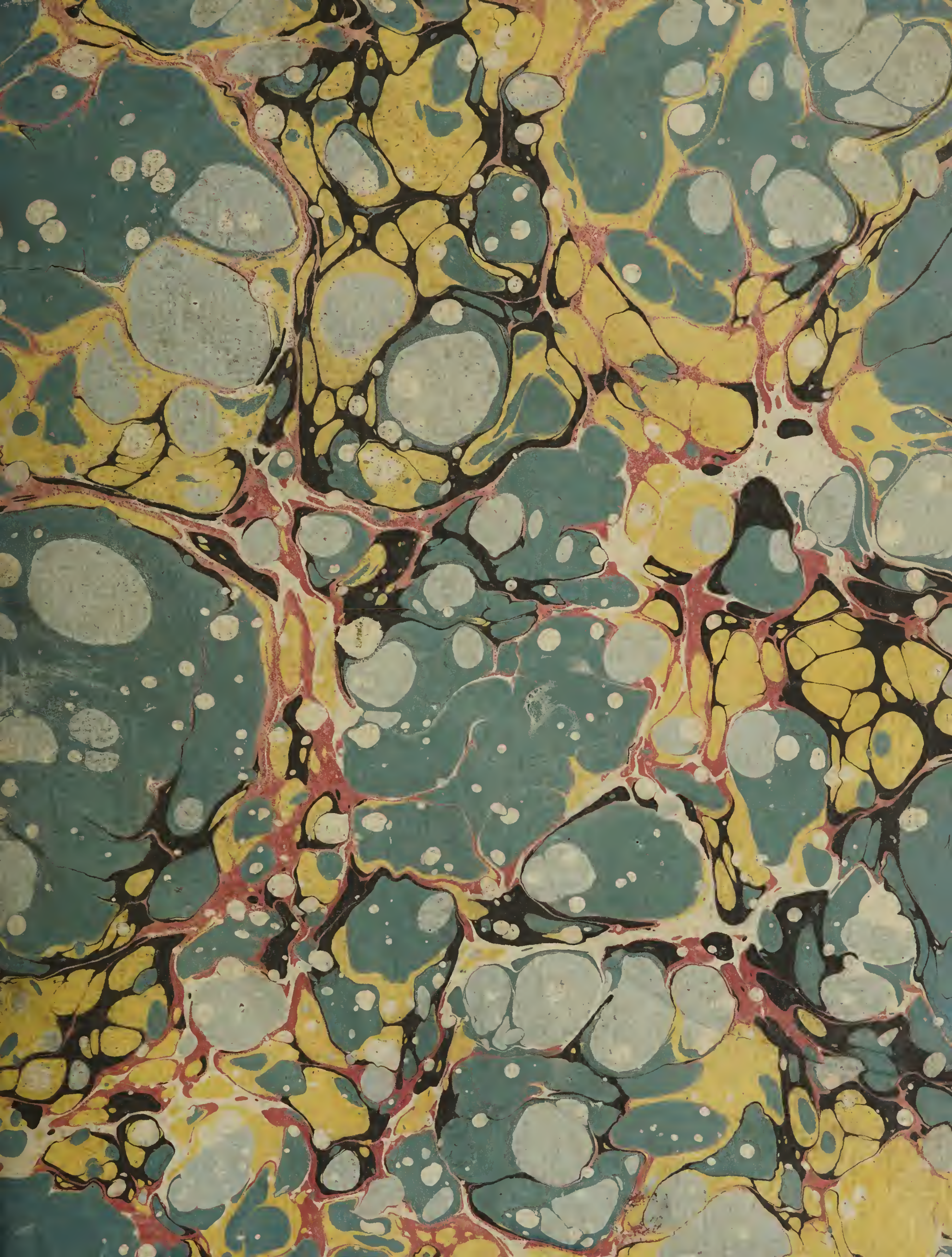

LONG, Edward

THE

HISTORY

OF

JAMAICA.

OR,

GENERAL SURVEY OF THE ANTIENT AND MODERN STATE

OF

THAT ISLAND:

WITH

Reflections on its Situation, Settlements, Inhabitants, Climate, Products, Commerce, Laws, and Government.

IN THREE VOLUMES.

ILLUSTRATED WITH COPPER PLATES.

VOL. III.

—— mea fuit semper hâc in re voluntas et sententia, quemvis ut hoc vellem de iis, qui essent idonei suscipere, quàm me;—me, ut mallem, quàm neminem.

Cic. Orat. in Cæcilium.

LONDON:
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MDCCLXXIV.

PREFACE

TO

THE THIRD VOLUME.

IT may be queſtioned, whether woods are to be conſidered any further detrimental to the air of their neighbourhood, than as they may obſtruct the free paſſage of refreſhing gales?

It is the opinion of an ingenious gentleman, who reſided for many years in the Weſt-Indies, that local unhealthineſs in that part of the world has been moſt remarkable on ſpots newly cleared of their native woods; that for this reaſon, a reſidence there is generally unwholſome to the firſt ſettlers, though not always ſo to the firſt cultivators. The land in ſuch places is covered to ſome depth with a mould, which has been gradually depoſited and encreaſed by the trees, plants and vegetables, ſpringing up, growing and rotting upon the ſurface for ages; ſo that an acceſſion of ſoil has been gained every year, by the ſucceſſive decay of theſe vegetable races. While it continues overſhadowed with thick foreſts, equally impervious to the ſun and winds, the ſoil lies in a kind of inactive ſtate; but no ſooner is it laid open to thoſe influences, and the copious abſorption of dews and ſhowers, charged with volatile, putrefactive particles, than a ferment or inteſtine motion is excited; and vapoury ſteams begin to aſcend in great abundance, which are prejudicial to human health. So, after theſe opened ſpots have lain for ſome ſpace of time thus expoſed, the fermentation gradually ſubſides, and, the materials which gave birth to theſe pernicious *effluvia* being exhauſted, the air becomes amended, and the mortality ceaſes with the cauſes of it.

 If

If this hypothesis be justly founded, the conclusion would follow, that all new settlements here should be cleared of their wood, and left bare for some time, before the settlers are suffered to dwell upon them. But experience does not positively confirm the fact. It is certain, however, that the woods themselves in this island are not unwholsome to those who inhabit in the midst of them, whether Whites or Blacks. Our Negroes, for the most part, are fond of living among trees and thickets. The truth perhaps may be, that they are too lazy to be at the trouble of felling them; this is the case in Africa, to a surprizing degree. The Indians on the American continent clear no greater extent of woodland, than what is barely sufficient for their annual corn harvest. Their erratic way of life, indeed, may be the chief reason why they do not cut down their forests; yet all these people esteem them not unfavourable to health. The Indian Aborigines of Jamaica cultivated only the savannahs. These fertile plains were affluent enough to supply them with more grain than they could possibly have consumed, if their number had been double what historians report of it.

I shall quote a respectable testimony hereafter, to shew that these congregations of trees are, in their growing state, far more friendly, than inimical in the alterations which they produce on our atmosphere. But in relation to the hypothesis beforementioned, let it be acknowledged, that the diseases which usually invade a new colony of people upon their first endeavours to plant themselves in a West Indian island, are of the putrid, nervous class. Heat and fermentation will generate a *factitious air* from vegetable substances, from fallen fruits and leaves, and the mingled salts of burnt wood, and calcined stones and earth; this species of air, when confined and accumulated, may be destructive to animal life; and when more diffused, the effects, though slower in their operation, may still be capable of affecting health in a degree, by its power of irritating and debilitating the nervous system. But it seems next to impossible that such *effluvia* can be concentrated on spots that are laid open to the sun and the winds; they must surely be soon exhaled or dissipated. Yet it is not denied, but that the vapours emitted from their surface, for some little time after the dense veil of wood is removed,

removed, may be injurious to a perſon conſtantly abiding there at all hours, and more eſpecially during the night, when they may hover near the earth, for want of wind to diſperſe, or of heat to rareſy them. Such ſpots are likewiſe commonly firſt ſet with plantane ſuckers, which are of quick growth, extremely porous, and adapted to purify the air; inſomuch that walks, or plantations of them, are remarkably healthful for reſidence.

This fixed air, which, *per ſe*, or uncompounded, is thought to be one of the greateſt antiſeptics in nature, and may be received into the lungs and bowels in a conſiderable quantity, not only without danger, but with eminent advantage in many purulent diſorders; is, nevertheleſs, under ſome modes of compoſition and application, deſtructive to vitality, and affirmed to be the ſame as mephitic air. Philoſophers, however, ſeem not to be as yet entirely agreed in this characteriſtic: for ſome alledge, that it is of a denſity or ſpecific gravity much greater than that of common or *atmoſpheric air*; whereas the experiments made upon the air of a well, in which a lighted torch was inſtantly extinguiſhed; on the air of the *Grotto de Cani* in Italy, and that of the cavern of *Pyrmont* [*a*], ſeem to indicate, that the mephitic does not differ from common air, either in gravity, humidity, or elaſticity. Until further diſcoveries therefore ſhall decide this variety of opinion, the definition which Dr. *Dobſon* has given us may ſafely be admitted.

" *Fixed air* (ſays he) is the general term by which this ſubject is " diſtinguiſhed; and when it produces any *noxious* effects, either " in conſequence of the proceſs by which it is procured, or the " manner in which it is applied, it is then properly to be called " *mephitic air* [*b*]."

Among the late advances towards an improved ſyſtem of natural philoſophy, there are none which reflect more honour on the human faculties, than thoſe which have penetrated as it were into the inviſible world, and (by the teſt of experiment, aided by rational inductions) brought forth to our perception ſome of thoſe ſtupendous agents, whoſe ſubtility had eſcaped our ſight, and whoſe activity and power confounded and perplexed our judgement. Of theſe diſcoveries none are worthier our attention, than what tend to explain

[*a*] Percival on the vapours of charcoal, p. 100. [*b*] P. 94.

and perfect the abſtruſer doctrines of pneumatic ſcience, and direct their application to moſt uſeful purpoſes of human life.

Modern experiments have proved, that the mineral ſpirit, which imparts to *chalybeate-waters* all that pungent taſte, vivacity, and volatile principle, on which their virtues chiefly depend, is no other than *fixed air*, which endues water with the power of diſſolving not only calcarious earths, but even iron. Dr. *Prieſtly* has ſhewn an eaſy mode of extracting this air from groſſly-powdered chalk, juſt covered with water, with a ſmall addition of ſpirit of vitriol, commonly called the vitriolic acid. He has ſhewn it capable of operating medecinally in putrid diſtempers; and the experiments tried by Dr. *Percival*, and other able gentlemen of the faculty, have confirmed its amazing efficacy in ſeveral caſes.

Such diſcoveries lead us on to a moſt intereſting ſeries of enquiry; for they ſucceſſively preſent to our view ſome new teſtimony of the divine Wiſdom, in the contrivance (and moſt beneficent purpoſes towards us, in the deſtination) of many wonderful phænomena peculiar to our ſyſtem. In this purſuit, tempeſts, volcanos, lightning and earthquakes, begin to loſe their horror; and while they appear remedial in thoſe diſorders to which the material conſtitution of our world is liable, we cannot but reſpect them as neceſſary and propitious, in the ſame manner as we regard thoſe valuable ſpecifics, which bring a recruit of ſound health to our own diſtempered frames.

The inceſſant vitiation of our atmoſphere, by the breath and putrefaction of animal, and the decay of vegetable bodies, by fires, and by volcanos, made it reaſonable to conclude, that ſome proviſion there muſt be in nature for correcting this depraved ſtate, and reſtoring the air to purity. Dr. *Hales* ſeemed to think no other agent neceſſary for this purpoſe than motion; that, freſh common air, impelled with velocity into that which was ſtagnant, confined, rancid, and peſtilential, or into ſtinking water, ſweetened them by diſperſing and carrying off the volatile, offenſive particles, with which they had been ſurcharged, and which loſt their ill quality upon being diluted with, and abſorbed into the vaſt tide of the atmoſphere. He indeed ſuppoſed that the acid ſteams of vinegar and ſulphur, having a kind of elective attraction towards the alkaline

effluvia,

effluvia, which render the air productive of malignant diſtempers, the gaol-fever and the plague, fermented with, and neutralized them.

He had alſo diſcovered, that the upper and nether waters of the *ocean*, by the unequal preſſure of its ſurface, when formed into vaſt waves and ſurges, were blended together; which contributed to the keeping its lower waters ſweet; and that in *rivers*, the ſurface being an inclined plane, the upper parts are continually deſcending and re-aſcending, ſo as to form a perpetual inteſtine motion, which preſerves their water from becoming putrid. But this ingenious philoſopher was not ſo compleatly happy in his reſearches, as to conjecture the means which nature has provided for carrying out of the atmoſphere thoſe heterogeneous particles, that are inceſſantly loading it; and which, if retained and ſuffered to float in it, muſt ſoon infect the whole maſs, and render it unfit for ſupporting animal life.

We owe to Dr. Prieſtly the ſuggeſtion of two grand reſources for this ſalutary end; the firſt he aſſigns to the *vegetable* kingdom, the next to the *ſea*, and other large collections of water; not however excluding Dr. Hales's principle of *ventilation* from a ſhare in this important office.

He finds that the *effluvia* of vegetables are endued with the power of reviving common air, that has been vitiated, or fouled, by fire or reſpiration. That the aromatic vapours of plants, are not neceſſary participants in the office of reſtoring this purity; for that vegetables of an offenſive ſmell, or thoſe of no ſmell at all, but are of a *quick growth*, prove the very beſt for this purpoſe.

That plants thrive wonderfully well in putrid air, and in air that has been ſpoiled by animal reſpiration, in proportion to their vigour and the ſound ſtate of their leaves and branches. Thus the air, which is deſtructive to animal life, is ſalutary and nutrimental to vegetable; and what is poiſon to the former, is food for the latter.

In regard to the ſecond reſource, he tells us, that as well the air corrupted by the breath of animals, as that which is impaired by other putrid matter, is in *a good meaſure* ſweetened by the ſeptic particles infuſing themſelves into water; hence he deduces, that the

ſea,

ſea, extenſive lakes and rivers, which cover ſo large a portion of our globe, muſt be highly uſeful, by abſorbing what is putrid, for the further purification of our atmoſphere; thus beſtowing what would be noxious to man and other animals, upon the formation of marine and other aquatic plants, or upon other purpoſes yet unknown.

"Thus we are aſſured that no vegetable grows in vain, but every "individual plant is ſerviceable to mankind; if not always diſtin-"guiſhable by ſome private virtue, yet making a part of the whole, "which cleanſes and purifies our atmoſphere. In this the fragrant "roſe and deadly nightſhade co-operate; nor is the herbage, nor "the woods, that flouriſh in the moſt remote and unpeopled regions, "unprofitable to us, nor we to them; conſidering how conſtantly "the winds convey to them our vitiated air, for our relief and their "nouriſhment; and if ever theſe ſalutary gales riſe to ſtorms and "hurricanes, let us ſtill trace and revere the ways of a beneficent "Being, who not fortuitouſly, but with deſign; not in wrath, but "in mercy, *thus ſhakes the waters and the air together*, to bury in "the deep thoſe putrid and peſtilential *effluvia*, which the *vegetables* "upon the face of the earth *had been inſufficient to conſume* [c]."

We may add to the liſt of reſtoratives, the aromatic odour of plants and the irrigation of ſhowers, whoſe refreſhing effects on the atmoſphere are ſo immediate and forcible, as to ſtrike our ſenſes in the moſt delightful manner.

Theſe diſcoveries are noble, and open to us a new ſource of inveſtigation into the wholſomeneſs or inſalubrity of local ſituations in different countries, whether in the neighbourhood of large woods, capacious lakes, and great rivers; or where the inhabitants are deſtitute of ſome, or all of theſe purifiers. If ſuch is the grand proviſion made for our globe at large, may we not indulge a thought, that it is diſpenſed in a more liberal portion to thoſe regions, whoſe climate ſeems to require it? Dr. Hales computes, that reſpiration and perſpiration both together, in England, are equal to the quantity of half the meat and drink which the people there daily take in; this he eſtimates at about thirty-nine ounces; but he rightly infers, that it muſt be far greater in *hot climates*; as in hot climates therefore the parents of putrefaction, and of a corrupted atmoſphere, are much

[c] Sir John Pringle's Diſcourſe, p. 26.

more

more numerous, active, and conſtant; ſo the means whereby their malignancy is obviated and decompoſed, muſt be more powerful or more abundant than in Northern counries. We cannot then ſufficiently admire and extol the very ample reſources of this ſort, which are obſervable in our iſland. In every part of it we find the remedies diſtributed with an unſparing hand. The atmoſphere itſelf ſeems to be intimately blended with ſome ſpecies of elaſtic acid air, or vapour, which renders it invigorating to the animal ſpirits, which refrigerates heated liquors, abates the ſenſation of thirſt, and keeps the blood in a cool and diluted ſtate, ſo that ardent fevers and canine madneſs are almoſt unknown here. The rapidity of vegetation mocks the toil of the labourer; the earth abhors infecundity, and refuſes to continue uncloathed. Rivers ſtream around, deſcending from the very ſummits of high mountains, not in ſilent gentle ſtreams, but daſhing from rock to rock, and impetuouſly agitated in their courſe, in order the better to forward the proceſs of nature. The lofty hills lift their thick foreſts to the clouds, and embrace the freſh gales; an infinite variety of ſucculent plants and trees ſpring up in almoſt every ſoil and ſituation, but moſt numerous in thoſe which are low and ſwampy, where their ſervices, and their multitude, may be moſt neceſſary.

The plantane, the palma *Chriſti*, trumpet-tree, water-vines, withes, and gourds; the arums, bambu, Scotch graſs, lotus, and many others, ſeem to love theſe humble ſcites, and are excellently adapted to the medicinal intention, by the celerity and luxuriancy of their growth, the expanſion of their leaves, and the large diameter of their tubes.

I need not ſpeak of the innumerable aquatic plants, and the varieties of rank herbage, which carpet over the oozy beds of all our bays and harbours; of the gentler rivers and the lagoons; affording ſubſiſtence and ſhelter to the manati, the turtle, and a myriad of other creatures, which inhabit or graze upon them; whilſt they are ſo many drains at the ſame time, to imbibe and draw from the atmoſphere above, thoſe foulneſſes that are offenſive to mankind. Such are then, in part, the wiſe and good means, which are prepared to guard againſt, or to diſarm, the atmoſphere of this country, of the hoſtile inſtruments which the warmth of climate may diſpoſe it inceſſantly to generate; and which can only prove baneful to

the inhabitants, when theſe enemies are ſo ſuperabundant, as not to be entirely ſwept away, or abſorbed. This inefficacy of their natural antidotes, it is probable, occurs but very ſeldom; for in all other branches of our ſyſtem, we ſee either an exact *equilibrium*, or at leaſt a ſtruggle for equality, moſt regularly maintained. Yet it may poſſibly happen, that, in conſequence of long drought, the rivers may become almoſt emptied of their waters; the reſervoirs may fail; the leafy cloathing of the woods may be parched, arid, and juiceleſs, and animals be empoiſoned in ſome degree by the ſeptic fluid which involves them: tempeſtuous winds are then the cuſtomary and moſt uſeful auxiliaries; they fly to beſtow the deſired remedy; to repleniſh the earth with new treaſures of water; to reſtore vegetation to the woods and herbage, purity to the air, and health to animals.

JAMAICA.

VOL. III.

BOOK III.

CHAP. VII.

SECT. I.

Meteorological Remarks on the Climate and Atmosphere of Jamaica.

WHEN the influence of the conſtitution of the air upon human bodies is duly conſidered, it will appear that this ſubject holds a very near connexion with what has juſt preceded. The ſtudy of diſeaſes and ſymptoms, which derive their origin from this ſource, ſhould undoubtedly claim attention from every phyſician, who wiſhes to trace the occult cauſe of a ſudden popular ſickneſs, and who, by due obſervance of the peculiar ſymptoms and maladies accompanying every change in the atmoſphere, will be the better prepared and inſtructed to counteract their effects upon health.

I do not, however, take upon me to point out examples in Jamaica of this correſpondence between the ſtate of the air, and the ſymptoms of diſeaſes; but only to publiſh ſome few obſervations, which I could not ſo well introduce in the former part of this work, where I gave a general deſcription of the climate; and to exhibit a comparative view of it, with other places. For this purpoſe, I have principally ſelected Charles Town in South Carolina.

The greateſt heat uſually remarked in London, (I ſpeak not of one or two ſingularly hot days) during the months of June, July, and Auguſt, is very little inferior to the general medium of heat obſerved at Spaniſh Town in Jamaica; yet this heat at Spaniſh Town is neither

insalutary, nor inconvenient, so long as it is attended with moderately dry weather, and regular breezes. But the greatest heat observed in this town is many degrees inferior to the greatest heat at Charles Town. The whole range of thermometrical motion at Charles Town in one year was about 82 degrees, and at Spanish Town not more than 19.

At the former it has been remarked, that the atmosphere is 26 degrees warmer sometimes on the same day, between sun-rise and sun-set; and, on the contrary, that in the space of twenty-four hours, it became 46 degrees cooler than it had been on the preceding day. A transition so amazingly great and sudden may well be thought to affect the inhabitants in a very sensible manner, especially when it is considered, that such an alteration of weather, as precipitates the thermometer suddenly 10 or 12 degrees, makes it necessary to put on warmer cloathing.

On February 17, 1752, the thermometer at the Cape of Good Hope (about 34° 30′ S. lat.) was up at —— —— 94
On the 22d of the same month, at —— —— $97\frac{1}{4}$
At midnight, it sunk to —— —— —— 61
This sudden variation of $36\frac{1}{4}$ degrees was immediately followed by an epidemic distemper, which swept off great numbers of people.

It is not, therefore, a high degree of heat which renders a climate unwholesome, but it is the sudden change from great heat to (comparatively) great coolness, and *vice versâ*. It is the happiness of the Jamaica atmosphere, to be exempt from these noxious variations; and it may, therefore, justly be presumed far healthier than those parts of the world which are liable to them, even though they may be situated many degrees nearer, either to the North or South Poles.

Yet, colonel Purry, the Swiss adventurer, in his memorial of 1724 lays it down for a certainty, that the latitude of South Carolina (33 to 35) is the happiest on the globe. "A latitude (says he) which, by the "*moderation* of its heat, and *temperature* of its air, sheds fruitfulness "upon the earth, and *happiness* on mankind." Surely this gentleman must have taken up merely speculative ideas, or have yielded to the delusions of a lively imagination; or he would not thus have ventured to extol the moderation of heat, and temperature of air, where the heat is known from repeated experiments to raise the thermometer to

upwards

upwards of one hundred, and where the air is ſubject to a variation of forty-ſix degrees in twenty-four hours. He, indeed, ſuppoſes "all other things equal;" and that there be no natural impediments, ſuch as marſhes, ſandy deſarts, and the like. By this prudent *ſalvo*, he excludes at once the greater part of the province, and by far the richeſt; for that part, which furniſhes ſo large a produce annually of indigo and rice, is the moſt unwholeſome of any it it, and therefore not much calculated to promote the happineſs of mankind, ſo far as reſpects health, however fruitful it may be.

During the growth of the rice in the months of July and Auguſt, the fevers, which attack ſtrangers here, are very anomalous, not remitting nor intermitting ſoon, but partaking much of the nature of thoſe diſtempers which are ſo fatal to the newly-arrived Europeans in Weſt-India climates. The ſame may be ſaid of Georgia and Eaſt Florida during thoſe months. It is true, the great heats, obſerved at Charles Town, may perhaps be, in ſome meaſure, charged on its ſituation; which, I am told, is flat, low, and ſandy, at the conflux of two rivers, and in the neighbourhood of extenſive ſwamps. Further inland, one hundred miles from the coaſt, the climate is probably more temperate in ſummer; and ſome imagine, that, as the country becomes more opened and improved, the exceſſive cold, that prevails at certain times of the year, may gradually abate. But it is more reaſonable to think, that the inſtability of temperature, the ſudden ſtarts from heat to cold, and cold to heat, will never ceaſe; ſince they probably owe their origin to the ſhifting of the wind alternately from one point to another: when it comes from off the ſea, it brings warm weather; but, when it veers to the North-weſt, it paſſes over that immenſe tract of continent ſtretching to the Arctic Circle, over vaſt lakes and high mountains capped with ſnow. To theſe eternal cauſes it owes its bleakneſs, which often produces ſuch violent changes in the air of this province.

The heat at Kingſton, in Jamaica, is ſomewhat greater than at Spaniſh Town. The air, about ten miles Weſt from Spaniſh Town, in a ſmall vale environed with hills, was found, at an average, ſix to ſeven degrees cooler than in that town.

 When

When at Spanish Town, the thermometer was at —— ——	89	difference,	7 degrees.
It was, in the vale, —— ——	82		
When at Spanish Town, —— —	67	ditto,	6 ditto.
It was, in the vale, —— ——	61		

Hence we may estimate the difference of the air's temperature in the various districts of the island: so that, if the air of the towns is, at any time, found of a degree of heat inconvenient to health and ease, a person, who travels only a few miles inland, to the hilly or mountainous situations, is sure to meet with a temperate and refreshing air. About seventy degrees on the thermometer is a most delightful temperature; even to seventy-eight and eighty it is not inconvenient; and seventy-eight is about the *medium* state at Spanish Town during six months in the year.

The hottest time of the year, in Jamaica, is just before the setting-in of the autumnal rains, or the months of August and September.

The vernal seasons, if they come at all, happen indiscriminately in April or May, but more regularly in May. But they fail, at least, four out of seven years; and this disappointment is amply recompensed by the vast quantity of rain that falls about the latter end of August, and in course of the two succeeding months. When the vernal season fails, I have remarked, that a double fall of rain, or double season, has happened; the first setting-in at the latter end of August and the beginning of September; then discontinuing till towards the close of October, when it has re-commenced, and held on, more or less, till the 10th or 15th of November.

The *medium* heat of Spanish Town, in the cooler part of the year, is, as I have mentioned, about seventy-eight; and, in the hotter months, about eighty-five. The highest in the whole year has rarely exceeded ninety-two. I remember to have seen it above this but once, which was in August, 1767; when, during some days of very unusual heat, which preceded a heavy rain, it rose one afternoon to ninety-three; but other thermometers made it *four* degrees less in every register. I shall hereafter resume this subject; but, at present, it it is necessary I should mention some particulars

particulars relative to the trade and land-winds, which have a great influence on the thermometer in this country.

SECT. II.

Trade and Land-Winds.

Doctor Halley, I believe, was the first who communicated a rational explication of the causes of the trade, or as it is called here, the sea-breeze, which blows all the year between the Tropics. Dr. Franklin struck out lately a very ingenious theory, somewhat different from the former; and has endeavoured to make it account for the periodical North-Westers, which predominate in the higher latitudes of North-America. It would employ too much room to transcribe what these learned gentlemen have published. I shall therefore confine myself to such remarks as occurred to me at Jamaica, not without hope that they may serve to throw some further light on a subject, which has not only been thought extremely curious and interesting, but to be ranked among those dispensations which are the evident result of Infinite Wisdom and Goodness.

A chain of hills running N. and S., of which there are many in this island, will, by the interruption they give to the free and direct course of the sea-breeze, render all places near, lying to the Westward of them, hotter than other places which are ventilated without such obstructions. Nevertheless, the regular breeze, if it blows not very violent, is liable to be frequently deflected from the shore by the land-wind; which latter is often suddenly produced after the falling of heavy showers inland, and upon the mountains; the cool vapour rushes from thence towards the hot, dry air, which hovers over the savannahs and coasts adjacent. The great action, or rarefaction, caused by the sun in this climate, regularly attracts a train of vapour, or dense air, after it, and by that means gives birth to the diurnal breeze, which is light and gentle at first in the morning, increases as the sun ascends higher above the horizon, and declining in the same gradual manner, for the most part, as the sun descends in the afternoon.

The

The land-wind is more or leſs predominant over a moderate breeze, according to the greater or leſs quantity of rain that has fallen inland; ſo that ſometimes the land-wind is partial, extending over a particular tract of country; whilſt other places, ſituate to the Eaſtward and Weſtward more remote from the rain, are not at all affected by it, but have their ſea-breeze uninterrupted.

Rain falls heavieſt in the mountains; the clouds tend to them; the atmoſphere of the woods probably attracts in ſome degree; the rains have been known to fail, in ſome parts, near a range of high hills, after the woods were cut down: beſides, the vapours are there, as it were, entangled; bandied about by contrary floods of air; reverberated in a variety of directions by the various configuration of high lands, vallies, gullies, and other channels, as it happens among the ſtreets, ſquares, alleys, high and low buildings of a large city. The land-wind, following rain, proceeds from that quarter where the rain has fallen heavieſt, and ſeems to be nothing more than a denſe, moiſt vapour, ruſhing towards the heated, dry, and rarefied atmoſphere in the lowlands, and near the coaſt.

In Spain, North-America, and ſome other countries, which have hot ſummers, the cold particles, brought by Northerly winds into mountainous diſtricts, frequently ruſh down upon the inhabitants in the lowlands during the ſummer heats, and condenſe the air below to ſuch a degree, that they are ſuddenly benumbed. This would probably be the caſe in Jamaica alſo, if it contained any mountains of ſuch altitude as to be cloathed with perpetual ſnow on their ſummits, like the Cordilleras of South-America. The ſea-breeze, though it ſlackens towards evening, and then diſcontinues on ſhore, yet continues blowing all night at about ten or twelve leagues diſtance from the coaſt. The reaſon of this may be, that, in the day-time, the land being greatly heated, and the air which ſucceſſively covers it much rarefied, the breeze naturally ruſhes to reſtore an equilibrium, and holds on its current, till the ſun ceaſes to act upon the land. The frigorific particles, then deſcending from a great height upon the mountains, proceed on towards the coaſt, weakening the impulſe of the ſea-wind (which is warmer and more rarefied) as it goes; and thence it blows out to ſea, to

the diſtance above-mentioned, growing fainter and fainter, till it is quite ſpent; and here we fall in again with the regular trade, which, at a diſtance from large iſlands, or the continent, ventilates inceſſantly night and day. This is agreeable to the reports of ſeamen bound for the iſland; and it is obſerved, that the ſmaller iſlands, as Barbadoes, St. Kitt's, and the reſt, have their ſea-breeze by night, as well as in the day-time.

Conformable to this opinion is what may be likewiſe remarked in Jamaica; where, during very hot, dry weather, particularly in the month of June, the land is ſo heated, and conſequently the atmoſphere which covers it, that the breeze continues to blow during the greater part of the night; the air on the mountains not acquiring ſufficient denſity to check or interrupt it.

A wind from the mountains is often obſerved on the South ſide, eſpecially in the months of May and October; which by many is miſtaken for the land-wind, but it is not properly to be ſo called.

Heavy, black clouds appear to riſe in the South-weſt or South towards the ſetting-in of the evening, with frequent corruſcations of diſtant lightning in the ſame quarter. The mercury in the barometer ſubſides from one inch to one and a half; the moon at full, or juſt paſt it. A Weſterly wind ſometimes ſprings up about eight o'clock in the evening, generally much ſtronger than the uſual land-wind; it continues blowing about two hours, or more; then dies away; and, the wind appearing to veer round to the Southward of the Eaſt, very heavy ſqualls come on with rain.

But theſe Weſters are often very gentle; though, if heavy rains have recently fallen in the quarter of the iſland from whence they ſeem to blow, they are found proportionably ſtronger.

Theſe deviations from the uſual, regular current of air may probably happen by reverberation from the high mountains which divide the iſland, the South from the North ſide.

On the 9th of May, after a continuance of ſultry weather for the ſpace of three weeks, the thermometer, generally at eighty-five, roſe to eighty-eight about ſeven in the evening; a ſmart wind from the North-weſt, unuſual at this time of year, came off the mountains; about three in the morning, a very violent rain began, attended with a briſk ſea-breeze from the South-eaſt, which

laſted

lafted fome hours; after day-light, I obferved very thick, watery clouds failing from the point laft-mentioned.

I before remarked, that towards fun-fet the fea-breeze commonly begins to flacken its force in the South-fide lowlands, and gradually dies away. After it ceafes to be felt by the inhabitants of thofe parts next-adjacent to the coaft, they receive in its room a gentle gale from the mountains Northwards. Yet fometimes the clouds are feen ftill purfuing their courfe from the South-eaft. In fact, at thefe times the fea-breeze ftill retains its force in the higher parts of the atmofphere, and blows upon the elevated fummits of the mountainous diftricts for a confiderable time afterwards; from whence it is reflected towards the South coaft: fo that the mountaineers have it in a fteady current with them the whole night at fuch times; whilft the inhabitants of the lower favannahs have what feems to them a land-wind.

At a houfe fituated on a hill at the North fide, the fea-breeze frequently remained with us all night, when the people on the coaft had a land-wind.

The land-wind, therefore, proceeds occafionally from the fea-breeze, reflected down from the mountainous ridges. This effect is produced by the particular figure of the ifland; which I can compare to nothing apter than an accumulation of feveral high roofs contiguous to each other, fet upon a plain furface.

I had a further confirmation of this fingularity in May, 1761; at which time I was at a gentleman's houfe on the South fide, which ftands on a little infulated ftony hill, rifing out of a favannah that extends to the fea. Behind it, at the diftance of about a quarter of a mile, is a high mountain, communicating with ftill higher ranges, of a vaft extent. He informed me, that, the night before my arrival, a violent guft of wind from the Southward, about midnight, fet directly againft the front of his houfe; and fhortly afterwards another, almoft as furious, attacked the back-part from the Northward; fo that he was not without apprehenfions, that his houfe, and every thing in it, would have been blown down the hill. It is reafonable to conjecture, that this fudden and impetuous guft, which affaulted the front of his houfe with fuch vehemence, meeting prefently afterwards with refiftance from

the mountain, was repelled with almoſt equal force, and re-acted upon the back-part.

The ſea-breeze divides, at the Eaſtern end of the iſland, into two ſtreams; ſo that, on what is called the North ſide, the inhabitants have their breeze apparently from the North-eaſt; and thoſe on the South ſide, from the South-eaſt. This may, in ſome meaſure, account for what would otherwiſe appear very ſingular, viz. the blowing of the wind ſometimes from the mountains towards every part of the ſea-coaſt all round the iſland, when the mountains have the ſea-breeze, and the lowlands none, and which comes with the greateſt *impetus* upon thoſe parts which are backed by the higheſt mountains. But the great diſparity on the ſtate of the atmoſphere at night, on the mountains and over the lowlands, is doubtleſs the real cauſe of the true land-wind.

The lowland atmoſphere is, in the courſe of the day, rarefied to a prodigious degree by the ſolar action, and reflection of the earth's ſurface. The atmoſphere of the mountains, on the other hand, is, from the extent of their woods, frequency of rains, and their elevation, comparatively denſer. Their denſe, moiſt vapours ruſh down to every part of the coaſt and the ſavannahs in a continued current, which will always be more or leſs violent, in proportion as the lowland atmoſphere has been more or leſs rarefied; and this ſtream deſcends inceſſantly through the night, endeavouring, as it were, to reſtore an equilibrium. But a poſitive equilibrium, perhaps, can never happen, the ſun not continuing long enough under the horizon, and the heavy cold air of the upper region deſcending in ſucceſſion to the mountain tops, and ſupplying freſh aid to the current by its condenſing power. However, a great change is effected, during the night, on the ſtate and temperature of the air below, which is ſo well refrigerated by the land-wind, that, immediately preceding the dawn of day, it is often extremely cool. When the ſun has riſen above the horizon ſome degrees, and begun again to rarefy the air of the flat country, the current of wind becomes freſher, and augmented in its ſtrength; and ſo continues, until the regular trade ſets in upon the coaſt, and ſuſpends it entirely till the return of evening. This may be termed the true land-wind, to diſtinguiſh it from thoſe irregular currents of

of air which happen whenever the higher lands receive the firſt impreſſion of the ſea winds, or retain them longer; the clouds at ſuch times being elevated to conſiderable height, and moving in the upper region with great velocity. Theſe blaſts act with violence on the mountains, whilſt all is calm and ſerene in the low-lands, until the reſiſtance of ſuch lofty maſſes rebuffs the current down upon the inferior ſituations; ſo that, whilſt the inhabitants here feel the impreſſion of it from the Weſtward, or North-Weſt, they ſee with ſurprize a ſcud flying over their heads in a contrary direction; but generally a little time clears up all doubts; a ſuſpenſion follows of the land current, or a temporary calm, ſucceeded by a South-Eaſt or Southerly gale, and torrents of rain.

The figure in the annexed plate repreſents the iſland extending longitudinally, Eaſt to Weſt, interſected by chains of high mountains. From the feet of theſe to the South-ſide coaſt, and the like in moſt parts of the North-ſide, the ground gently ſlopes by a ſmall declivity to the ſea. The ſea-breeze, whilſt it continues in the Eaſt and South-Eaſt points, blowing upon the Eaſt end, is divided in its current, paſſing in curved lines along the two oppoſite coaſts of North and South. When the ſun approaches the Northern Tropic, the ſea-breeze declines more Southerly; and then follows the ſun's track, only varying ſome few points in the courſe of the day. This is particularly obſervable in June.

When the ſun riſes North-eaſt, the morning breeze ſets from the ſame quarter; but, as the former continues its progreſs, the latter will apparently diverge to the Southward, till the ſun ſets in the North-weſt, at which time the breeze ſeems to come from the South-eaſt. So, when the ſun returns again to viſit the Tropic of Capricorn, the further he declines towards South-weſt, the more will the breeze recede towards the North-eaſt and Northerly points. When he ſets in the South-weſt quarter, the denſe air from the North gains upon the uſual trade-wind, and grows more vigorous, neceſſarily haſtening towards thoſe regions where the atmoſphere is in a ſtate of greateſt rarefaction. The Norths at this time ſet-in early in the evening, and continue till late in the morning; and the ſea-breeze is proportionably diminiſhed in ſtrength and continuance. When therefore the ſun riſes in the South-eaſt,

South-eaſt; the current of air in the morning will proceed from the North-weſt, till he is advanced to conſiderable elevation; after which, the wind will be found to agitate a little from the South-eaſt, till he ſets; at which time, the North will ſpring up again from the North-eaſt, and continue all night.

Theſe obſervations do not hold regularly in all parts of the iſland; for, in ſome, the natural poſition of the interſecting mountains, or ſome other local cauſe, may produce a variation in appearance. But, in general, they ſufficiently mark the changes which are incident to theſe currents of air in Jamaica; the wind moſt commonly falling into the ſun's track in the fore-part of the day, and facing its diſk in the after-part.

In the month of April, after a continuance for ſome time of dry weather, with violent ſea-breezes, the thermometer generally at eighty-ſeven and eighty-eight in Spaniſh Town, all day, and till late in the evening (a proof of the great heat in the atmoſphere), a ſudden rain fell, which held, more or leſs, during five ſucceſſive days. The thermometer ſunk thereupon to eighty-four and eighty; but, the rainy weather breaking up, and the ſea-breeze returning again with the ſame violence as before, the thermometer roſe, in one day, to its primitive ſtation of eighty-eight. Hence it would ſeem, that the ſea-breeze does not actually render the air cooler, but only communicates a ſenſation of coolneſs, by agitating the atmoſphere which invelopes a human body; for, on the days when it blew with greateſt force, the thermometer roſe higheſt; and, when it blew late in the evening, the thermometer ſunk very little; but the nights were hot, and diſagreeable.

A real, as well as ſenſible, coolneſs proceeds here from the interpoſition of clouds, which render the air of every place that is is ſcreened by them more temperate. In the month of June, ſome heavy clouds, paſſing to the Weſtward in the afternoon, threw a very extenſive ſhade over the part of the country where I then happened to be, and cauſed ſo immediate an alteration in the ſtate of the air, that the thermometer fell from ninety-two to eighty-ſeven, or five degrees; ſo great a difference is here, occaſioned by a clear or clouded atmoſphere. And this phænomenon aſſiſts to ſhew, why the mountains, and midland parts of this iſland, exclusive

cluſive of their greater elevation, muſt ever be the moſt temperate; for the flat lands near the coaſt are ſeldom ſhaded in this manner, but lie expoſed whole days to the uninterrupted torrefaction of the ſun. The clouds, being driven on upon the Eaſtern extremity of the iſland by the ſea-breeze, are accumulated over the mountains, or middle region, and there detained, ſometimes by the reverberation of wind from different angles of high ridges; at other times by the conflicting currents occaſioned by vallies, gullies; and other in-draughts, till they are either condenſed into rain, or at length forced onwards along the range to the Weſtward by the ſtrenuous impulſe of the breeze. The lands therefore, which lie under this track, have few days without a ſhower, and none without ſhade; whilſt the lowlands remain parched, for want of theſe ſeaſonable irrigations; and, being rarely overſhadowed by vapours, the ſun's impreſſion is more intenſely felt there. The like remark occurs in the places ſituated under the Equator, where the air is invariably moſt cool when the ſun is vertical; at which time their periodical rains come on, and the thick ſkreen of vapours, intercepting the ſolar rays, brings the atmoſphere below into a very pleaſant temperature. The uneaſy ſenſations, felt in Jamaica about the time of the periodical ſeaſons, when the days are calm, and only a few ſhowers fall now and then, as a prelude to the heavy fall, may be thus accounted for.

It has been experimentally found, that ſixty-three degrees of heat, in a damp, hot atmoſphere, is much more incommodious to remain in for a time, than ſeventy degrees of heat in a dry, hot ſun-ſhine; the great irkſomeneſs ariſing from a damp heat being occaſioned not only by obſtructing the reſpiration, but by relaxing the ſurface of the body: and the like difference is obſerved between a damp, or a dry, cold air; the former, with a leſs degree of cold, incommoding much more, than the latter, with a greater degree. The reaſon of which is, that dry air attracts moiſture ſtrongly, and, by carrying off the frouzy vapours which exhale inceſſantly from the body, promotes a freer perſpiration, which refreſhes and exhilarates; when inſpired into the lungs, it dilates their ſmall veſicles more than a damp air will, and cauſes a freer circulation of the blood. In a ſtagnation of the air, theſe ſteams remain ho-

vering about the body, and, fermenting, excite it to a corrupt or morbid ſtate. Hence it is, that the calm, ſtagnant air of a country, with moiſture and heat, is bad and unwholeſome [y]. Hence too we remark, that Spaniſh Town is, *cæteris paribus*, perfectly healthful in dry weather, although the thermometer be extremely high; and ever moſt ſickly, when the air is moiſt and cloſe, though the thermometer be many degrees lower.

Dry air is very electrical. Thus a glaſs tube, excited to electricity by friction, will not only forcibly attract little drops of water to it, but will alſo draw a ſmall ſtream of falling water, of one tenth of an inch diameter, from a perpendicular into a curve. Is it not accountable, upon this principle,

1ſt, That the land-rains, on the South ſide of Jamaica, come off the mountains with more facility and violence after a ſeries of dry weather in the lowlands?

2dly, That, after the lowlands have been thoroughly ſaturated with water, ſhowers but ſeldom come from the mountains; but the clouds, which have diſcharged plentifully on the highlands, are frequently ſeen to hold up on quitting them, and traverſe to ſea-ward, over the champaigne country, without letting fall any more rain?

3dly, That ſometimes, after dry weather in the mountains, *curved* ſtreams of thin rain are ſeen here and there deſcending upon the higheſt ridges, either of very ſhort continuance, or elſe appearing to increaſe in bulk and extent, until a heavy ſhower ſeems collected over ſuch parts?

As air attracts water, ſo a ſtream of water carries a body of air along with it: the air, to uſe the phraſe of Dr. Hales, "rides "upon it." In all the river-courſes of Jamaica, there is a ſenſible current of air. Rain never comes without ſome degree of wind; and we obſerve the ſhowers, which fall in Jamaica, almoſt invariably following the very meanders of the larger rivers, unleſs the wind accompanying them is ſo violent as to force them into a different track.

When the wind is South and South-weſt on the South ſide, it is often North-eaſterly on the North ſide, attended with very heavy rains.

[y] Pringle.

When

When the weather has been perfectly fair at Spanish Town (although heavy rains fell for some days preceding), I have known an incessant rain, of thirty hours duration, at the North side, in the month of October.

In the month of March were very hard rains at Spanish Town; and, at the same time, great complaints of dry weather at the North side.

The Rio Cobre was flooded in the same month, and several times ran over the bridge; and the Vale of Luidas was deluged with rain; whilst the North side parishes, St. Mary and St. Anne, continued excessively dry.

From an opposition of currents in the air may proceed the frequent calms and gentle sea-breezes observed on the South side in August and September. Hence also we may account for the fresher land-winds, which now begin to gain the ascendency, till the sea-wind settles in the Northerly points.

In June and July, the trade-wind is generally violent, and blows late in the evening, commonly hardest at the South side, and fixed at South-east. At such time, the sun is near the Northern Tropic; but, when he declines towards the Southern, a cool wind then begins from the contrary side of the island, and blows towards the South side. The land-wind blows later in the morning, comes on earlier in the evening; and the sea-breeze is faint and irregular. This is usually first perceived about the latter end of August.

These remarks, founded on the experience of several years, will contribute perhaps to explain the cause of that difference in climate subsisting betwixt the North and South sides of the island; by which means the canes arrive so many months earlier at maturity in the latter than the former; and likewise of those singular deviations which distinguish this island from the British Windward Isles, which, being comparatively low and small, and nearer the Equinoctial, are perflated with the regular trade, and have no land-winds.

It is no small pre-eminence to enjoy this variation of temperature in the different districts of the island; by which the annual crop is, in general, rendered more even and uniform, since, if it fails in one part, it is found to make amends in the others. A choice of

 situations,

ſituations, in ſo large and diverſified a range, is, moreover, a deſirable advantage to purchaſers and ſettlers, who may accommodate themſelves eaſily in that point. Nor is it a mean conſideration, that valetudinarians, and perſons recovering from illneſs, may either derive a re-eſtabliſhment of health from ſome of the nobleſt mineral waters on the globe, or from the pure and bracing air of the mountains; remedies, which, though ſo obvious, are too little valued here; whilſt many, in ſeeking a cure, by deſperately poſting into the frozen climes of North-America, or Europe, frequently periſh in the attempt; or, if they get through the voyage, often undergo a moſt ſevere and hazardous trial of their conſtitution, by encountering the rigours of a long winter.

SECT. III.

General Remarks, *connected with the foregoing Subject-matter.*

1. THE ſun's courſe ſeems to govern the direction of the trade-wind, or breeze.

2. The falling of rain here produces a poſitive coolneſs in the temperament of the air. The thermometer, after a ſhower, falls ſometimes ſix to eight degrees.

3. This cool ſtate will continue, if the ſun remains obſcured with a high miſt, or thick vapour. This generally may be noted immediately after the ſeaſons.

4. When the weather is exceedingly hot, but continually dry, Spaniſh Town is perfectly healthful.

5. There is ſeldom a variation of more than ſix to nine degrees on the thermometer in one day at Spaniſh Town, obſerved from ſix in the morning to ſix in the afternoon.

6. The barometrical variations are greateſt in April, May, and October.

7. After ſqualls and rain all day in the lowlands from the Southward, if rain has fallen heavily in the mountains, the wind is changed at Spaniſh Town, towards evening, to a North, or elſe a ſtrong land-wind.

8. A long-continued drought, of ſome months, almoſt always breaks up with a ſmart thunder, attended with heavy rains, in this iſland;

iſland; but at the Windward Iſlands, more uſually with gales of wind.

9. The firſt appearance or dawn of day is an arch of light, which gradually dilates. From the firſt *radius* of light, to ſun-riſe, is about an hour and an half.

10. The *crepuſculum* before the moon's riſing is about half an hour.

11. In *January*, upon a ſuſpenſion of the North wind for about a week, the ſea-breeze blew with great violence, ſetting in at ten or eleven in the forenoon, and continuing till late in the evening. When the ſea-breeze blows at this time of the year, it ſets in at leaſt two or three hours later than in the hot months, the ſun being far to the Southward, and not rarefying the atmoſphere near the Northern Tropic ſufficiently to excite the current ſo early as in thoſe months.

12. February 2. A heavy rain from the South-weſt this day, was ſucceeded on the day following by a ſtrong *North*. The wind in ſhifting round from South to North, probably occaſioned this fall of rain.

13. Showers in this month, although they cauſe the graſs of the South ſide, low-land paſtures, to ſprout a little, yet being generally followed by a North, the impreſſion of this drying wind checks it again immediately.

14. During this month, the land-wind ſeems unuſually briſk in the morning, being ſtrengthened probably by a gentle North.

15. Feb. The Norths and ſea-breezes are obſerved frequently to blow alternately; and upon a change from North-eaſt to South-eaſt, drizzling rains or ſmall ſhowers commonly fall.

16. The variation of the thermometer was greater in this month than in any other, amounting in ſome years to eighteen degrees. Whence it may be concluded, that warmer cloathing is now required, to guard the body againſt any ill effect from ſuch changes.

17. On moving the thermometer the 17th of this month at ſix in the morning, from the apartment where it uſually hung, into another, leſs frequented and more expoſed to the air, it ſunk four degrees.

18. On taking off a mahogany cap which covered the bulb, the ſpirit ſunk inſtantly five degrees. By letting it remain all night

uncovered, I found it in the morning ſix degrees lower than uſual when the cap was kept on.

19. In March, at night, juſt before the ſetting in of a North (which continued three days and nights inceſſantly with great ſtrength), the air was exceedingly cloſe and ſultry; but this wind ſunk the thermometer eight degrees.

20. April 1. After ſultry weather, and change of wind from N. North-eaſt to South-eaſt, were frequent heavy ſhowers, but little or no thunder from the beginning of November to this time.

21. April and May, the North-eaſt wind is obſerved to ſhift to the Southward of the Eaſt, and ſometimes Weſterly; but *vice versâ* in September, October, and November, generally cauſing heavy rains with theſe variations.

22. September. Generally ſultry with light breezes and calms alternately. But the thermometer not ſo high in this month as in Auguſt.

23. Sept. 19. Exceſſively hot and calm at Spaniſh Town, and no breeze; but at old Harbour-bay, about fourteen miles South-weſt there was a ſea-breeze, ſo violent as to drive ſome of the ſhips from their moorings.

24. Sept. 21. After a ſtill morning, a hard rain fell at Spaniſh Town, which broke up about ſunſet with ſome thunder. The wind, whilſt the rain laſted, ſeemed to be at no fixed point, but driving the vapours about in different directions.

25. October 4. In the evening the roar of the ſea at about ten miles diſtance, heard very plainly at Spaniſh Town. In the night, and during ſome days afterwards, ſqualls, wind, and rain.

26. Oct. 15. About four in the afternoon, for two or three days paſt, a light breeze obſerved to ſpring up from the South-weſt, ſcarcely perceptible but by the clouds floating from that quarter. At intervals a gentle land-wind felt from the North, and a faint breeze from the South-eaſt. From theſe oppoſite currents, a calm probably enſued, the clouds appearing to ſtagnate for ſome time over Liguanea Mountains, and then deſcended in a very copious rain.

27. Heavy

27. Heavy rains for ſeveral days, in courſe of this month, rendered the air ſixteen degrees cooler than it was before.

28. Nov. 11. A North, at firſt ſetting in this day, was obſerved to affect moſt perſons with a ſenſation of unuſual coolneſs; but actually ſunk the thermometer only two degrees. A very ſtrong North in twenty-four hours ſinks five to eight or more degrees lower than before.

29. Nov. 21. The ſun ſet at twenty-ſeven minutes paſt five. The largeſt weſtern planets appeared at five minutes paſt ſix P. M. The redneſs of the Weſtern hemiſphere diſappeared about a quarter paſt ſix P. M.

SECT. IV.

Effects on Health, concomitant to the Changes of Weather in this Iſland.

A continuance of weather unuſually hot and dry, is in general not unhealthy. The diſorders which ſometimes attend it, are fevers tending to inflammation, opthalmies, pleuriſies and peripneumonies, and convulſive coughs.

This ſtate of the air is favourable to inoculation.

A ſudden change from very dry to very wet, checks the perſpirable matter, and throwing it on the bowels, produces diarrhœas, dyſenteries, coughs, apoplexies, paralytic complaints, worm fevers, and favours the contagion of ſmall-pox, chicken-pox, and meaſles.

Wet and cool. Quotidian, or continued remitting fevers, tumours and ſwellings; a tendency of the humours towards the head.

Warm and moiſt. Diarrhœas and dyſenteries more malignant. Putrid and nervous fevers. Relaxes the ſolids, and cauſes an afflux of humours to the bowels.

Cool and dry. Braces the ſolids, and diſpoſes to ſpaſmodic diſorders, as the belly-ache, tetanus, *&c.* and turns the humours upon the ſuperior parts, the heart and breaſt, producing catarrhs, quinzies, coughs, pleuriſies, and other diſorders of the inflammatory kind.

But a dry, ſettled air, either cool or temperate, is, *cæteris paribus*, the moſt healthful.

A moiſt chilly atmoſphere at the ſetting-in of the Norths, produces agues and intermittents, ſometimes remittents, on the South ſide.

In proportion as the thermometer riſes very high, and ſettles for any conſiderable time at ſuch a height, fevers, and other inflammatory diſorders, may be expected to be chiefly prevalent.

In 1764, dry hot weather continued on the South ſide from January to June. Multitudes of cattle periſhed at the penns in the neighbourhood, and dropped in the roads for want of fodder. It is impoſſible to conceive the annoyance which travelers ſuffered from the ſtench of their carcaſſes lying unburied, till they were devoured by the crows and dogs. A very malignant ſort of ſmall-pox ſucceeded in Spaniſh Town, which ſwept off numbers of the Negroes. The thermometer in June was moſtly at 87 and 88. The diſorder raged with greateſt fatality after the falling of a few ſlight ſhowers.

The coming in of dry warm weather after moiſt and warm, cauſes a free perſpiration without inflaming the body; diverts the flux of humours from the bowels to the ſkin, and abates diarrhœas, dyſenteries, *&c.*

An unuſually dry cool air braces the fibres here too ſuddenly, and diſpoſes to ſpaſms.

Long-continued dryneſs and heat, having the like effect on the fibres, and rendering them too rigid, produce inflammatory ſymptoms in the blood, from ſlight accidental cauſes, as being overheated with exerciſe or hard drinking, and ſuddenly taking cold, getting wet, or in any other way ſtopping perſpiration, and ſo impriſoning thoſe humours which ought to have been eliminated by the pores.

Negroes are in general the firſt ſeized with thoſe diſtempers which become epidemic, except they are of the putrid claſs. On the ſetting-in of hard rains after a long drought, they ſhould be reſtrained as much as poſſible from indulging in fruits and roots too liberally; theſe aliments, at ſuch times, having abſorbed the water very plentifully, are crude and unwholeſome. Such fugacious ſubſtances, together with indifferent cloathing, and expoſure to the inclemencies of weather, ſtop perſpiration, tranſlate the humours upon their bowels, and there generate violent colics, and ſometimes mortal diarrhœas.

After a ſeries of hot, dry, and calm weather, eight days of continued rain ſucceeded in May 1761. Spaniſh Town grew more ſickly than ever I knew it, either before or ſince. From that period to Auguſt there were buried twenty-nine white inhabitants, of whom fifteen were ſoldiers. Their diſorder had all the appearance of being the true yellow fever, and was ſuppoſed to have been communicated from ſome ſhip in Kingſton harbour. The ſhips in the merchants' ſervice have no lazaretto or hoſpital on ſhore for their ſick men; though ſo neceſſary a building might be, with great conveniency and cheapneſs, erected for them on the Paliſadoes, a dry, airy, healthful ſpot, where they might be ſupplied with all proper accommodations, either from the ſhips, or the town of Kingſton, by a ſhort water-carriage.

From October 1768 to May 1770 was the longeſt and ſevereſt drought ever remembered in this iſland, which particularly affected the South ſide diſtrict; for in ſome of the North ſide pariſhes, as St. James and St. Mary, and at the two extremities, St. Thomas and Portland in the Eaſt, Weſtmoreland and Hanover in the Weſt, there were moderate ſhowers. In Liguanea, moſt of the canes were deſtroyed by it. The like calamity befel Vere and Clarendon. Many cotton-trees (a tree of the largeſt ſize) were killed; which is the more extraordinary, as their tap-root deſcends a prodigious depth below the ſurface. The graſs on the lowland paſtures and meadows was entirely burnt up. Wells and rivers loſt their water. Numberleſs cattle were of courſe ſtarved to death, and many Negroes periſhed as well by famine as thirſt. Such of the inhabitants as, from neceſſity or caution, removed with their cattle and Negroes into the mountains, preſerved their lives. Nature has provided in their woods a variety of fodder, conſiſting of a ſort of wild oat, certain withs, and the leaves of ſome trees, which endure the drieſt weather, and afford a hearty, wholeſome nutriment. The few ſcattered ſhowers, which fell in theſe parts, prevented a total deſtruction of the plantain walks and vegetable roots.

In May 1770, exceeding heavy rains ſet in, which ſoon reſtored every thing to its primitive verdure; they continued alſo with ſome ſeverity in the following months. So copious a glut of moiſture, immediately coming after ſo long a reign of heat and dryneſs, was neceſſarily introductive of ſickneſs, which chiefly invaded the towns; and putrid diſtempers were moſt epidemic. Many perſons were apprehenſive that an earthquake or hurricane would be another natural conſequence. On the 3d of September, about eight in the morning, a very ſmart ſhock was felt, which continued near the ſpace of one minute.

minute. It was moſt violent at Kingſton, where it threw down ſeveral kitchen-chimnies, damaged ſome walls, and alarmed the inhabitants ſo much, that many jumped out of the windows and piazzas one ſtory high, by which a few were lamed, but no lives loſt. Two or three old buildings in the country were ſhaken to pieces. Near the ſea-coaſt the agitation was obſerved to be greateſt. In the Marine Hoſpital at Port Royal were ſeveral bathing-tubs, which appeared to be ſtrongly affected by the ſhock; the water undulated to and fro in them with ſo much violence as to daſh over the ſides. It was preceded, as uſual, with ſultry weather and a rumbling noiſe. This earthquake, happily ſo little injurious to Jamaica, originated at Hiſpaniola, where it was accompanied with eruptions, and did infinite miſchief. The hardineſs of the ſugar-cane was ſufficiently evinced during the dry weather, it being among the laſt of the vegetable kind that periſhed. One good conſequence of the drought was, that ſome perſons who had removed into the woodlands to enjoy a moiſter ſoil, and procure ſuſtenance for their cattle, diſcovered ſuch advantages of ſituation in thoſe parts, as induced them to eſtabliſh inland ſettlements. The value of the graſs farms at Pedro's was alſo very conſpicuous, for they proved the ſalvation of many hundred head of cattle brought thither from the lowlands, which ſhewed the great utility of having ſettlements in the mid diſtrict of the iſland. The diſtempers which followed on the change of weather were moſtly diarrhœas among the Negroes; coughs, meaſles, and remittent and putrid fevers.

Violent earthquakes, accompanied with vapourous eruptions, have always produced noxious effects upon the health of thoſe who have been near the place of their breaking-out; yet I cannot think that they are the proximate cauſe of any *endemia*, or peculiarly malignant diſorder. For if we ſuppoſe that ſome quantity of mephitic air is diſcharged at every opening of the earth, this would ſpeedily be corrected by the atmoſpherical air. If putrid *effluvia* are emitted by turning up the filthy mud of lagoons and other impure ſediments in ſhallow water on the coaſt, it muſt then depend on the ſtate of the air ſucceeding the ſhock, how far theſe noiſome ſteams may diſpoſe to a malignant ſickneſs; if the air continue perfectly ſerene, it is probable any fever contracted at that time would become malignant; but earthquakes are commonly, if not regularly, followed with wind or rain, or both, which effectually purge the air of theſe foulneſſes.

After the earthquake which happened here in 1692, a great ſickneſs raged, which few or no families eſcaped. The like conſequence beſel the people of Hiſpaniola, after the ſhock and eruption abovementioned. Expelled from their ruined habitations, expoſed to the inclemencies

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of the air by day and night, their terror excited by the calamity, their anxiety for the loſs of goods, relations, or friends, deſtroyed, conſtant dejection of ſpirits, and want of neceſſary conveniences for health, it is no wonder that, under the concurrence of theſe circumſtances, they ſhould contract ſickneſs, that the ſymptoms ſhould be aggravated to a degree of contagion, and thus ſpread almoſt univerſally through a country.

SECT. V.

EARTHQUAKES.

A ſeries of dry weather for five, ſix, or ſeven months, in this iſland, generally terminates, either in an earthquake, or a guſt of wind and rain, attended with or without thunder.

Earthquakes uſually happen immediately after the firſt fall of heavy rain, ſucceeding a drought.

The weather is always extremely ſultry, cloſe, and ſtill, juſt before an earthquake, or before ſtrong breezes, violent Norths, or heavy rains.

Earthquakes ſeldom, if ever, happen in windy weather.

They are ſucceeded here with ſqualls of wind and rain, ſometimes accompanied with thunder (but more uſually without) and ſometimes with a *brutum fulmen*. When frequent ſmall ſhocks happen, there is leſs of thunder and lightning than at any other times; and it has been remarked, that when thunder and lightning happen after earthquakes, the ſhocks from that time either diſcontinue, or become fainter and fainter.

All ſhocks are horizontal; none have ever been known to act in a perpendicular direction.

Hence it has been ſuppoſed, on very probable grounds, that the air is more often the vehicle of the ſhock than has generally been imagined: and that the electric fluid, which pervades all nature; and, when put in motion, is equal to the moſt violent effects ever known to happen from earthquakes, is a principal agent in cauſing them. But other principles may alſo lend their aid. In its ſubterraneous progreſs it may enkindle inflammable matter, and generate a rarefied vapour of immenſe power [*n*]. The vapour ſeems to endeavour by every means to get vent; and, paſſing by ſubſtances of ſolidity ſufficient to divert it, ſeeks an eaſier courſe through ſandy and other light *ſtrata*, which make leſs reſiſtance; and at length burſts forth into the atmoſphere.

Hence buildings, erected on a rocky foundation, are ſubject to be leſs injured by them than thoſe which are built on other ſoils; and more particularly thoſe which ſtand on a looſe ſandy texture, contiguous to the ſea.

[*n*] Water turned into vapour is ſaid to occupy 14,000 times its former ſpace.

No earthquake perhaps ever happens without an explofion or eruption fomewhere or other; but, where fuch explofion happens, its effects are always the moft deftructive; and the injury decreafes in proportion to the fquares of the diftances from that part.

At what diftance from the eruption the effects are fo far weakened, as to caufe no damage to buildings, has not yet been decided. The pulfation, or ftroke, we know, may be communicated through a line of fome thoufand miles in length; thus the great earthquake at Lifbon, in 1755, caufed fome unufual agitation of the water to be obferved at Barbadoes. Ships, at 180 miles diftance at fea, felt the fhock in the fame manner as if they had ftruck upon a rock; but I am apt to think, that the effects are rarely fatal to ftrong buildings at the diftance of 50 miles, unlefs they lie on the fea-coaft, or arm of the fea, whofe water freely conducts the fhock.

Rivers are likewife conductors, and the buildings fituated on their banks are more feverely affected than others which are remote from them.

On the 9th of November, 1761, the day cloudy and fultry, thermometer, at ten o'clock A. M. 75 deg. the Southern horizon looked extremely black, and a prodigious fwell tumbled into Kingfton harbour, which raifed the water 2½ feet above the wharfs. On this day happened an earthquake and ftorm at Carthagena, diftant about 435 miles, which did fome damage to the town, and choaked up the entrance of their port with fand. The next day the wind at Jamaica was S. E. very fqually, attended with hard rain and thunder. On the 11th, a brifk North fet in.

In 1766 (June), when a violent earthquake happened at St. Jago in Cuba (diftance about 95 miles), where it occafioned vaft mifchief, the undulation was felt the fame night at Jamaica, tending from North to South, and fo ftrong, that it ftopped the pendulum of every clock in the ifland, but threw down no building. It was felt here between 11 and 12 at night. The evening was remarkably ferene, the fky perfectly clear, and the air unufually clofe. Some perfons, who were abroad, obferved feveral ftreams of light, or ignited vapour to the Northwards, darting up to a confiderable height, immediately before they perceived the tremor. A fimilar phænomenon was obferved juft before the great earthquake in Sicily (1693). Some country people, who were traveling, faw a great flame, or light, fo bright, that they took it for real fire; and, whilft they were gazing at it, the fhock began. I remember likewife, that, whilft I was fitting at table after dinner one day, the air uncommonly fultry, the houfe feemed to be ftruck on a fudden as with an electrical fhock; and, at the fame inftant I heard a rumbling noife,

and felt my chair lifted up on one ſide; I knew it was the effect of an earthquake; and, looking through a window which faced the ſea, I obſerved two ſtreams of fire, which ſeemed to deſcend from ſome black clouds, at a great diſtance, into the water.

The ſhock felt in June, 1770, which broke out ſomewhere about Port au Prince, in Hiſpaniola, and about 230 miles diſtance from the Eaſtern diſtrict of Jamaica, was more violent than the former one which happened at Cuba. It is ſaid to have thrown down all the buildings in that part of Hiſpaniola, and even to have ſwallowed up a mountain. Yet its efforts were ſo much ſpent, before they reached Jamaica, that only a few old chimneys, ſlightly built, and two or three crazy walls in the country, were thrown down by the ſhock in this iſland. In the following year, 1771, ſeveral ſmart ſhocks were felt here, and ſome buildings damaged, but no perſons hurt.

Many ſmall ſhocks probably happen in theſe iſlands, which eſcape notice; for even the greater ones have not been perceived by perſons who were traveling on horſeback, or otherwiſe in motion.

They are doubtleſs, as well as hurricanes, deſtined to anſwer ſome wiſe, and perhaps ſalutary purpoſe in the œconomy of nature, although it muſt be owned, that they are a ſort of medicines extremely rough in their operations [o].

But if their eruption diſcharges noxious *effluvia* into the air, it ſeems a providential remedy that ſhowers of rain almoſt invariably follow any conſiderable ſhock, whoſe ſprinkling brings a ſupply of freſh air, and corrects the unwholeſome ſtate of what has been vitiated. Thus it was obſerved, that a fall of rain greatly checked the ravages of the laſt plague in London; and, for this reaſon, ſtreams of water are ſcattered down into wells and ſhafts, for purifying their malignant vapours.

The ſhocks I felt in the courſe of eight years were ſix in number, and at the following times of the year.

3d of March,	17th of September,
12th of May,	26th of October,
23d of June,	15th of November.

There were others, noted by other perſons, which I did not feel, or was not ſenſible of; and ſome were ſaid to be felt in January and February. But I think there ſeems to be no certain or ſtated time of the year for them to happen. That which befel Sicily, before ſpoken of, began the 19th of January. Theſe fits therefore ſeem not reducible, till we are better acquainted with their origin, to any diſtinct periods; but may happen from a particular combination of materials in the bowels of the earth, or a caſual diſpoſition of the weather and elements neceſſary for their generation.

[o] In the litany uſed at Jamaica, the word *earthquake* is always added to the liſt of what are commonly called natural evils.

SECT. VI.

HURRICANES.

The limits of the trade-wind are fixed to about the 30th degree of N. latitude; and these storms are seldom known to proceed beyond 18 or 20 N. They usually happen after, or just about the sun's return from the Tropic of Cancer; at which time the places nearest to the North of the Equinoctial are most subject to them. The sun, by its long stay at the Northern Tropic, heats all those parts that are immediately under its zenith to a very unusual degree; and hence currents of denser air may rush from the climates further North; which, coming in opposition to the regular trade, may produce variable winds and calms, followed by terrible gusts, till the proper state of the air is restored, and the trade is settled again in the East. All hurricanes come on either on the day of the full, the change, or quarter, of the moon. They begin from the North, veer back to the W. N. W. Westward, and S. S. W.; and, when got round to the S. E. the foul weather breaks up.

The inhabitants within their track are seldom taken unprepared, as there are several prognostics of their approach.

First, Extraordinary continuance of dry, hot weather, for several months.

Secondly, On their near approach, a turbulent appearance of the sky. The sun unusually red. The air perfectly calm. The highest mountains clear of fogs, and seen very distinctly. The stars at night with large burs round them. The sky towards the North West looking very black and foul. The sea smelling unusually strong, and rolling on the coast, and into harbours, with a great swell. On the full of the moon, a bur is seen round her orb, and sometimes a halo round the sun. These signs should be carefully watched, in August, September, and October.

Thirdly, Immediately before the storm begins, the wind commonly blows hard for an hour or two from the West; which never happening but on such an occasion, the tempest may with great certainty be expected to follow. From the West it suddenly chops to the North-East; then backening to the Westward again, veers about the compass, until it settles into the regular trade.

This island has been less affected with them than the Windward Caribbee islands; where they occur frequently, but do not often pass beyond Porto Rico.

The last, which happened on the 31st of August, 1772, was particularly destructive to them. This dreadful tempest, which seems not to have gone further South than 15 degrees N. lat. fell on all the

Caribbee

Caribbee islands, in their turn, from that degree of latitude, and passing along by Porto Rico, Hispaniola, and the South side of Cuba, swept across the mouth of the Gulph of Mexico, quite into the Bay of Honduras, in a course of near 700 leagues, *or upwards*; for its place of origination is unknown.

Jamaica, being fortunately screened by the islands of Hispaniola and Cuba, which intercepted the main stream of wind, escaped without any material damage; the inhabitants thought the weather a little tempestuous, but were not alarmed at it; the wind was chiefly felt on the North side of the island; but, in most other parts, they had deluges of rain, which flooded the rivers to an incredible height, tore up several bridges, and drowned a good many cattle, sheep, and some Negroes.

A gentleman, who was at this time passenger in a small vessel bound through the Gulph of Florida, for North America, gave the following account.

They had just left the West end of the island, on the 31st of August, but could then perceive no appearance of approaching bad weather. The wind indeed got round to the *Westward*, and continued in that quarter, blowing moderately, for three days. They supposed themselves off the Cuba shore, in the afternoon of September the 3d, and were then quite becalmed. On a sudden the wind came on violently from the North, and blew very hard till midnight. About half an hour afterwards it ceased at once, and a perfect calm ensued, which lasted only a few minutes; when a contrary wind as suddenly began from the South; and, by its opposition to the range of the waves, raised a most terrible sea. At one o'clock this wind increased to a tremendous height, and continued, without the smallest abatement of its fury, till two: from this time it abated but very little till noon, when it hauled round to the Eastward, and there settled into a moderate gale, which brought them clear weather again. The progress of this storm from the Northward, round by the West and South, to the usual quarter of the trade-wind, agrees with, and corroborates, what has been before-mentioned in general, allowing for some small variations which may happen in places differently situated.

The third of September has been a remarkable day in the annals of England. It was the anniversary of the two memorable victories gained by Cromwell, at Dunbar, 1650; and Worcester, 1651; he died on the third of September, 1758; and the same day produced one of the most violent tempests ever remembered there, and probably only to be equalled by this, which happened in 1772, in the West Indies.

Hurricanes

Hurricanes are always accompanied with great rains, and a cool ſtate of the air; however deſtructive therefore they may be in ſome reſpects, they fertilize the earth, purge the atmoſphere from malignant vapours, and bring with them a healthful ſeaſon.

The following is a liſt of thoſe which have been noted at our principal iſlands:

1670 — Barbadoes.
1674 — Ditto.
1675 — Ditto.
1691 — Antigua.
1700 — Barbadoes.
1702 — Ditto.
1707 — Caribbee iſles in general
1712 — Jamaica.
1720 — Barbadoes.
1722 — Jamaica.
1733 — Caribbees in general.
1744 — Jamaica.
1764 — Martinico, and Carthagena, and partially at ſome of our Caribbee iſles.
1772 — Moſt of the Caribbee iſles.

The mechaniſm of theſe ſtorms does not yet ſeem to be ſatisfactorily explained; for, if they were the reſult of ſtated effects cauſed on the Tropical atmoſphere, by the ſun's annual progreſs to, continuance near, and receſs from, the Northern Tropic, we ſhould expect to ſee theſe gales more regular and uniform, or, at leaſt, that they would happen at ſtated periods. But, on the contrary, we find them variable, and ſeemingly much dependent on the caſual ſtate of the atmoſphere, in particular regions; inſomuch, that in ſome years they have been perfectly local, and fallen on ſome one iſland, without diſturbing the reſt. Nor is the cauſe explained why, when they happen, the wind ſhould always incline round by the Weſtern points. But, in all caſes, a very extenſive and unuſual rarefaction of the atmoſphere in ſome one place, may perhaps be neceſſary to produce them; and I have obſerved, that, in our autumnal ſeaſons, which fall out not long after the Equinox, we have generally in Jamaica a kind of hurricane in miniature; for, after the ſea breeze has failed and ſlackened, calms enſue; then the ſeaſon comes on generally with a moderate gale at firſt from the S. W. and before the weather breaks up, it varies to ſeveral points of the compaſs, till it is fixed in the N. E. The analogy between theſe little conflicts and thoſe greater ones, which conſtitute a true hurricane, is very remarkable.

I cannot here omit the preſcription which the learned Doctor Hales has given us for abating the force of theſe ſtorms. For this purpoſe he adviſes the firing a good number of ſky-rockets, or hoiſting paper kites, one tied to another, with a rocket, or piſtol, faſtened at the tail of the uppermoſt, to be let off by means of a match, on attaining its greateſt elevation. This project is founded on the ſuppoſition that

as

as the air, for ſome days preceding theſe ſtorms, is hot, ſultry, and loaded with inflammable ſulphureous vapours, theſe vapours may be thus let off prematurely before too great a quantity of them is collected for a natural exploſion, and ſo the *pabulum* of the ſtorm be conſumed. This ſcheme puts me in mind of the impudent quack at Port Royal, who, after the earthquake, in 1692, advertized his "*ſpecific* "*pills to prevent earthquakes.*" The experiment, however, would afford a very pleaſing ſight, if it was to be tried from the tops of the Blue Mountains; but the greateſt difficulty might be, how to make the kites aſcend in that calm and breathleſs atmoſphere, which is obſerved for ſeveral days preceding a ſtorm; this, I muſt confeſs, is an unlucky circumſtance, and not eaſy to be got over. Let us, notwithſtanding, do the juſtice to Dr. Hales to acknowledge, that, in ſtarting ſuch a propoſal, he begs it may not be treated as *ridiculous*, but merely as an experiment *worthy* to be tried, conſidering the *great importance* of the object; if, therefore, no anſwerable ſucceſs could probably be hoped from it, we muſt at leaſt applaud the benevolence of the ingenious author.

At the beginning of a hurricane, and whilſt it rages, there are inceſſant corruſcations of a *brutum fulmen*, not ſucceeded by any thunder. Theſe ſeem to be rather of the phoſphorus kind, than the matter of real lightning, and appear to generate wind and vapour, accelerating and augmenting, inſtead of oppoſing, the *momentum* of the gale.

But if we admit the doctor's theory, that the atmoſphere is repleniſhed with ſuphureous vapours, it is wonderful that they ſhould remain unenkindled; or, if exploded, that no thunder ſhould follow; on the other hand, muſt not ſuch vapours, if exiſting in the air, and hovering over any country, be quickly put in motion, and diſperſed by the irreſiſtible fury of theſe violent winds, from the inſtant they begin to blow there. The inhabitants of ſuch a country know, that the ſtorm is over, ſo ſoon as they hear thunder. And whenever vehement guſts of wind ſet in, with all the ſymptoms of an approaching tempeſt, they are relieved by this ſound from every apprehenſion. The exploſion of ignited matter, therefore, ſeems to be the *coup de grace* of hurricanes. And ſo far, perhaps, the doctor's theory may be plauſible; that, if, upon the immediate appulſe of the ſtorm, a ſufficient large body of vapour could be fired in a certain region of the air, and in the ſame manner, and with the ſame effect, that the electric fluid cauſes in darting from one cloud to another, the reſiſtance, formed by theſe undulations in the higher atmoſphere repeatedly made for ſome time, might poſſibly repel the current of wind in a degree, and diminiſh its *momentum*;

tum; but it ſeems not very probable that ſky-rockets and piſtols would anſwer the like purpoſe.

SECT. VII.

LIGHTNING AND THUNDER.

The lightning here, if it is not too nigh, forms one of the moſt magnificent objects in nature, particularly at night, when it moves in a thouſand different figures, and exhibits an appearance far ſuperior, in ſplendor and beauty, to the fineſt artificial fire-works.

It is ſometimes ſeen juſt glimmering on the horizon; at other times, darting along a diſtant huge cloud in variegated directions, ſtrait or ſerpentine; or playing round its edge in circles or meanders, beautiful and curious, glittering in ſtreams or jets of the pureſt, livelieſt golden colour.

I have remarked three apparently different ſorts here; I ſay apparently becauſe the *medium* of air, through which it was obſerved, might cauſe a difference of the perceptible colour.

1. The red which follows rain.

2. The white, happening indiſcriminately with or without rain; and which is ſure to do miſchief, when precipitated before rain.

3. *Brutum fulmen*, which flaſhes with great vivacity, but without noiſe, and is uſually attended with much rain, and wind.

The ſound of thunder, when it happens in ſome parts of the mountains, being reverberated from hill to hill, and rock to rock, occaſions a continual echo and roar; and during the rainy ſeaſons, this ſpecies of muſic has been known to laſt ſeveral hours, without any pauſe or interval.

When the clouds are high in the atmoſphere, the thunder is a deep hollow roll through the whole extent of vapours, as if moving horizontally. When the clouds hang lower, the thunder-claps are much louder, more ſmart and compact, reſembling the near exploſion of a cannon. I have remarked that the white lightning, when darting in a ſmall, thready, ſtream, has cauſed a ſilvery, or metallic ſound, very different from any other. The deep, hoarſe, rolling thunder is chiefly heard at the firſt onſet, and during the continuance of the rainy ſeaſons. The thunder ſhowers, which are the harbingers of thoſe ſeaſons, or that happen upon the breaking up of dry weather, or come with a violent flurry of rain, are produced from large detached clouds, and the claps are then ſmart and loud. Every clap or exploſion from the clouds here, ſeems to generate a thin vapour, expanded like a ſheet, in a direction againſt the wind; and this expanſion continues with more and more denſity till the ſun is wholly veiled, and the ſea-breeze lulled into a calm, by repeated claps. The

denſe

denſe air, cauſed by the rain thus ſhaken down, forms a new wind from the land, which ſeems to drive the clouds from off the mountain, to ſea; and when theſe vapours are entirely diſengaged from theſe high lands, the thunder generally ceaſes; they paſs ſilently over the level country, where there is nothing to obſtruct their courſe. Sometimes, when their electricity appears as it were exhauſted, the ſea-breeze returns again, checks their paſſage, and impels them back to the mountains, where they either hold on their courſe peaceably, or, meeting with new collections of other clouds, re-act the ſcene over again, though with leſs turbulence than before. The expanſion, or miſt, remarked to encreaſe after every flaſh, may probably be owing to a *vacuum* cauſed by the lightning, into which the denſer particles immediately ruſh; or an extreme rarefaction of watery vapour, cauſed by the ſame agent, which neceſſarily riſes into a higher ſtation in the atmoſphere, for it always appears elevated far above thoſe clouds, out of which it has been formed. The atmoſphere of theſe thunder clouds is perhaps colder and more denſe than the particles which conſtitute the ſea-breeze; and therefore reſiſts and overcomes their motion to a certain diſtance. Hence, probably, the reaſon why, after theſe clouds have paſſed entirely away, if the ſun ſhould break out again, with vigour enough to heat the air, over that tract of country where the ſhowers had fallen two or three hours before, the breeze gradually revives and ventilates it, but with a feebler current.

Thunder and lightning often happen at the ſetting-in of the Norths in November, and at their breaking up in April or May; they ſeem neceſſary inſtruments to bring about thoſe periodical changes of the ſtated winds, which, but for their operation, would not be effected without a hurricane, or a fit of turbulent weather.

Thunder-ſqualls are common to the months of June, July, Auguſt, September, particularly in the mountains.

At the town of Kingſton there is ſeldom any; the vaſt mountains behind it draw off the clouds on that ſide, and being open towards the ſea, on the other, the vapours from land paſs off at a great height above the town, free of interruption.

At Spaniſh Town there is more of it, the Healthſhire-hills to the Southward giving ſome impediment to the clouds; ſo that when they are checked at all by a ſea-breeze, in their paſſage to the ocean, they are either accumulated, or drove back againſt the land wind; and in either caſe, are ſubject to be broken and diffuſed in ſhowers.

It is curious to remark here the conſtant ſeeming attraction between the mountains and the rain. Heavy ſhowers are frequently ſeen to traverſe the ridges, avoiding a nearer way acroſs the plains, and ſo

creep on to the utmoſt extremity of ſome cape or headland, till they reach the ſea.

According to Mr. Franklin's theory, a ſea-cloud, charged with the electric matter, paſſing over a land-cloud, which is non-electriſed, parts with its fire by the attraction of this inferior cloud, and transfers ſo much into it, till they are both brought to a par.

This doctrine may help us in accounting for the frequency of thunder and lightning in ſome diſtricts of the mountains. Lightning happens oftneſt in the midland range, and Weſtern extremity of the iſland. The land-wind, when it is freſh at night, blows off a large collection of vapours, conſiſting partly of exhalations after rain fallen during the day, of fogs, or of clouds drained of their electric matter, by repeated diſcharges.

Theſe in their paſſage over the mountains are often retarded by the atmoſphere, perhaps, of lofty woods, or currents of reverberated air, and do not ſail many leagues out at ſea till morning; on the ſetting-in of the trade or breeze, they are forced back again upon the land, and the ſea-clouds that follow, being raiſed much higher, inject their electric charges copiouſly into theſe non-electriſed land-vapours, as ſoon as they come within the ſphere of their action. In general theſe land-clouds hang low [*o*], rarely floating above two-thirds the height of the Blue Mountain ridges, and are loweſt during heavy rains; at which time, there ſeems to be a concatenation of vapour from the upper-moſt cloud downwards, reſembling a bundle of wooll ſuſpended in the air, the loweſt flocks appearing broken and divellicated near the earth. After the land has been parched with continued heat and drought, theſe lower fleeces hang ſo little a diſtance above the ſurface, as to feel ſome effect from its reflected warmth, and diſſolve into rain. The firſt ſprinkling is ſeen to re-aſcend from the ground, like vapour from a hot iron plunged into water. Theſe *effluvia*, being of the nature of land clouds and non-electriſed, ſometimes do not aſcend far before the electric fluid is imparted to them from above; whence it follows, that, if any building, tree, or animal, be within its ſphere of attraction, ſome fatal accident may happen.

The lightning which does miſchief uſually ſeems to dart in a continued ſtream, the velocity of motion giving it that appearance, and falls on ſome object elevated above the earth's ſurface, not always preferring the higheſt; but ſelecting that conductor which has ſomething of iron, or pointed materials to attract it.

[*p*] Occaſioned by the great rarefaction of the atmoſphere, which favours their deſcent through] a medium ſpecifically lighter than themſelves.

A houſe, having a pinnacle or ſharpened point on the top of the roof, will therefore be more obnoxious to its ſtroke, than another which has no ſuch attractor.

I have known a building not exceeding 14 feet in height, having the hip-rafters united in a perpendicular ſpike, or poſt of timber ſharpened at top (as pigeon and mill-houſes are commonly conſtructed here) ſtruck with lightning, when a dwelling-houſe, diſtant only twelve yards from it, and at leaſt 30 feet in height, but having no point of attraction upon it, eſcaped untouched.

Hence it is, that cocoa-nut, cabbage, and other trees of the palm kind, are oftener ſtruck than any other. In general, the ſmall twigs of trees, or perhaps their atmoſphere, attract lightning. The lofty and maſſive cotton trees are frequently deſtroyed by it, or mutilated in their principal branches, which is viſible to travelers, in many parts of the mountains.

From theſe obſervations may be inferred, the expediency of building low houſes in the country parts of this iſland, raiſed on a foundation not exceeding three or four feet, with a roof of moderate pitch, and taking care not to fix any wooden or metallic ſpikes *by way of ornament* at top, unleſs a conductor or rod be erected for its ſecurity; and except in very low and watery ſituations, where buildings of two ſtories are proper for health.

Trees planted too near, ſuch as the cocoa and cabbage, are natural conductors, and may endanger it, by being rent in pieces; but, at a moderate diſtance, they will, by their ſuperior elevation and attracting points, catch the electric fluid in thunder guſts approaching very near, and tranſmit it to the earth without injury to ſuch buildings.

Houſes thus conſtructed would likewiſe be more ſecure againſt the effects of a hurricane or earthquake.

Travelers, overtaken by a thunder guſt, ſhould prefer a drenching, or a ſhelter under a rock, rather than under trees on the road ſide, as ſuch trees are often deſtroyed.

In all buildings here, care ſhould be taken to have neither iron bars nor bolts, but rather faſtenings of timber; by which precaution, accidents might be much prevented. Moſt of the houſes, that I can remember to have been ſtruck here by lightning, having attracted it by iron bars acroſs the doors, or ſome other iron work about them.

Before the ſetting-in of the periodical rains, it is uſual to ſee flaſhings all round the horizon. Whenever lightning appears in the evening in that quarter from whence the wind has blown all day, the enſuing day is generally rainy. Large flaſhings over the S. E. ſummit of the Blue Mountains, indicate rain to the flat country lying to the Weſtward of them.

I have frequently in the night-time, in a clear ſerene air, obſerved ſmall orbs of fire kindled in the higher region, and deſcend very rapidly to the earth. Theſe are commonly called *ſhooting-ſtars*; they are probably ſulphureous, nitrous, or oleaginous particles, which, meeting with other *effluvia* at a certain elevation in the atmoſphere adapted to enkindle them, ſuddenly ſhew themſelves in flame, and burn downwards, till the whole train of inflammable matter, which reaches to the earth, or near it, is conſumed; for, ſometimes, they appear extinguiſhed before they reach it. The quantity of this inflammable matter is ſeldom ſo large as to produce any noiſe. It is not an abſurd conjecture, perhaps, that ſuch collections may often contribute greatly towards that havock which accompanies lightning. When the atmoſphere of a cloud, impregnated with the electric fluid, happens to come in contact with ſuch phlogiſtic particles collected in the air, they may join their force together, and precipitate towards the earth, in the ſame direction as the meteor would have taken ſingly. I think it is not to be doubted, but that ſuch meteors are as often enkindled in the day-time, as in the night, though, by reaſon of the ſun's ſtronger light, they may not be viſible.

As they are moſtly ſeen in a calm and warm ſtate of the air, and in dry weather, ſo they are regarded as preſages of drought.

The moſt remarkable meteor obſerved here, was ſeen on the 22d of January, 1770, about ſeven in the evening. The weather preceding was hot and dry, and accompanied with ſome very ſlight earthquakes. This meteor came from the W. S. W., increaſed in its apparent bulk as it roſe, and, when it arrived at the meridian, emitted ſo ſtrong a light, that, for more than the ſpace of a minute, the ſmalleſt print or writing might eaſily be read. There were darted from the main orb, ſix or ſeven ſmaller portions, reſembling very large brilliant ſtars, which preſently diſappeared. After this, the orb aſſumed the appearance of a large ball of fire, loſing its bulk and ſplendor gradually, and, changing its former direction to that of E. S. E., it deſcended towards the horizon with a long duſky reddiſh *coma*, ſomewhat interrupted acroſs, until it entirely vaniſhed.

The whole time of its duration, from the time it was firſt ſeen, was about five minutes. [Plate B.]

α—Its firſt appearance.

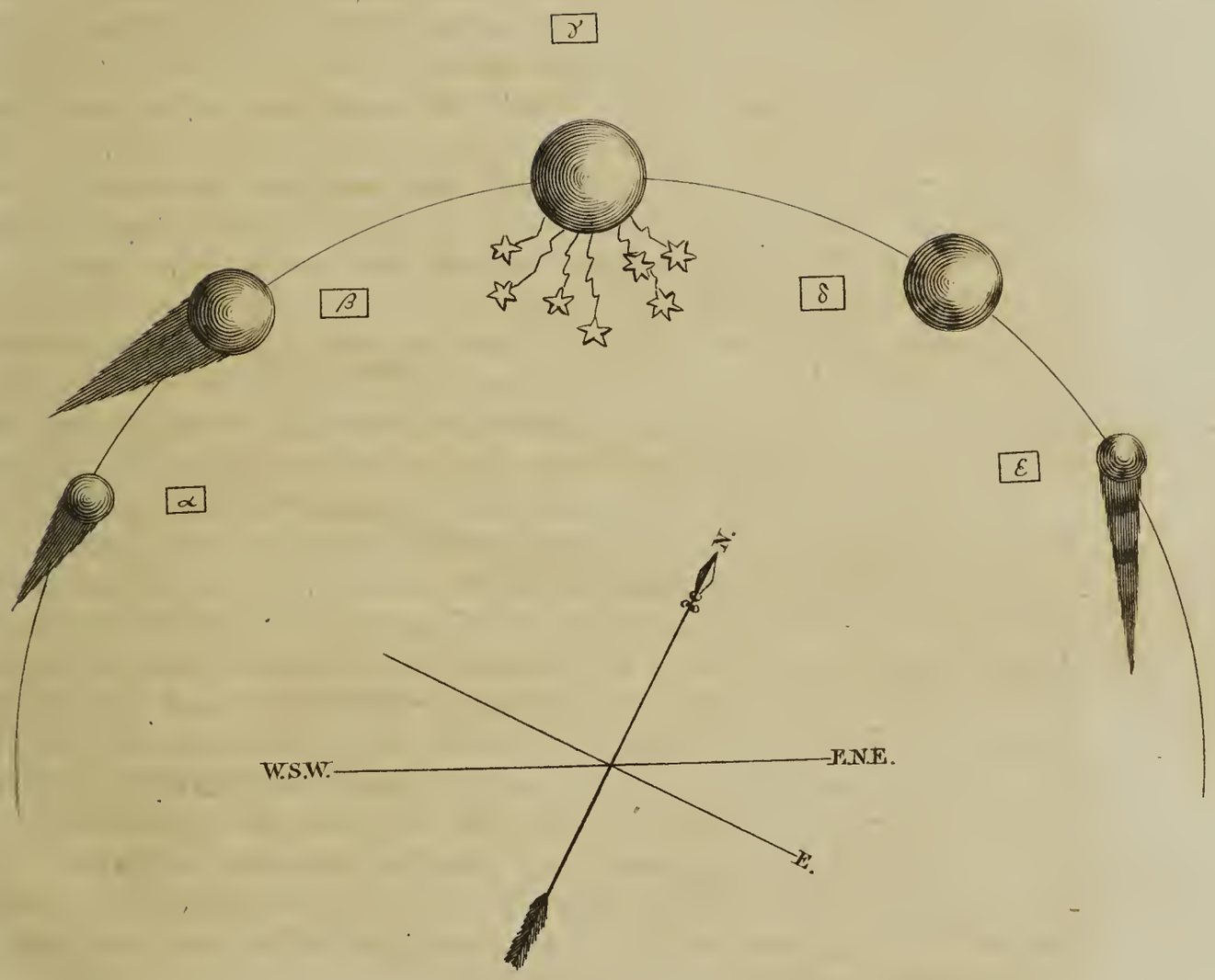
β—Its courſe, and ſeeming increaſe of bulk as it aroſe.

γ—Its greateſt elevation and diviſion into minuter portions. At this period it was moſt refulgent, and appeared much larger than in any other part of the arch, and without any tail, as it alſo did in the next ſtation.

δ—Its

Pl. 16

To face p. 628. Vol. II.



δ—Its appearance, as it changed its direction downwards, and to the E. S. E. It now began to lose its lustre, and assumed the complexion of a red-hot coal of fire, having some parts brighter than others, as it were in concentric circles.

ε—Its phasis, as it descended with a faintly-luminous, reddish tail, transversely interrupted with dark or dusky portions, before the whole entirely disappeared.

About 14 or 15 minutes after it ceased to be visible, there was heard a very full and loud report, like the explosion of a powder magazine, which gradually declined into a sound resembling distant thunder, or the distant rumbling of several coaches over stones. It was seen with the same appearances at Luidas, Port-Morant, and many other parts of the island.

Whether the explosion, that was heard, happened on its attaining the meridian, or at the time of its vanishing, is uncertain; but, in either case, the distance must have been almost incredibly great. Sound is supposed to move 1000 feet in a second of time. In the first case, it must have been distant from the observers about 214 miles; and, in the second case, about 181¾, allowing the interval at the lowest computation, or 14 minutes; consequently, in the former case, it must have been very far indeed above our atmosphere, at the height commonly supposed of 45 to 50 miles: and its velocity must have been immense; since, taking the length of the island for the chord of the arch apparently described (equal to about 150 miles), it traversed over it in so short a space of time as that of 5, or, at most, 6 minutes. If, therefore, it could admit of mensuration, the series would turn out amazingly great.

Whether it portended a change of weather seems not to be very certain; but in *May* following, the heaviest rains fell after the long drought, that had been known for the time of year. But to return:

The means whereby the mischief of lightning is warded off from mens habitations, is one of the greatest and most useful discoveries that the present age has afforded.

Experiments in electricity shewed, that the dangerous effects of this ætherial fire might be obviated, by attracting it upon iron rods erected to the height of some feet above the roofs of buildings, and carried on to the earth below, to the depth of two or three feet in a direction, diverging from the foundation; or into a well, or piece of water.

The ingenious Mr. Franklin, whom I have often quoted, was the first who introduced this invention into practice. He erected several of these apparatus on different buildings in Philadelphia; experience taught him how to improve them still further; and at length that ele-

ment, which uſed to be ſo tremendous when left to its own ungoverned rage, ſubmitted to his controul, and ſuffered itſelf to be conducted with as much facility along his rods, as water through a pipe. He eſtabliſhed the invention upon this corollary; viz. That iron being the ſubſtance in nature which ſeems moſt readily to attract the electric fluid, or matter of lightning, therefore an electric or thunder-cloud, paſſing over an iron conductor properly diſpoſed, will be diſarmed of its ammunition. At ſuch a time the rod will vibrate, and upon the appulſe of a finger emit ſparks, with a noiſe, or ſmall exploſion.

Profeſſor Richmann at Petersburgh was deſtroyed by an apparatus, in which the conductor was carried no lower than the table in his ſtudy. Whilſt he was attentively obſerving it during the paſſage of a thunder-cloud over the houſe, a ball of fire ſhot from the conductor to his forehead, killed him inſtantly, and damaged the room. The reaſon aſſigned for this accident is, that his body was at that very time the neareſt to the earth, and therefore ſtood in place of a conductor; and it is therefore juſtly to be concluded, that if the iron chain, inſtead of ſtopping at the table, had been continued down quite into the earth, this misfortune would not have befallen him. But I do not know if we are to call it unfortunate; it was only the ſacrifice of one life, perhaps, to effect the preſervation of many; and it ſuggeſted a hint for the more ſecure method of fixing conductors on houſes, for the better protection of their inhabitants.

When this fluid is poſſeſſed of a metallic conductor, it is found to go in queſt of none other; and is never known to deviate, if ſuch a conductor is of ſufficient diameter or ſubſtance to carry off the whole that may happen to fall upon it at any one time. If ſuch an apparatus, of due ſolidity, was fixed on lofty church ſpires, it would probably reſcue them from a fate that is now become too common. At preſent, the tall rod, on which their vanes revolve, ſerves as a ready attractor to draw the lightning down upon them, and conducts it as far as it beds into the ſtone or wood-work. But, in conſequence of an obſtinate and infatuated adherence to old cuſtoms, we hear of infinite devaſtations committed by lightning on ſome or other of theſe venerable fabrics every year, in England, and other countries; ſtones are diſplaced and whirled away to a great diſtance, lead melted, bells thrown down, walls ſplit, and timbers fired or ſhivered into atoms. A practice equally wrong ſtill prevails among maritime people, of fixing iron ſpindles on the top gallant maſts of ſhips, which by their power of attraction have often produced the moſt fatal conſequences, as well to ſuch veſſels, as to the perſons on board. A few years ago, two veſſels ſailed from a port on the North ſide of Jamaica, bound to North America,

rica, and laden chiefly with rum; on board one of which, a gentleman embarked paſſenger, with his wife and child. They had not left the port many hours before a thunder guſt came on; the lightning, attracted by the iron ſpindles, fell on the ſhip in which the gentleman and his family were, and ſet fire to the rum (probably cauſed by the iron hoops on the puncheons), which blew up in a moment, and not a ſoul on board eſcaped; for the accident was ſo ſudden, that the veſſel in company could give no aſſiſtance; and ſo fatal, that it did not appear any one individual ſurvived the exploſion.

Some veſſels belonging to North America are furniſhed with conductors; others have wooden nuts or caps on their top gallant heads, which are leſs dangerous; but too many in the trade retain their ſpindles; and, therefore, it is no wonder, conſidering their multitude, that many are every year ſtruck, and much damaged, and others ſent to the bottom, and never afterwards heard of.

As reſin is a non-conductor, or a repellent of the electric matter, ſo it has been obſerved, that when the deck of a ſhip has been well paid over with a coat of reſin and turpentine, it has proved a means of preſerving it, by ſtrongly reſiſting the entrance of the lightning; and ſuch an inſtance I remember to have read, of a ſmall veſſel that was ſtruck on the coaſt of Guiney.

It is a good remark of Dr. Hales, that natural philoſophy is not a mere trifling amuſement, as ſome are apt to imagine; for it not only delights the mind, and gives it the moſt agreeable entertainment, to ſee in every thing the great wiſdom, power, and goodneſs, of the Supreme Architect; but is alſo the moſt likely means of rendering the gift of kind Providence, this natural world, the more convenient and beneficial to us, by teaching us how to avoid what is hurtful, and purſue what is moſt uſeful and conducive to our welfare.

Thankful therefore ought we to be to that Gracious Being, who, at the ſame time that he has for wiſe ends involved ſome parts of his machinery in ſuch concealment, as to be inſcrutable by the human intellect, has, nevertheleſs, permitted our attainment of the uſeful parts of knowledge, or ſuch as tend to inſtruct us in the better preſervation of life and health.

Before I enter upon an examination of the different methods propoſed for ſhaping and fixing the electrical rods, recommended for preſerving buildings, I ſhall relate the hiſtory of ſome accidents by lightning, which fell within my notice or information, in Jamaica, becauſe they will appear to corroborate very ſtrongly the modern theory of that fluid.

In 1758, a white man having taken ſhelter under a large cotton tree

tree of ſeveral feet diameter, from a thunder ſhower, the lightning fell on the tree, ſevered it in two, and killed him; his body was driven to ſome diſtance by the force of the ſtroke.

From the effects, obſerved on trees that have been ſtruck with any conſiderable flaſh, it ſeems, that the lightning, by ſuddenly deſtroying the air which ſurrounds them, or highly rarefying the air and aqueous particles contained within them, cauſes their tubes and veſſels to burſt aſunder, much in the ſame manner as large blocks of ſolid wood are rent in pieces, by the expanſion of gunpowder, which deſtroys their continuity.

Two Negroes aſcending towards the ſummit of a hill, with iron bill-hooks on their heads, in a thunder-ſtorm, were both killed by a ſtroke of lightning, attracted; no doubt, by the hooks.

1763, in September, the lightning fell twice in Spaniſh Town, but providentially hurt no perſon. The firſt ſtroke darted on a tall tamarind tree, and ſhivered it. The ſecond, which happened Sept. 3, fell on two cocoa-nut trees about 50 feet high, which grew between the gate of a yard and the corner of a dwelling-houſe, about 15 feet lower from the ridge to the ground, and diſtant from the trees about 20 feet. There were other buildings near, which were taller than the ſummit of the trees. It was evidently attracted by the ſharp apex of the ſpatha which riſes from their crown, tapering into a fine point. After the lightning had cut off their tops, and ſet them on fire, it darted off to the hinges, and other maſſive iron work about the gates; it wrenched the poſts, on which they were hung, out of their places, and ſhattered the gates. Another ſtream flew to a ſmaller gate about five feet high, directly in a line with the fore-door of the houſe, and not above twenty feet diſtant, wrenched the iron work, and damaged the gate; but not the ſmalleſt injury was done to the houſe.

On the 14th of the ſame month, the clouds appeared extremely black over Liguanea, and there ſeemed to fall a very hard rain.

The leeward edge of theſe clouds was high in the atmoſphere, and extended over Spaniſh Town, but not ſufficiently far to the Weſtward, ſo as to ſcreen it from the ſun. The air was conſequently very ſultry, and we had one ſevere clap of thunder, which, following the flaſh in a ſecond of time, was ſuppoſed at no great diſtance from us. About ten minutes after two o'clock P. M. I was juſt about quitting my chamber, where I had been dreſſing, when I heard a violent bounce or ſhock againſt the door, as if ſome perſon on the outſide had violently thrown the whole weight of his body at once to force it open; almoſt at the ſame inſtant, the ſaſhes of the windows being up, I felt the impreſſion of a ſudden ſtroke of air upon me, ſuch as happens

to

to perſons ſtanding near the mouth of a cannon, when fired off; and immediately ſucceeding this ſhock, I heard thunder at ſome diſtance. I was at a loſs to account for it, eſpecially as, upon enquiry, I learnt that the whole houſe had been ſhook, and that the windows rattled as if an earthquake had happened; but as I felt no tremor in the floor, I could not aſcribe it to that cauſe. Some Negroes, walking in the ſtreets, ſaw a ball of fire deſcend towards Port Royal harbour, and preſently after a column of blueiſh ſmoke ariſe, to which ſucceeded the ſhock of the exploſion, for ſuch it proved to be, of the powder magazine at Moſquito Point, diſtant from Spaniſh Town in a direct line ſomewhat more than ſeven miles. This magazine was built entirely of ſtone, bomb proof, and ſtood on ſwampy, ſandy ground, cloſe by a lagoon, and juſt within the N. E. baſtion of the fort, next the harbour. As the nature of the foundation, from the near approach of water to the ſurface, would not admit the ſinking of the floor, all the powder was ranged ſeveral inches above it, to be the more ſecure from damp exhalations.

On that day the whole ſea-ſtore of powder belonging to the Valiant man of war had been landed at the fort, and laid up in the magazine, and there were in it beſides, about 2500 barrels; in all about 2900. The gunner, who attended the ſtowing it, had juſt finiſhed his work; and having locked the door of the magazine, ran to the inlet of water which flows up along the North flank of the fort, where he haſtily ſtripped off his cloaths, and plunged in, to waſh away the ſmut and duſt of the powder, with which he was plentifully beſmeared. This probably ſaved his life; for, whilſt he was diving under water, a ball of fire darted from the clouds, and the tremendous exploſion immediately ſucceeded. A Negroe, paſſing in a boat between Kingſton and Paſſage Fort, ſaw the lightning fall, and preſently after the magazine blew up, cauſing ſuch an agitation in the water round him (for he was at that time but a little way to windward of the fort) that he gave himſelf up for loſt. A centinel, who was poſted on the N. E. baſtion of the fort, cloſe by the magazine, on the firſt appearance of the ball of fire, had the preſence of mind to jump through an embrazure, to the foot of the curtain next the harbour, and by this means was preſerved. But another centinel, who ſtood at the entrance of the area, leading to the magazine, was inſtantly deſtroyed, together with almoſt every ſoldier and Negroe upon the eſplanade of the fort, and two ſoldiers, who were walking on the beach of Saltpan Bay, near a mile diſtance, by the fragments of ſtone.

The magazine itſelf was torn up from below the foundation; even the very piles on which the firſt courſes of maſonry had been laid, were drawn out, as it were by the root, and thrown different ways; leaving a ſpacious hollow of 15 feet deep, and 50 feet over, which was ſoon converted

into a pond by the influx of water that drained into it. It was thought that the yielding of the ſand in this part, proved the cauſe of the exploſion's not committing ſo much havock, as otherwiſe would have happened if the ſoil had been rocky, and capable of reſiſtance. The filling up this cavity took afterwards near 9000 ton of rubbiſh, and coſt the country 1925*l.* ſterling.

Within the fort, moſt of the guns (24 pounders) on the adjacent baſtion were diſmounted; and one gun thrown clear over the rampart into the harbour, from the N. E. flank, which was damaged for near 140 feet of the wall. A new building near the magazine, fitted up for the officers barrack, was tumbled into a heap of rubbiſh. The commandant's houſe was only in part demoliſhed; and here lieut. Monſel, of the 74th regiment, was driven through a chaſm made in a partition wall behind him, and ſo terribly wounded, that he died not many days after; the guard room, gunner's apartment, warehouſe, and other offices, were very much ſhattered. The exploſion, having vented its fury chiefly on theſe buildings, took very little effect on the ſoldiers barrack; this is a ſtrong ſtone building, and at that time contained a great number of men, with their wives and children, none of whom providentially received any hurt, although a part of the roof at the N. E. hip was torn away, and many large ſtones fell like bomb-ſhells through the roof and floorings.

In ſhort, what with the mangled carcaſes of the unhappy ſufferers, the ruin and devaſtation of the buildings, and the diſperſion of their materials over every part of the fort, the whole exhibited as ſhocking a ſcene, as if it had juſt undergone a furious bombardment.

There were killed in and near it,	4 officers,	
	1 officer's lady,	
	about 25 private men,	
	11 Negroes,	
	—	Total 41
Wounded (privates and Negroes) about		50
	Total killed and wounded, about	91

The damage occaſioned to the fort and buildings, with the loſs of powder, furniture, utenſils, &c. cannot be eſtimated at leſs than 43,000*l.* ſterling.

The powder marked the courſe it took towards Paſſage Fort N. W. to a conſiderable diſtance, ſcorching the leaves and ſmaller branches of the mangrove trees the whole way; but that the whole of it was not enkindled, appeared from the black ſhower of unconſumed grains, which fell all about the houſes at that place, near two miles diſtant from the magazine.

The

The ſhock impreſſed upon the air was very ſenſibly felt at Spaniſh Town, as has been related, where it damaged the roofs of two houſes in a N. W. direction from the fort, and affected the doors and windows in general. The concuſſion was felt in a circle of 10 or 14 miles round. Some ſaid, that windows were broke at the diſtance of 17 miles, but this wants confirmation. Such was the deplorable cataſtrophe occaſioned by one flaſh of lightning. I ſhall now endeavour to trace the ſource of it.

The magazine had only one door, which was very ſolid, and hung with large ſtrong iron hinges, to the Eaſtward. The windows, or air-holes, were likewiſe ſecured with lattices of iron wire. But, conſidering all circumſtances, the very low ſituation of this door, and that on the ramparts (which were higher than the magazine) there was a line of guns, more likely to attract, and many ſhipping in the harbour, whoſe maſts preſented much nearer and more convenient conductors, it is not probable that the lightning was drawn down by any of the iron work uſed about that ſtructure. The gunner declared, that, in ſhifting the powder, there was a large quantity of duſt ſcattered about in the air; is it not then more likely, that the particles of powder were driven by the breeze to a certain height and diſtance in the atmoſphere to leeward, until they came within the ſphere of action of the electric matter in the clouds, then hovering over the adjacent country; that they were thus ignited, and thus communicated the flame in an immediate direction to the very door of the magazine? It is to be recollected, that the lightning made its deſcent but a very few minutes after the powder was carried in: and, upon the whole, therefore, this ſeems to me the moſt probable way of accounting for it; from which, if it really was the cauſe, we may conclude, that even an iron conductor placed upon, or near, the magazine, would not have preſerved it; for there was then, in fact, a train of powder laid, and continued from the door, to the *fuſe*, or electric fire in the neareſt cloud.

The diſtance of time between the *aërial impulſe* (from the expanſion of the powder) and the *ſound* of the exploſion at Spaniſh Town (7 miles) was about *two ſeconds*, as nearly as I could compute; but, not being able to learn the exact time when the accident happened, I could form no calculation of the progreſs of the ſound, for the given diſtance of place.

From the 14th of this month to the 26th of October, we had a great deal of thunder and lightning every day almoſt, with but few intermiſſions. On the 24th of October, in a ſquall of rain driven off the mountains, the lightning fell again in Spaniſh Town on a tree in a gentleman's garden, very near two houſes. It deſtroyed the tree, and deſcending to a pepper buſh at the foot, cut it aſunder in the middle, but neither damaged the houſes, nor hurt any perſon.

In 1766, it fell on the turret of Port Royal church, and damaged it very much. The powder magazine in Fort Charles, at no great diſtance from it, has a ſolid terraced roof of brick, of a conical figure, round which are fixed ſeveral iron hooks, for better enabling workmen to repair it. Theſe were all corroded with ruſt, notwithſtanding which, if they had lain within the ſphere of action of the lightning's ſtroke, the conſequences would, in all probability, have been very terrible and fatal.

In the Vale of Luidas (the date forgot) the lightning fell upon a bell, which was raiſed on a timber frame about 15 feet high, very near the gable end of a gentleman's houſe. The axis upon which the bell turned, had an iron handle fixed into it, to which the rope was faſtened. This handle made an acute angle, preſenting its point upwards, and ſo became an attractor. The bell was toſſed to ſome diſtance, the frame ſhivered to pieces, and a ſplinter of it driven through one of the window-ſhutters, but no other damage occurred to the houſe.

Happening in the month of October to be traveling in company on the Northſide, in the midſt of the rainy ſeaſon, the rain poured down in ſuch torrents, that our cloaths were all dripping wet to the very ſkin; and my hat was ſo drenched, as to let the water percolate through like a ſieve; in this condition we were ſuddenly inveloped with a multitude of little ſparks of pale blue ſulphureous fire, ſnapping like the electric diſcharges, but much ſmarter and louder, accompanied by one of the moſt dreadful claps of thunder I ever heard; my horſe was ſo terrified, that he jumped at once upon a rock on one ſide of the road, where he ſtood trembling in every joint; I was obliged to diſmount, and get him off as well as I could to a contiguous bank; and was not a little pleaſed, when I found that none of the company had been hurt. We attributed our eſcape to the quantity of rain water ſtreaming from our cloaths and horſes, which probably conducted away whatever particles fell upon us, though we were not ſenſible that any came ſo near. After this, my horſe required neither whip nor ſpur to urge him on; for at every clap of thunder, though at a great diſtance, he mended his pace to the end of the journey.

In July 1767, the lightning ſtruck the main maſt of a merchant-ſhip at Morant Bay, and ſplit it in pieces.

In the ſame month it killed a Negroe boy, who had taken refuge under a tree from the rain, near the foot of Guy's Hill in Sixteen-mile-walk.

And in this month it alſo fell on a cane-piece in the country, and burnt about eight feet ſquare of canes. I examined the ſpot, but could not perceive any veſtige of furrows, or perforations in the earth.

There was much thunder during this month and Auguſt; the weather in the latter month extremely hot, and one day, in Spaniſh Town, the thermometer roſe to 93, which was 1 degree higher than ever I remarked here, either before or ſince.

Being

Being, in the month of October, at a houſe in St. Mary's pariſh, after ſeveral dry, warm days, a heavy rain came on, and about two o'clock P. M. two very ſmart flaſhes of lightning were obſerved near us, the thunder following almoſt inſtantaneouſly. The houſe I was in ſtood on part of a high hill, and within about 200 yards of the ſummit, whereon a large cotton tree grew, at leaſt 80 feet in height, and near the baſe of it was a bed of the ſorrel plant: I had ſeen the ſorrel in the morning looking very well, and healthy; but on the day after this thunder-ſhower, it appeared all blaſted, and the leaves as if ſinged by fire; from that time it withered, and periſhed. It was concluded, that a ſtream of the lightning had fallen upon it; but it was a matter of the utmoſt ſurprize to find, that ſo vaſt and lofty an object as the tree did not appear to have ſuſtained any damage, either in its limbs or bark; nor can I as yet account for it, unleſs by ſuppoſing, that every external part of the tree was wetted with the rain water, and thus gave an eaſy conduit to the electric fluid in its deſcent to the earth. As the progreſs of lightning is nearly inſtantaneous, and that of ſound above one thouſand feet, or (according to Sir Iſaac Newton) about one thouſand one hundred and forty-two feet in a ſecond, the thunder and lightning happening nearly in the ſame inſtant, proves the exploſion to have been very near us.

SECT. VIII.

The means of preſerving Ships, Buildings, and Perſons from Accidents by Lightning.

Firſt, in regard to ſhips. We are to guard againſt thoſe thunder clouds, which come very near us. The maſt of every ſhip which is beſet with thoſe bright lights called *comazants*, or the *feu de St. Elme* of the French, is within the ſphere of action of a thunder cloud. Anciently, when theſe were ſeen, they were only conſidered as the attendants of a ſtorm, and no conſequence was drawn from them; but from the late diſcoveries, they are known to be no other than a modification of the ſame meteor which conſtitutes thunder and lightning. They demonſtrate, that danger is near, and that its effects ſhould be prevented. This may be done by connecting a rod of iron or other metal with the ſpindles at the top of the maſts, and conducting it down their ſides in any convenient direction into the ſea water. By this means, the accumulation of the matter of thunder and lightning will be prevented, to a conſiderable diſtance from the ſhip, by its being ſilently diſcharged through the rod; and, if a ſtroke of lightning ſhould fall, it will be conducted into the ſea without damage, which

which cannot be done by the maſts and yards themſelves; for theſe from their height, figure, and conſtituent parts, without an apparatus of this kind, tend to direct and conduct the lightning into the ſhip. The application of ſuch rods to the maſts of ſhips is neither difficult nor expenſive; as a braſs rod of ½ an inch thickneſs may, in moſt caſes, be large enough to anſwer this purpoſe. Braſs is preferable to iron in hot climates, as being leſs liable to ruſt; and any metal, corroded with ruſt to the centre, ceaſes to be of any uſe, in directing the lightning, in the degree hoped for from ſuch an apparatus. I have been informed by a gentleman, a native of Philadelphia, who had ſeen many of theſe apparatus fixed on houſes in that province, that the iron conductors ſeldom ruſt there; but, by reaſon of very frequent diſcharges of the electric fluid through them, they acquire a fine ſteel-blue colour: and Mr. Franklin relates, that in courſe of ſome experiments for giving polarity to needles, were *they* ſometimes finely blued, like a watch ſpring, by the electric flame, which was always the more permanently fixed, the greater the diſcharge that was ſent through them.

In Jamaica, iron is very ſubject to ruſt and ſcale off; here, therefore, the rods had better be made of copper or braſs, and painted or gilt; the coat of paint does not impede the deſcent of the electric matter through the metal, though a diſcharge of this kind will perhaps detach the paint, as was proved in an electrical experiment. In other reſpects, iron or ſteel is the beſt conductor, as being leaſt apt to fuſe; next copper; then braſs; as in the following ſeries:

	Iron.	Steel.	Copper.	Braſs.
Degrees of expanſion by Muſchenbroeck's experiment . . .	80	85	89	110

I ſhall purſue Mr. Franklin's inſtructions in regard to the apparatus proper for ſecuring buildings, ſtating at the ſame time his general theory on the operations of this fluid; as his remarks are not only curious but very uſeful, and neceſſary for better underſtanding this ſubject.

Whatever properties we find in electricity, are alſo the properties of lightning. This matter of lightning, or electricity, is an extremely ſubtile fluid, penetrating other bodies, and ſubſiſting in them equally diffuſed.

When there happens to be a greater proportion of this fluid in one body than in another, the body which has moſt, will communicate to that which has leaſt, till the proportion becomes equal, provided the diſtance from them be not too great; or, if too great, till there be proper conductors to convey it from one to the other.

If

If the communication be through the air without any conductor, a bright light is ſeen between the bodies, and a ſound is heard. In the electrical experiments, this light and ſound is called the electric ſpark and ſnap; but in the great operations of nature, it is called lightning and thunder.—If the communication of this fluid is by a conductor, it may be without either light or ſound, the ſubtile fluid paſſing in the ſubſtance of the conductor.

If the conductor be good and of ſufficient bigneſs, the fluid paſſes through without hurting it; if otherwiſe, it is damaged or deſtroyed. All metals and water are good conductors. Other bodies may become conductors by having ſome quantity of water in them, as wood, and other materials uſed in building; but, not having much water in them, they are not good conductors, and therefore are often damaged.—Glaſs, wax, reſin, ſilk, wool, hair, feathers, and even wood perfectly dry, are non-conductors; that is, they reſiſt inſtead of facilitating the paſſage of this fluid.

When this fluid has an opportunity of paſſing through two conductors, one good and ſufficient, as of metal, the other not ſo good, it paſſes in the beſt, and will follow it in any direction.—The clouds have often more of this fluid in proportion than the earth; in which caſe, as ſoon as they come near enough (or within the ſtriking diſtance), or meet with a conductor, the fluid quits them and ſtrikes into the earth. A cloud fully charged with this fluid, if ſo high as to be beyond the ſtriking diſtance of the earth, paſſes quietly without making noiſe, or giving light, unleſs it meets with other clouds that have leſs.—Tall trees and lofty buildings, as the towers and ſpires of churches, become ſometimes conductors between the clouds and the earth; but, not being good ones, that is, not conveying the fluid freely, they are often damaged.

Buildings that have their roofs covered with lead, or other metal, and ſpouts of metal continued from the roof into the ground, to carry off the water, are never hurt by lightning; as, whenever it falls on ſuch a building, it paſſes in the metals, and not in the walls.—When other buildings happen to be within the ſtriking diſtance from ſuch clouds, the fluid paſſes in the walls, whether of wood, brick, or ſtone, quitting the walls only when it can find better conductors near them; as metal rods, bolts, and hinges of windows and doors, gildings on wainſcot, or on frames of pictures; the ſilvering on the backs of looking glaſſes, the wires for bel's, and the bodies of animals as containing watery fluids. And, in paſſing through the houſe, it follows the direction of theſe conductors, taking as many in its way as can aſſiſt its paſſage, whether in a ſtraight or crooked line; leaping

-ing from one to the other, if not far diſtant from each other, only rending the wall in the ſpaces where theſe partial, good conductors are too diſtant from each other.—An iron rod being placed on the outſide of a building, following the form of the roof or other parts, and continued from the higheſt parts down to the moiſt earth in any direction, ſtrait or crooked, will receive the lightning at its upper end, attracting it ſo as to prevent its ſtriking any other part; and affording a good conveyance into the earth, will hinder it from damaging any part of the building. A ſmall quantity of metal is found able to conduct a great quantity of this fluid. Wire no bigger than a gooſe-quill, has been known to conduct (with ſafety to the building as far as the wire was continued) a quantity of lightning that did prodigious damage, both above and below it; in North America, it is common to make it of half an inch, ſome of three quarters, or an inch diameter.—Mr. Wilſon is of opinion, that the conductors ſhould be made of *one piece of metal only*, and of an equal diameter throughout. What this diameter ought to be, may depend on the magnitude of the building to be protected; but, ſince no one can fix the limits of the greateſt diſcharge that may poſſibly happen, it is *ſafeſt* to uſe conductors, or rods, of ſuch thickneſs as to promiſe ſecurity againſt the moſt violent attacks; therefore, a *gooſe-quill wire* is certainly not ſo ſafe as one of larger dimenſions; and, in confirmation of this, we are told of a bar of iron of *one inch* diameter, erected in Martinico, which, by a violent ſtroke of lightning, was reduced in one part to the thickneſs only of a ſlender wire*. A rod therefore of 1 ½ inch diameter, or even 2 inches, will not be too large.—Chains are improper, as well as pieces of metal linked together, becauſe the links though apparently in contact with each other, are not abſolutely ſo, but are divided by ſpaces imperceptible to the eye; and the lightning, in endeavouring to paſs from one link to another, frequently melts them by its violent action, whilſt the other parts remain entire.—The rod may be faſtened to the wall, chimney, *&c.* with ſtaples of iron. The lightning will not leave the rod (a good conductor) to paſs into the wall (a bad conductor) through the ſtaples; it would rather, if were in the wall, paſs out of it into the rod to get more readily by that conductor into the earth.—If the building be very large and extenſive, two or more rods may be placed at different parts, for greater ſecurity. —The lower end of the rod ſhould enter the earth ſo deep, as to come at the moiſt part, perhaps two or three feet; and if bent when under the ſurface, ſo as to lie in a horizontal line ſix or eight feet

* I ſuſpect their was a droſſineſs, or ſome other defect in the ſubſtance of the bar, at that part of it, which cauſed an interruption to the free current of the electric ſtream through it.

 from

from the wall, and then bent again downwards three or four feet, it will prevent any damage to the ſtones of the foundation.

For the *upper* part, Mr. Franklin propoſes, that it ſhould be raiſed ſix or eight feet above the higheſt part of the building; and that it ſhould be tapered gradually to a fine *ſharp point*, and the point gilt, to prevent its ruſting.—But a difference of opinion has ariſen concerning the uſe of *pointed* rods, inſtead of *blunt*, or unpointed.

Mr. Franklin's ſyſtem is, "that *points* have an equal power to throw "off, as to draw on, the electric fire."—"That *points* attract electricity "at greater diſtances in the gradual ſilent way; but that, *knobs* will "attract a ſtroke at the *greateſt* diſtance."—"That *points* tend to re-"pel the fragments of an electrified cloud; but that, *knobs* draw them "nearer."

To theſe poſitions Mr. Wilſon has objected very ſubſtantial reaſons.

That it does not appear that *points* draw off and conduct away lightning imperceptibly, without exploſion, during a thunder ſtorm; but, on the contrary, there are many inſtances, where violent exploſions of lightning have happened to conductors that were *ſharply pointed*, and three in particular, the account of which was given in Mr. Franklin's publication; where the *points* were diſſipated or deſtroyed, and a ſmall part of an iron rod melted at the place of the point's inſertion.—That every point is to be conſidered as *ſoliciting* the lightning, and, by that means, not only contributing to *increaſe* the quantity of every actual diſcharge; but alſo frequently occaſioning a diſcharge, where it might not *otherwiſe* have happened. If, therefore, we *invite* the lightning, whilſt we are ignorant of what the quantity or the effects of it may be, we may be *promoting* the very miſchief we mean to prevent. Whereas if, inſtead of *pointed*, we make uſe of *blunted* conductors, thoſe will as effectually anſwer the purpoſe of conveying away the lightning ſafely, without that tendency to increaſe or invite it.—Points are meant to *invite* or draw off the lightning continually; but we find, from experience, that they are extremely ſubject from their *tenuity* to be melted down, and deſtroyed; they are, therefore, ſo far rendered uſeleſs and vain, as no one can exactly ſay what the duration, or what the effects, of any ſtorm of lightning may be; and many difficulties may occur in the timely replacing of ſuch as are ſo melted, or rendered uſeleſs. Lightning acts with more power upon *ſharp points*, than blunted ends, in the proportion of at leaſt 12 to 1. And as *blunted* conductors, of ſufficient dimenſions, are found capable of conveying away the lightning ſafely whenever it attacks them, why ſhould we have recourſe to a method which is uncertain, and may be dangerous?

A former building on the Eddyſtone rock was ſet on fire by lightning. The fixing a conductor therefore on the preſent light-houſe was thought highly proper; and it was reſolved to put up a conductor *without a point*, that no lightning might be *unneceſſarily* ſolicited to the building; and that all the lightning, which accidentally ſhould fall on it, might be conveyed away without injuring it. This conductor was fixed *twelve years* ago, and the building has ſince received no injury from lightning.

Upon the ſame principle this gentleman proteſts againſt elevating the conductors or rods too great a height above any building. "The "*longer* the conductors are above any building, the more *danger* may "be apprehended from them; as they will then approximate nearer "in their effects to thoſe that are *pointed*."

It is, I think, pretty clear from the remarks offered by Mr. Wilſon, that Mr. Franklin, when he made his electrical experiments, was conſidering only how he ſhould beſt *invite* or *draw down* the matter of lightning; and that he found *ſharp points* anſwered this purpoſe better than others. But the great and eſſential principle being, "that lightning, when it deſcends towards the earth, prefers a me-"tallic conductor to every other, and will readily leave any other for "it;" the concluſion is plain, that there can be no poſſible reaſon given, why we ſhould uſe methods to *invite* a ſtroke; ſince all that is required for our ſecurity is, to catch that body of lightning on a metallic conductor, and convey it ſafely into the earth; which body of lightning would otherwiſe, and if no ſuch metallic conductor had been provided, have entered the ſubſtance of the building, and perhaps laid it in ruins. I have ſeen ſeveral points taken from rods or conductors that had been ſtruck by lightning in North-America, and the metal of all of them appeared to have been greatly affected by the electric action; the fine *apex* of ſome was diſſolved into a little round ball; others had undergone a greater degree of fuſion; whilſt ſome were only bent into a crooked figure, but the points of all were rendered obtuſe. This variety of effect was occaſioned by the greater or leſs quantity of the fluid which had fallen on them; the points, by reaſon of their *fineneſs alone*, were fuſed or diſſipated, as a very ſmall wire would have been in the ſame ſituation, whilſt the thicker parts, and the rods themſelves into which they had been riveted, remained uninjured, but conducted the lightning ſafely to the earth; whence it is certain that, if no ſuch points had been fixed in the rods at all, the latter would have conducted equally as well without, as with them.

Many

Many of the houſes in Jamaica are conſtructed with hip roofs. A perpendicular piece of wood, or a ſmall maſt, might be erected againſt the wall, at one or both ends of ſuch houſes, at ſuch an elevation as to ſupport a copper rod riſing about three feet above the ridge. If an iron or ſteel rod is made uſe of, it ought to be frequently painted, to hinder the air from corroding it.

Buildings made of fir entirely, having no metal for the faſtenings, ornaments, or conveniencies, are the leaſt liable to be attacked by lightning. Houſes therefore covered with pitch-pine ſhingles are in ſome degree ſecurer than others, ſo long as their turpentine or reſin remains unexhauſted.

Sulphureous and inflammable vapours ariſing from the earth are eaſily kindled by lightning. So alſo the vapours ſent out by ſtacks of moiſt hay, corn, or other vegetables, which heat and reek. Wood rotting in old trees, or buildings, ſuffer the like effect. Such are therefore eaſily and often fired. Thatch appears therefore to be an improper covering for building. And it may be owing to this, that old thatched barns are ſo frequently fired in England by lightning.

For ſecuring magazines of powder Mr. Franklin propoſes the erecting a maſt not far from them, which may riſe ſome feet higher than the top of them, with a thick iron rod (*e. g.* four inches ſquare) in one piece, faſtened to it, and reaching down through the earth till it comes to water, which lies not far from the ſurface in the places where ſuch buildings are commonly ſituated. Iron is a cheap metal; but if it were dearer, the expence is inſignificant, conſidering the important ſervice to which it is applied. The rod is adviſed to be of this thickneſs, to allow for its waſting by ruſt; which however might be retarded by painting with common white lead and linſeed oil; it will probably laſt as long as the maſt, and may be renewed with it.

A perſon apprehenſive of danger from lightning, happening during the time of thunder to be in a houſe not ſecured by a rod, will do well to avoid ſitting near a chimney, a looking-glaſs, any gilding on pictures or wainſcot. The ſafeſt place is the middle of the room (ſo it be not under a metal luſtre ſupported by a chain) ſitting in one chair and laying the feet up in another. It is ſtill ſafer to bring two or three mattraſſes, or beds, into the middle of the room, and, folding them up double, place the chair upon them; for they being not ſo good conductors as the walls, the lightning will not chuſe an interrupted courſe through the air of the room and the bedding, when it can go through a continued and better conductor, the wall. But, where it can be had, a hammock, or ſwinging bed, ſuſpended by ſilk cords,

equally diſtant from the walls on every ſide, and from the cieling and floor above and below, affords a tolerably ſafe ſituation in any room whatever; and what indeed may be deemed quite free from danger of any ſtroke by lightning, except what may happen from ſplinters, or other materials violently ſcattered about by the force of an exploſion. The beſt ſecurity, and the only one to be relied on, is, however, a rod or metallic conductor; which in countries particularly ſubject to thunder and lightning, ought to be fixed at every building. It is true that not many buildings are ſtruck, nor perſons deſtroyed, in a year; but in all countries there are particular ſituations more expoſed to ſuch accidents than others, and there are minds ſo ſtrongly impreſſed with the apprehenſion of them, as to be very unhappy every time a little thunder is within their hearing; the advantage of fixing ſuch conductor does not therefore conſiſt alone in making us *ſafe*, for it contributes alſo to make us *eaſy*. The ſtroke it ſecures us from might have chanced perhaps but once in our lives; but it relieves us a hundred times from thoſe painful apprehenſions, which diſturb our happineſs.

Terrible as this fluid appears when left at liberty to do miſchief, it is certain, that with reſpect to its operation upon animal bodies the effect is ſo inſtantaneous that no pain can be felt; it is the eaſieſt of all deaths; and in this the mercy of the Divine Being is obviouſly manifeſted: the particular uſes of it in the grand machinery of the world are not as yet inveſtigated to any extent, but as far as they are diſcerned it appears ſubſervient to a variety of great and beneficial purpoſes.

A phyſician at Paris is ſaid to have introduced the practice of electrifying the bed-chambers of ſick perſons, by exciting freſh currents of the etherial fire, and thereby expelling noxious vapours, or a peſtilential diſpoſition of the atmoſphere; and it is aſſerted, that this method has been found, on repeated experiments, a far greater purifier of foul air than even a ventilator.

The lightning, which cauſes ſo much diſmay, contributes doubtleſs to the preſervation of animal life, and the prevention of peſtilential diſtempers; ſuch of them, at leaſt, as owe their origin to a putrid, ſtagnated, and contaminated atmoſphere. They could not probably be diſſipated, and the air reſtored to ſalubrity, without the agitation of winds, or the virtues of this ſubtle fluid excited into action; this, by conſuming the ſulphureous and malignant vapours, which made the air detrimental to health, adapts it to ſuſtain the life of men and other animals, and probably even of vegetables. Ordinary obſervation

on

on the different ſtate of the atmoſphere, before and after a thunder-ſhower, confirms this. The air before theſe ſhowers fall is uſually cloſe, ſuffocating, and ſometimes even putrid. But afterwards, what cool, refreſhing and delightful ſenſations ariſe from the change which lightning has occaſioned, by burning away thoſe foul vapours! It is more particularly neceſſary in climates where the heat of the ſun is continually loading the air with corrupt and inſalutary exhalations. We find therefore the largeſt ſupply of lightning diſtributed to ſuch regions which are moſt in want of it; and by the wiſdom of the Divine mechaniſm, it is likewiſe provided for the coldeſt climates, though but rarely diſtinguiſhed there by any viſible action, except at thoſe ſeaſons of the year, when by the greateſt ſummer-heats, which fill their atmoſphere with morbid *effluvia*, it becomes moſt uſeful and neceſſary to correct them.

Dr. Hales therefore well remarks, that ſuch a ſulphureous ſtate of the air is very prejudicial to the inhabitants of ſome countries; and, when of long continuance, makes them *wiſh for lightning* to purify it. So powerful and ductile an agent is doubtleſs applicable to a thouſand good purpoſes; and, in addition to what have already been ſpoken of, let me add, that it ſubdues the moſt tempeſtuous winds, and is to be deemed the chief preventative of that univerſal devaſtation ſuch winds would always cauſe within the Tropics, if they were not reſtrained by the effects of lightning; and which they never fail to produce, when thoſe effects are for a time ſuſpended.

SECT. IX.

RAIN.

The uſual prognoſtics of rain in the Southern parts of this iſland are, lightning at windward—large towering clouds—fleecy or black, riſing in the South-eaſt, the South, or South-weſt—great heats and faint light ſea-breezes for ſome weeks or days—immediately before the fall of rain a Weſterly or North-weſt wind, for the moſt part gentle: at the ſame time heavy clouds, with thunder approaching the land from the Southern points—the tops of the Blue Mountains appearing perfectly clear of clouds or miſts—the objects upon them tolerably diſtinct, ſeemingly much nearer than uſual, or the whole wearing a blueiſh caſt—great flaſhings of lightning at night in the Southern hemiſphere, betoken rain in ſixteen or eighteen hours. After three weeks of dry weather, a ſlight ſhock of an earthquake was felt at ten in the evening: to this ſucceeded a violent rain in the mountains at two in the afternoon the next day. On a change of wind from the South-eaſt

to

to North or North-eaſt, and *vice versâ*, the clouds to the Eaſtward ſeem collected in huge piles, and preſage rain, which ſeldom fails accompanying theſe changes. When cockroches are obſerved in dwelling-houſes towards evening, flying and running about in great hurry and confuſion, a ſhower may be expected very ſpeedily. A more than unuſual diſturbance and noiſe of rats in the night-time is likewiſe a pretty certain prognoſtic.

In November, on a change of wind from North or North-eaſt to South-eaſt, drizzling ſhowers generally follow. When the evenings are cloſe and ſultry at the full moon, or a day or two before or after, and a bur ſurrounds her diſk very near, rain will probably ſoon happen. Heavy black clouds from the South and South-weſt always bring rain and wind.

In Auguſt, after dry weather, when there is much heat in the air, and but little breeze, if a wind ſprings up from the North, rain and thunder may be expected.

In September, October, November, and May, ſultry, calm weather, and great corruſcations in the evening round the horizon, are certain forerunners of a hard rain, and moſt commonly thunder. Towards the latter end of September, when the wind is gentle, fluttering, and at no ſettled point, the clouds fluctuating different ways, large towering clouds appearing (if in the day-time) of a reddiſh hue, rain and thunder may be expected from the Southward.

If in the month of October the roaring of the ſea is heard at Spaniſh Town, when the atmoſphere aloft is hazy in the morning, as if a miſt was elevated to a great height, theſe are indications of approaching heavy ſqualls with rain.

Rain moſt frequently happens after the full of the moon.

A thin ſcud obſerved towards evening, flying quickly from any quarter, portends a ſmart wind in the night from that quarter, either with or without rain, but more generally with.

Theſe tokens rarely fail. The heavieſt rains do not fall here exactly at the time of the equinoxes; but uſually about thirty days before the Vernal, and as many after the Autumnal; but the latter conform to more regularity in their periods; and when the Vernal ſeaſons fail, the Autumnal are ſure to be more plentiful and of longer continuance than uſual.

There is every reaſon to believe that the rains happen very differently now, both in time and quantity, in this iſland, from what they formerly did; I cannot produce a better teſtimony of this change, than by exhibiting the ſtate of them at Spaniſh Town in 1688, and comparing it with recent obſervations.

The following is Sir Hans Sloane's Table for that year, abridged for greater perſpicuity.

Months.	North Wind Days.	Sea Breeze Days.	Calm Days.	Rainy Days.	Thunder Days.
January	10	21	00	9	00
February	4	21	3	8	00
March to the 17th	00	8	1	6	00
April	no obſervation				
May		30	1	9	8
June		29	1	8	3
July		30	0	6	3
Auguſt		28	variable	12	5
September	1	23	3	16	3
October		23	3	10	2
November	6	21	0	12	0
December	16	14	5	7	0
	37	248	14	103	24

The following table is formed upon obſervations regiſtered for eight years, commencing *anno* 1752; but it is to be remarked that they were not taken in Spaniſh Town, but nearly in the ſame parallel, and juſt within the South-ſide mountains. But as in thoſe mountains a greater quantity of rain may be ſuppoſed to fall than on the level maritime parts, and leſs than in ſome of the North-ſide, Eaſtern and Weſtern, an allowance ſhould be made on that account.

Heavy rains or moderate ſhowers, in eight years, compared with Sir Hans Sloane's table.

Months.	Days.	Sir H. S.	Months.	Days.	Sir H. S.	
January	6	72	May	58	72	
February	17	64	June	55	64	
March	19	48	July	55	48	
April	41	no obſ.	Auguſt	58	96	
November, December	32	152	September	65	128	
		336	October	76	80	Total in 8 years
					488	824
	115			367		482

TABLE

TABLE of one year's rain at an average taken from 1761 to 1764, compared with Sir H. Sloane's.

	1688.	Medium. 1761 to 1764.		1688.	Medium. 1761 to 1764.
January	9 days	3	July	6 days	00
February	8	4	August	12	1
March	6	6	September	16	8
April	no obſ.	4	October	10	10
May	9	6	November	12	6
June	8	5	December	7	00
	40	28		63	25
				40	28
				103	53

In the former comparative table I multiplied Sir H. Sloane's total of ten months and ſeventeen days by eight, in order to make it more agreeable to the eight years obſervation compared with it. From theſe tables, it appears very probable, that full twice as much rain fell in and about Spaniſh Town about eighty or ninety years ago as falls now.

In the latter table for one year, if we ſuppoſe that from the 17th of March to the 1ſt of May, a ſpace omitted by Sir H. Sloane, and at a time of the year when rains generally happen, there were in forty-four days (the ſpace omitted) only three rainy days, which ſurely is a very low computation, it follows that there were juſt twice as many rainy days in the year as at preſent.

Hence we may conclude that the heat is not ſo incommodious now as it formerly was, for a damp hot air is not only more diſtreſſing, but more unhealthful than a dry hot air. We cannot well account for this difference otherwiſe than by ſuſpecting that the climates of moſt countries on the globe undergo ſome change in the revolution of many years; and, excluſive of this, we are to aſcribe ſomething to the clearing of woods in the mountainous parts, which has given a freer ſcope to the wind and vapours. The atmoſphere of the town and adjacent country is probably more cool and pleaſant than it was in Sir H. Sloane's time, when, by confinement of vapours, the weather muſt have been often very ſultry. The lowlands now are leſs frequently refreſhed with rain, but they are the leſs annoyed with muſkeetos, and therefore more pleaſant for habitation. Yet Sir Hans ſpeaks of them in a favourable manner. "The air, ſays he, may well "be affirmed temperate, in that the heat of the day is qualified by "the length of the night, ſo that the ſun has not time ſufficient to "heat

" heat the atmosphere to so great a degree, as where the days are " longer, and the nights shorter, or none at all." He adds, " that " he never found more heat here, than in some vallies near Montpelier; " and that the savannahs are the more temperate, because the sun- " beams are but very little reflected on the body in these open plains; " and the hills adjacent to them are not high enough to interrupt the " current of the wind, or to reverberate the sun's heat." This however must be understood only in a general view, for some of these savannahs are encircled by high lands; but those which run down to the coast, which perhaps were chiefly alluded to by Sloane, are less hemmed in than any other.

The rain precipitates in this island with a violence rarely seen in England, especially in thunder-showers; a traveler, overtaken by one of them, will find no garment, except a cloak of oiled stuff, sufficient to guard him from being soaked to the very skin. I have known the water, after about half an hour's riding in such a shower, percolate in rills through a flapped hat. On these occasions it is always most prudent to ride a brisker pace than usual, in order to keep up the perspiration, especially in the evening. We may apply in effect to the rains in this island, what lord Orrery remarked on those of Italy, just changing the name of place. " After being accustomed to " them, we think the clouds only *drop* in *England*; but here they " melt in instantaneous cascades. In *England* they only produce " showers; with us, they pour down cataracts. In truth, the dif- " ference is amazing."

A heavy fall of this kind was observed to penetrate seventeen inches into the earth. The soil was what is distinguished here by the name of brick mould.

General quantity of rain in one year at the places undermentioned.

Lowlands of England.		Hilly parts of England.		Pisa in Italy.		Paris.		Surinam.		Barbadoes.		Mountains of Jamaica.	
Cubic inch. 22		42		43 $\frac{76}{100}$		19 $\frac{1}{2}$		48		58 $\frac{8}{100}$		63 $\frac{75}{100}$	
Perp. feet.	inch.	F.	I.	F.	I.	F.	I.	F.	I.	F.	I.	F.	I.
1	10	3	6	3	7 $\frac{76}{100}$	1	7 $\frac{1}{2}$	4	00	4	10 $\frac{8}{100}$	5	3 $\frac{75}{100}$

Taking the whole island throughout, sixty-five to seventy inches appear to be about the medium of rain that falls upon it in seasonable years.

In those districts where the woods are thick, lofty, and extensive, as in Portland, St. George, the interior parts of Clarendon, St. Elizabeth, and St. James, there is an almost daily drizzle. So along the whole midland range, the condensations must be very frequent, otherwise

wiſe thoſe vaſt rivers, which burſt forth at a prodigious elevation among them, could not be ſo plentifully ſupplied at thoſe times when the lowlands are parched with drought. Not that they owe the whole of their waters to the rain that falls here, for they undoubtedly derive the greateſt portion from the ocean, by percolation, or ſome other ſubterraneous proceſs of nature. But they receive a large increaſe from rains and dews. If theſe woody parts were cleared, the rains that might fall there would be more moderate, and the rivers would loſe a part of their bulk. This viſibly has been the caſe with reſpect to ſome others, which antiently ran much higher than they do at preſent; for being laid open to the ſun and wind, the quantity loſt by evaporation, together with what is diminiſhed for want of the uſual ſupply from dews and rains, their ſtreams muſt neceſſarily decreaſe to a certain degree. Yet as the condenſations proceeding from the height of ridges would ſtill continue, therefore theſe midland parts would ſtill have rains ſufficient, though probably but ſeldom ſo exceſſive as at preſent; and thus they may be ſaid to inherit a permanent fertility, which will inſure ſucceſs to their cultivators in the drieſt years ever likely to happen here.

Extraordinary falls may ſometimes happen, which may unuſually augment the annual calculation, for no two years are or can be exact; but an average of ſix or ſeven may turn out nearly ſo. One or two dry years are almoſt uniformly ſucceeded by one or two wet ones, ſo that what fails in one part of the average number, is perhaps made up pretty regularly in the other.

The rain which fell in this iſland during the hurricane (Oct. 20, 1744) was meaſured by an ingenious gentleman, and found to equal the general quantity that falls in England in a whole year.

So in the year 1754, the fall at Barbadoes was 87 $\frac{1}{100}$ cubic inches, equal to 7 feet 3 $\frac{1}{100}$ inches perpendicular. Whereas the medium of five years amounted there to no more than 64 $\frac{12}{100}$, equal to 5 feet 4 $\frac{12}{100}$ inches, far too little for its neceſſary ſupply.

Seven inches are allowed in moſt parts of Europe for evaporation; what remains is ſuppoſed to repleniſh the earth and vegetables with moiſture, and ſupply the waſte of ſprings and rivers. But as the evaporation muſt be in a far larger quantity in the Weſt-Indies than in Europe, ſo we muſt uſe ſome proportion in applying the rule to both places. The evaporation in Jamaica is conſtant all the year through; indeed, from ſome late diſcoveries, there are grounds to ſuſpect that it never ceaſes in the coldeſt countries, proofs having been given of an evaporation even from ice. However, in Jamaica it ſuffers no interruption from a defect of heat in the earth or atmoſphere.

Now

Now as ſeven inches are about one third of the fall in the lowlands of England, we may venture to ſubtract one third from what may generally be ſuppoſed to fall in Jamaica. Making a deduction then of 21 inches for evaporation, there remain 42 inches, or 3 ½ feet for the purpoſes beforementioned; nor will this be thought too much in a country where vegetation is ſo rapid and luxuriant, and which abounds with ſo great a multitude of rivers, rivulets, and ſprings. But we cannot allow much more for evaporation, conſidering that the earth here in moſt parts abſorbs the rain very greedily and copiouſly, and that in other parts the ſharp deſcent of hills and mountains diſcharges it into the rivers almoſt as faſt as it falls. If the iſland was entirely clear of its woods, perhaps a much leſs quantity of rain would fall than at preſent; but what is now ſupplied is not diſproportioned to the demand of its vaſt foreſts, which probably could not vegetate with leſs; and, being attractors, they are doubtleſs the cauſe of much more frequent ſhowers than would otherwiſe happen: for the ſcale of nature is nicely poiſed in this reſpect, and every part of the machinery correſponds, according to a moſt wonderful plan of harmony and fitneſs. We cannot but remark the goodneſs and wiſdom of the Deity, in thus admirably adjuſting his diſtributions. If a quantity of rain equal to 87 cubic inches, or even 63, ſhould annually fall in England, that country would be deluged; the fruits of the earth would periſh, and the farmer's toil be vain. The power of the ſun at that diſtance from the equator would be too feeble to exhale a ſufficient quantity of it. On the contrary, if ſo ſmall a portion as 21 inches only ſhould fall in the whole year at Jamaica or Barbadoes, this would ſcarcely be half enough for ſuſtaining or promoting vegetation in thoſe iſlands. After balancing the daily exhalation cauſed by the ſolar heat and conſtant breezes, the ground would be left parched, and every herb, plant, and root, would probably die, fountains and rivers be dried up, and the miſerable inhabitants be extinguiſhed by thirſt and famine.

The like wiſe proviſion and combination are likewiſe diſcernible in thoſe ſhowers which are ſo often ſeen deſcending on the mountainous parts of Jamaica, whilſt the lowlands receive not a drop. The ſteep acclivities of many of their ridges, like the roof of a houſe, throw off the water with a velocity not much inferior to that with which it falls upon them; hence the ſoil of ſuch parts would ſoon grow infertile, if it was not ſo frequently moiſtened with ſeaſonable ſprinklings. The lowlands, not permitting the rain that falls on them to run off ſo ſpeedily, retain their humectation much longer; the

water here ſinks deep, and the mountainous reſervoirs ſupply the ſprings and wells below with a liberal ſtore.

I have no meaſurement of the dews which fall in this iſland, but in many parts of it they are very conſiderable, inſomuch that in one of the mountainous diſtricts, where there is a ſcarcity of ſprings, the cattle are ſufficiently watered by the dew which overſpreads the herbage every morning; in general, in the mountains, it is ſo heavy that a perſon, walking among graſs, or through a cane-piece early in the morning, would ſoon be as wet as if he had gone through a river. It is always leaſt before heavy rains, and moſt copious in the cooler months of the year. Yet I obſerved once, in the month of January, that, although the weather had been very warm for the time of year, and dry, with ſtrong ſea-breezes night and day, which are not common in this month, the dews in the South lowlands were unuſually heavy. In Spaniſh Town they are much larger than in Kingſton, owing perhaps to the vicinity of the Rio Cobre. Hail is a phænomenon that has often been obſerved here. In 1757, a ſhower fell at Port Royal. The flakes were ſome of them large, but ſoon diſſolved. In the midland mountains it is more common; tranſient ſhowers happening almoſt every year, generally in Auguſt, or September. They fall from thunder-clouds, floating at a conſiderable height, and produce a ſudden great change to coolneſs in the air. The freezing point in this atmoſphere is probably not higher than about two miles and three eighths in the hotteſt ſeaſon of the year [*n*]; ſince, on the ſummit of the mountain Pichincha, in Peru, which is little more than two miles and an half in height, and under the line, the thermometer [*o*] was obſerved, on the 17th of Auguſt, to ſink four degrees below the freezing point, about ſix o'clock in the morning.

SECT. X.

Thermometrical Remarks.

Compariſon of Heat and Coolneſs, during one Year, between Charles Town, in South Carolina, and Spaniſh Town, in Jamaica.

Month.	Place.	Hotteſt.	Cooleſt.	Difference in a Month.	Medium.	Medium of 3 Months in Spaniſh Town.	Medium of ſix Months.
January,	Charles Town,	56	18	38	40		
	Spaniſh Town,	83	76	7	80		
February,	C. T.	79	32	47	57	78	
	S. T.	85	66	17	76		
March,	C. T.	80	41	39	64		
	S. T.	84	71	13	78		
April,	C. T.	87	49	38	68		75
	S. T.	86	67	19	77		
May,	C. T.	93	60	33	73	82	
	S. T.	87	77	10	82		
June,	C. T.	92	67	25	80		
	S. T.	88	84	4	86		

[*n*] About twelve thouſand five hundred feet.

[*o*] Of Reaumur's conſtruction.

July,

July,	C. T.	100	73	27	85	85	81
	S. T.	88	80	8	84		
August,	C. T.	96	64	32	80		
	S. T.	92	81	11	87		
September,	C. T.	84	64	20	75		
	S. T.	89	77	12	83		
October,	C. T.	83	53	30	70	78	
	S. T.	87	73	14	80		
November,	C. T.	74	44	30	60		
	S. T.	79	71	8	75		
December,	C. T.	76	24	52	53		
	S. T.	79	70	9	75		

Register for six Months, carefully taken in Spanish Town in a different Year subsequent to the above, and by different Instruments, but graduatad in the same Manner, or *per* Fahrenheit's Scale.

Month.	Highest.	Lowest.	Difference in one Month.	Medium.	Medium of three Months.			Medium of six Months.
July,	$86\frac{1}{2}$	$68\frac{1}{2}$	18 deg.	86	81	Highest in six Months,	$86\frac{1}{2}$	$74\frac{1}{4}$
August,	$85\frac{1}{2}$	$67\frac{1}{2}$	18	76				
September,	$85\frac{3}{4}$	$66\frac{1}{4}$	$19\frac{1}{2}$	76				
October,	$85\frac{1}{2}$	67	$18\frac{1}{2}$	$76\frac{1}{4}$	74	Lowest,	62	
November,	84	$63\frac{3}{4}$	$20\frac{1}{4}$	73				
December,	$81\frac{1}{2}$	62	$19\frac{1}{2}$	$71\frac{3}{4}$				

This table is found to differ from the preceding four degrees in the general medium; which I know not how to account for, except from the different diameter of the tubes made use of; so that it is impossible to decide which of the two measurements is the more to be depended upon. This point must remain to be adjusted by the result of future accurate observations. Mesne heat observed in Kingston, April, May, June, and July, eighty-one degrees.

Comparison of the Air's general Temperature in a whole Year at the Places under-mentioned (*per* the first Table).

	Greatest Heat.	Greatest Cold.	Difference in one Year.	Medium.
Charles Town,	100	18	82	59
Spanish Town,	92	66	26	79
Surinam,	90	72	18	81
Barbadoes, according to Hillary,	86	70	16	78

Thermometrical Range in Spanish Town, according to Observations in four Years, taken with the same Instruments as the first Table.

	Greatest Variation in one Month.	Smallest in one Month.	Highest Station in one Year.	Lowest in one Year.
Degrees,	18	1	92	66
Funchal, in Madeira, same time,			80	60

Temperature observed in different Places.

Place.	Latitude.			Year.	Month.	Degree.	Medium.	Spanish Town Medium.
Panama,	9°	00′	N.	1736	January.	71 a 79	75	80
Jamaica, in the country West of Spanish Town,	17	35	N.	1759	February.	65 a 81	73	76
Guiaquil,	2	11	S.	1636	April	74 a $82\frac{1}{2}$	$78\frac{1}{4}$	77
Quito,	0	30	S.	ditto	May	54 a 60	57	82
Bath, in England,	51	20	N.	1764	ditto	78.		

Quito,

Quito,	0	30	S.	1736	June	54 a 57	55½	86
London,	51	32	N.	1748	ditto 11th	85½		
Philadelphia.	40		N.	1750	ditto	100		
Paris,	48	15	N.	1735	July,	80		84
London,	51	32	N.	1748	ditto	85		
Ditto,	51	32	N.	1762	ditto	80		
Funchal, in Madeira,	32	33	N.	1760	ditto	72 a 75	73½	
Paris,	48	15	N.	1735	August	80½		87
Briſtol,	51	30	N.	1765	ditto	80		
London,	51	32	N.	ditto	ditto	79		
Ditto,	ditto		ditto	1773	ditto	86½		
Portſea, near Portſmouth,	50	40	N.	ditto	ditto	82		
St. Euſtatia,	17	25	N.	1760	ditto	82 a 84	83	
Curacoa,	12	25	N.	ditto	ditto	83 a 90	86½	
Ditto,	ditto			ditto	September	83 a 89	86	83
Ditto,	ditto			ditto	October	81 a 87	84	80
Ditto,	ditto			ditto	November	74 a 84	79	75
Carthagena,	10	25½	N.	1735	ditto	78½ a 81	79¾	
Curacoa,	12	26	N.	1760	December	77 a 80	73½	75
Porto-Bello,	9	35	N.	1763	ditto	72 a 76	74	
New-York,	40	24	N.		Summer Months	96 a 98		
Surat,	21	30	N.		ditto	105		
Senegal,	16		N.	1763	December	93		
Sierra Leon,	7		N.	ditto	ditto	98		

The foregoing table having been founded upon the obſervations of different perſons, taken at different times, I am incapable of vouching for the accuracy of them. But, ſuppoſing them tolerably faithful, I think it will appear, that the Aſiatic and African climates are, in general, hotter than the American; and that, of the American climates, thoſe which lie under and near the Line are, in general, very temperate. The different degrees of heat and cold in different places, under the ſame meridian, depend chiefly upon the accidents of ſituation, with regard to mountains, valleys, and ſoil. Where there are vaſt high mountains, whoſe ſummits are all the year covered with ſnow, as thoſe under the Line in the South-American continent, the winds which come over them muſt neceſſarily chill the air of all the adjacent country. In other reſpects, and under different meridians, the diverſity has been ſuppoſed to ariſe from the different angles under which the ſun's rays ſtrike upon the ſurface of the earth, and the longer or ſhorter continuance of their action: and, from this conſideration, Dr. Halley has grounded a very conſiſtent theory; from whence he deduces two poſitions, firſt, that the Tropical ſun, under the Equinoctial, has, of all others, the leaſt force; ſecondly, that, under the Pole, it is greater than any other heat whatſoever, being to that of the Equinoctial, as five to four.

But this may appear clearer from one column of his table, which I fix upon, as it includes the hotteſt part of the year felt in the Weſt-Indies, viz. June to September.

Lat.

Lat. N.	Sun in ♋
0	18.341
10	20.290
20	21.737
30	22.651
40	23.048
50	22.991
60	22.773
70	23.543
80	24.673
90	25.055

From this table we find the heat of the Northern part of Greenland, which lies in lat. 80, compared with the heat on the Northern part of Hiſpaniola, which lies in lat. 20, is as 24.673, to 21.737, on ſome days when the ſun is moving through this quarter of the Ecliptic; for it is the length of time that the heat is applied to any particular country, as well as the degree of it, that determines the quantity of heat communicated to it. Where, therefore, the days and nights are of pretty equal length, the ſun's heat cannot exert itſelf ſo powerfully, as where there is no night, and conſequently no interruption to its action for many months; and the heat, which ariſes ſimply from the preſence of the ſun, is, from Halley's theory, reducible to this problem, viz. that the ſun's heat, for any ſmall portion of time, is as a rectangle, contained under the ſine of the angle of incidence of the rays producing heat at that time.

For theſe complicated reaſons, although, when the ſun is vertical, and darts a perpendicular ray, it is ſuppoſed to ſtrike with greateſt force; yet, in thoſe countries where it is vertical twice a year, in paſſing to and from the Tropic of Cancer, the greateſt heat is not during the inſtant of its verticalities, but ſome weeks after, when it is returning from one Tropic to the other, and its rays oblique.

A Dutch captain aſſerted, that he had been quite under the North Pole, where he found the climate as temperate as at Amſterdam, and the ſea quite open. This aſſertion has been deemed not improbable, conſidering that the ſun's rays, though falling very obliquely in that latitude, muſt nevertheleſs produce a very great degree of heat, from his long coutinuance above the horizon; ſo, notwithſtanding the obliquity of the rays, it is found, that in the middle of ſummer the thermometer ſometimes riſes higher in Sweden, and at Peterſburgh, than under the Line.

But, for the better compariſon of climates, and the degrees of heat, under different or under parallel latitudes, it is greatly to be wiſhed, that

that we were furniſhed with more regiſters, and thoſe formed with more regularity. To be correctly accurate is ſcarcely to be expected, ſince thermometers, graduated alike, often vary much from each other in their indications. But what chiefly impedes the enquiry is, that experiments, made in different parts of the world, are by inſtruments of very different graduation. If one ſtandard thermometer was univerſally in uſe, a compariſon of remarks or regiſters, formed in different parts of the globe, or in the ſame country, would be very practicable, and lead to a knowledge of their reſpective temperatures with far more preciſion.

The thermometers I made uſe of were a ſpirit and a mercurial, both of them graduated according to Fahrenheit. Yet, upon compariſon, the former always roſe two degrees higher, excepting in one inſtance, in April 1762.

The weather, having been ſultry and ſhowery for ſome time, became on a ſudden very cool, and cleared up; when, to my great ſurprize, I obſerved the mercurial thermometer had riſen two degrees higher than the other. I could only account for this, by ſuppoſing, that, as the parts of mercury are more ſuſceptible of immediate impreſſion from changes of the atmoſphere than thoſe of ſpirit, they are likewiſe ſooner affected with any ſudden rarefaction or denſity. The elaſticity of the air in the upper part of the tube has been found ſometimes to overcome the expanſion of the ſpirit; and often the air, when very hot, is ſaid to make the ſpirit riſe diſproportionately high in the tube, when what is contained in the ball is not equally affected.

The ball of my ſpirit thermometer was covered with a mahogany cap; upon taking off which, in the month of February, the liquor ſunk immediately two degrees. I left it uncovered a whole night; and, early in the morning, after ſuffering the night air to blow upon it freely, through a window left open for that purpoſe, I perceived it fallen ſix degrees lower than had been uſual when the cap was on.

I obſerved frequently, that, the houſe being ſhut up all night, upon viewing the thermometer in the morning before the ſun was any height above the horizon, the air within doors was warmer by five or ſix degrees than the air abroad.

Similar variations have been remarked in London.

1748, June 11, the thermometer out of doors, in a ſhaded air, was at —— —— —— —— —— 83½

Within doors, at —— —— —— 68

a difference of fifteen degrees and an half; which is almoſt incredible.

At nine in the evening, without doors, —— —— 74

	Within, —— —— —— ——	71
July 23,	Without doors, at noon, —— ——	84
	Within, at 1 P. M. —— —— ——	85

On the 11th of June the thermometer within doors, at nine in the evening, was higher than at noon; though the thermometer out of doors fell conſiderably. The reaſon aſſigned for this was, that the air without was ſtill warmer than the air within, and continued to communicate its heat to the internal air. So Mr. Rouppe, at ſea, in the month of July, 1760, in latitude 18. N., found the open air at night ſix degrees cooler than the air between decks. If thermometers, uſed in Jamaica, were ſuſpended in a ſhady place out of doors, where they would be more affected by changes in the atmoſphere, the tables of heat and coolneſs for that iſland might be far more accurate. The air within doors there, eſpecially in the towns, is in general much hotter than the air of any ſhaded place without. Hence the degree of heat may be erroneouſly ſuppoſed many degrees higher than what it really is. On the other hand, in England, where the houſes are much loftier, the walls more maſſy, and many apartments impervious to the ſun, and where its rays never enter into rooms of a Northern expoſure; the air within doors, on the hotteſt days, is much cooler than without; and obſervations, taken there by a thermometer ſuſpended always within doors, will conſequently give a fallacious regiſter of the heat of ſummer air, and often repreſent it to be much leſs than it really is, as the example above cited moſt clearly demonſtrates. In making obſervations in Jamaica, (where the inhabitants are *amphiſcii)* regard ſhould be had to the ſun's ſtation, whether in the Northern or Southern Tropic. When he is in the former, the inſtrument ſhould be placed in a room not inhabited, having a South aſpect, the window left open; and due care taken that the air may freely enter, without any reflected gleam of ſun-ſhine, or heat from any wall or building oppoſite, or too ſtrong a light. When he paſſes to the Southern Tropic, it may be moved to the Northern ſide of the houſe, with the like precautions.

The mercurial thermometers, I have reaſon to believe, are the moſt to be depended on; and they have this further advantage, that the ball is generally uncovered, ſo that every variation of the atmoſphere immediately affects the whole maſs. Perhaps, two inſtruments, or

even three, placed ſide by ſide, would enable the obſerver to be as exact as poſſible, by noting their deviations, and taking the *medium* of all. Fahrenheit's conſtruction, from its ſimplicity, is more generally approved of, and perhaps more uſeful, than the other ſcales. But, whatever inſtrument is thought moſt eligible, the graduation ought always to be noticed and prefixed to the diary. A want of this has made many regiſters unſerviceable, in reſpect to the advantage that might be hoped from a compariſon of climates; and dependent on this, the analogy of ſymptoms and diſeaſes correſpondent to the various changes of the atmoſphere in different countries. There are no leſs than 16 or more of theſe inſtruments of various inventions; ſo that a perſon, ignorant of their graduation, or the method of comparing them one with another, would find himſelf greatly puzzled in the attempt. In 1740, Dr. *George Martine* publiſhed ſome very intelligent eſſays on the ſubject of Thermometers, and added a plate, exhibiting the graduation of 15 of theſe inſtruments in a comparative view; this *Deſaguliers* has given (*p.* 364, *vol.* II.) and it will be found extremely uſeful to experimentors.

SECT XI.

BAROMETER.

According to four years obſervations at *Spaniſh Town.*

	In one Day Inch.–10ths.		One Year Inch.–10ths.		Jamaica. Inch.–10ths.		In England, Inch.–10ths.	
Greateſt fall on the approach of a guſt or gale of wind from S.W. attended with rain,	1	8						
General ſubſidence before / Aſcent after } ſlight ſhowers,	0	3						
The ſame before and after violent rains,	0	6						
Whole range,			3	5	3	5	2	8
General ſtation,					29	9	29	4
Greateſt aſcent,					31	7	30	8
Loweſt fall,					28	2	28	0

Doctor Halley obſerves, that near the Equinoctial there is little or no variation in the height of the barometer. He accounts for it thus; "that "in theſe places there is is always an eaſy gale of wind blowing nearly "from the ſame point; ſo that, there being no contrary current of air "to exhauſt or accumulate it, the atmoſphere continues much in the ſame "ſtate. However, upon hurricanes, the mercury has ſubſided very low; "but this happens only once in two or three years, and it ſoon recovers "its ſettled ſtate of about 29 ½ inches, as at Barbadoes." At this iſland (laſt

(laſt mentioned) the mercury is rarely known to riſe above 30 inches, and its ſettled ſtate is about 29 ½. Jamaica, lying nearer to the North American continent, and being a much larger iſland, is more ſubject to variable winds; and the Norths, which always raiſe the mercury higheſt, are far ſtronger here. The mercury is therefore not ſo ſtationary here as in the Caribbee iſlands, which lie near the Equinoctial. The atmoſphere is heavier in its preſſure; and would be more ſalubrious, for this reaſon, to European conſtitutions, if the woods were opened. We may aſcribe to this preſſure of the air, in great meaſure, that lively flow of ſpirits which moſt of the inhabitants enjoy, which may naturally happen whereever the mercury's ſtation is uſually near about 30 inches. The variations here are minute, as Doctor Halley has remarked, except upon the approach of ſtormy weather; and hence the preſſure of the atmoſphere on the body is generally uniform, and equable, from day to day, or, at leaſt, with very little ſenſible diſparity.

Yet no contemptible advantage may be derived from this inſtrument even here; where, although the mercurial motions are ſmall, yet they afford certain indications of change in the weather likely to happen in 24 hours. A knowledge therefore deducible from ſuch a prognoſtic is not without its uſe to the planter, in directing his operations in the field, with regard to planting or ſowing.

Science too may be benefited from its application in a different way.

An accurate meaſurement ſeems to be wanted of the height of the different mountains, particularly the various Blue Mountain ridges.

In taking the height of a mountain with the portable barometer, the experimentor is firſt to remark, at what degree the quickſilver ſtands at the level of the ſea, or (that being too diſtant) at the foot.

Having aſcended to the ſummit, or as high as he chuſes to go, he is then to obſerve how many inches, and parts of inches, the mercury has ſubſided.

From variety of experiments it has been ſuppoſed, that the mercury ſubſides one tenth of an inch at every ninety feet of aſcent; but it has likewiſe been proved, that, from the different degrees of denſity in the air, the higher we aſcend, if the mercury falls one tenth of an inch at the firſt ninety feet of riſe, it will not fall the next tenth, till the barometer is carried up ninety-three feet higher; and ſo the height of every column of air, of the weight of one tenth of an inch of mercury, will vary according to the height of its ſituation in the atmoſphere, each being about

three feet longer than the laſt. If, therefore, for an height of 1,035 feet, the mercury falls one inch, the different ſtages of its fall, in proceeding upwards towards the mountain top, will be marked as follows:

N°. of feet aſcent.	Fall of the Mercury, tenths of 1 inch.
90	1
93	1
96	1
99	1
102	1
105	1
108	1
111	1
114	1
117	1
1035	$\frac{10}{10}$ths or 1 inch

It is from ſuch kind of obſervations that doctor Halley, and others, framed tables, to ſhew what would be the heights of the mercury in the tube, and the denſity of the air, at different heights from the earth.

The following two are abridged from Dr. Halley's, as it would be unneceſſary, for the purpoſe of meaſuring mountains, to carry the calculation further than their greateſt known height.

A table ſhewing the altitudes of a mountain to given heights of the mercury.

Inches.	Feet.
30	0
29	915
28	1862
27	2844
26	3863
25	4922
20	10947
15	18715

A table, ſhewing the height of the mercury at giving altitudes of a mountain.

	Feet.	Inches.	100th Parts of an Inch.
	0	30	0
	1000	28	91
	2000	27	86
	3000	26	85
	4000	25	87
	5000	24	93
Mile 1 or	5280	24	67
2	10560	20	29
3	15840	16	68
[b] 4	21120	13	72

Theſe tables, it is ſaid, do not perfectly agree with phænomena, yet they are thought to be tolerably acurate; at leaſt ſufficiently ſo for ſuch menſurations where exactneſs to a few fathoms is not required; and, until better tables are conſtructed, theſe may ſerve to render the work practicable with leſs trouble and difficulty [c].

The

[b] Chimbo raco, one of the Cordilleras, is nearly four miles above the level of the ſea.

[c] The ingenious Mr. *Brydone*, who has lately favoured the public with a very entertaining account of mount *Ætna*, obſerves; that *Picart* (the moſt exact of all the French academicians) allows

The general theory of the operation is built on this principle; "That "the column of air upon high mountains is much ſhorter; and, conſe- "quently, lighter than that of the plains."

Suppoſing a hill, ſuch as Snowdon Hill, where the mercury ſettles at four inches below the mean altitude at the level of the ſea, and whoſe height is about 3,720 feet; the column of air, at ſuch an height, and of one inch diameter, it is ſuppoſed, would be found lighter by 14,320 grains, or 29 oz. 6 dwt. 3 ſcrup. than below.

Hence it follows, that, in ſuch places, the blood, having a load taken from it, will ſwell and diſtend the veſſels; and, at leaſt, occaſion a ſhortneſs of breath.

The like dilatation happens to bottled liquors carried to that height; the air contained in the liquor rarefies to the ſame pitch with the external air, cracks the bottle, and makes it fly into a thouſand pieces.

From the like cauſe, perhaps, ſudden changes of weather in this climate, from very dry and hot to very wet, and again to hot and dry, produce a variety of diſorders in the human body.

In the year 1761, after very heavy rains, for ſeven or eight days in May, ſucceeding dry ſultry weather, and followed by a return of dry hot weather, a bad ſpecies of fever appeared in Kingſton; the firſt ſymptoms of which were a ſudden vertigo, and deprivation of ſight; inſtant bleeding was found moſt ſerviceable; and, if neglected, the diſorder

lows 14 toiſes, or about 90 Engliſh feet, to every fall of 1 line of mercury; but he thinks, the allowance uſually made, particularly in great elevations, where the air is exceedingly thin and light, is much too ſmall. His conjecture is probably juſt: and if ſo, the Engliſh menſuration, given in the former tables, may be found more exact than any formed by Caſſini, and other foreigners. The following are the ſtations of the thermometer and barometer obſerved by Mr. Brydone in his aſcent:

Height of Fahrenheit's Thermometer.	Deg.	In.	lin.	Height of Barometer.
At *Catanea*, mid-day, May 26	76	29	8½	Sea-ſide at *Catanea*.
Ditto 5 in the morning 27	72	27	8	*Piedmonte*, in the firſt region of Ætna.
Nicoloſi, mid-day	73	27	1½	*Nicoloſi*, in the ſame region.
Spelonca del Capriole, where there was ſnow (7 at night),	61	26	5½	*Coſtagno de Cento Cavalli*, ſecond region.
In the ſame cave, half paſt 11 at night,	52	24	2	*Spelonca del Capriole*, ſame.
Torre del Philoſopho, 3 in the morning,	34½	20	5	*Torre del Philoſopho*, third region.
Foot of the crater,	33	20	4½	Foot of the crater.
About half way up the crater,	29	19	6½	Within about 300 yards of the ſummit.
On the ſummit, a little before ſun-riſe,	27	19	4	By ſuppoſition at the ſummit of the mountain.

According to this regiſter, and the former tables, the height of Ætna, above the ſea's level, ſhould be about 11,630 feet; Mr. Brydone ſuppoſes it not to exceed 12000. But, at the former computation, it is upwards of 4000 feet higher, than the higheſt part of our Blue Mountain Ridge in Jamaica. The thermometer being at 33, or 1 degree above the freezing point, when the barometer was at 20 inches 4½ lines; we may ſuppoſe the freezing pointt to have been at the elevation of near two miles, or about 10,368 feet, in the month of May.

generally

generally proved mortal. The barometer, after being too low during the fall of rain, rose to 31 $\frac{6}{10}$. In this case the column of air became suddenly light, and as suddenly became heavy again; the quickness of which transition, doubtless, caused very extraordinary commotions in the blood and juices; for, in rainy weather, the atmosphere near the earth is lighter than at other times; and, in fair or clear windy weather, it is heaviest.

The barometer therefore may have its use, in leading us to prepare, or to account for, distempers of the anomalous class, as well as in directing our choice of situation for dwelling.

They who live in the thin air of high mountains are generally remarked to be persons of quick, lively parts, their blood and spirits of a free loose texture, and their vessels enlarged, so that the brain is supplied with all that is necessary for performing its functions well. Besides, the coolness and elasticity of the air strengthens their fibres; and such places are usually either rocky, or well drained, and free from vapours. But at those heights, where the vapours constantly brood and settle, their fibres, instead of being corroborated, would probably grow flabby; and such perpetual moisture of the air might be productive of dropsical complaints; hence appears the reason, why persons labouring under an incipient dropsy, contracted by residing in a vapourish air, have, upon their removal to some of the dry, sandy *cayes*, which lie off the South coast of this island, recovered very surprisingly and soon.

In Doctor Trapham's time the dropsy was so endemic in Jamaica, that it went by the name of the *country disease*; but as this disorder is not at present very frequent, we may reasonably suppose (among other causes of its decline) that the air of the country is much less moist than formerly it was. From the foregoing observations we may infer,

1. That persons who pass suddenly from a low situation into the air of high mountains, ought (on coming to reside there) to lose a little blood.

2. That such parts or lines of the mountainous range, at which fogs and vapours daily settle, impregnating the air with continual moisture, are the least fit for habitation.

3. That the healthier elevated spots are either such as are above or below this line; of the latter sort are those the island mostly abounds with,

with, *viz.* the lower rocky hills, and mountains, which are not raiſed ſufficiently to be inveloped with ſuch hovering miſts.

Nature, as it were, points out theſe ſpots for reſidence, by their multitude; and further recommends them, by the variety of aromatic plants with which they abound.

The richeſt vales are ſeen ſurrounded with rocky eminencies, for the moſt part unadapted to *profitable* culture, though peculiarly favourable to health.

Thoſe parts of ſavannah land alſo, which have a ſandy or gravelly ſoil, and are ſo much elevated as to have no ſtagnant water lodging near them, nor ſubject to be overflown, and are at ſuch diſtance from hills as to receive free currents of wind, are remarkably healthful.

I have conſequently obſerved, that they who have been ſo prudent, or fortunate, to fix their conſtant habitation on ſuch ſpots, were always the moſt healthy and robuſt; enjoyed lively ſpirits, keen appetites, and lived to a good old age, exempted from thoſe many infirmities to which the inhabitants of cloſe towns, or of low, rich, damp, and badly ventilated places, are perpetually liable.

Before I quit the ſubject, it may ſuggeſt ſome curious experiments to obſerve, that, as all bodies are ſubject to expand with heat, and be condenſed with cold, it follows, that the *ſpecific gravities* of bodies cannot be the ſame here as in Northern climates; and, of courſe, that a meaſure of any fluid here does not contain ſo much of that fluid, as the ſame meaſure would contain in England.

This circumſtance would cauſe a remarkable effect on the ſhipping which load at this iſland, or other parts of the Weſt Indies; and they would ſink much lower here in the water, than in the Northern latitudes, if Providence had not furniſhed the ocean with a larger portion of ſalt; and, hence it has been found, to increaſe its ſpecific gravity the nearer we approach to the Line, this augmentation of weight commencing about the 30th degree of North latitude [*d*].

The natural effects produced on other bodies are, that the water of rivers and ſprings is lighter here, and, *cæteris paribus*, more wholeſome than in England; and that ſpirits, and all other bodies, are propor-

[*d*] Lowthorp's Abridgem. Vol. II. p. 297.

tionably

tionably expanded, and occupy a larger ſpace. This piece of philo'o-phy I remember to have ſeen proved by ſome Negroes, who had obſerved, that when they went with a caſk of rum in a waggon, to market, in the heat of the day, and agitated it as much as poſſible, by driving the carriage over the roughest parts of the road, the caſk, upon delivery to the wharfinger, would appear quite full up to the bunghole, though they had ſtolen ſome bottles-full out of it by the way.

The effect likewiſe upon mercury deſerves to be noted; becauſe it materially concerns barometric obſervations; for mercury will expand with heat; and ſince, by this expanſion, it muſt extend the column upwards in the barometric tube, it is therefore probable, that an extraordinary riſe of it in very hot dry weather is ſometimes owing to this cauſe, and not to any encreaſed preſſure or gravity of the atmoſphere.

Hence it appears, that ſome uncertainty muſt inevitably attend the motions of this inſtrument, in all hot countries; for which reaſon, upon every unuſual riſe of the mercury, the ſtate of the air, at that time, in reſpect to heat and dryneſs, ought carefully to be noted [*e*].

A regard muſt alſo be had to the choice of the inſtrument; for the tubes of the ordinary, cheap barometers contain ſo ſmall a quantity of mercury in them, that they are good for nothing: in theſe ſmall tubes the *attraction of coheſion* makes the mercury ſtick to the ſides of the glaſs, ſo as not to riſe and fall regularly, according to the variations in the atmoſphere, as may be ſeen on comparing them with the barometers of larger and better ſtructure.

Thermometers likewiſe are not free from irregularities, occaſioned by the expanſion of their liquor, which, conſequently, may often indicate a greater degree of heat than is actually preſent in the air.

The pendulums of clocks and watches, we find, are lengthened from the ſame cauſe in this climate, ſo as ſometimes to require raiſing very high; and hence, till they are rectified, they muſt continually loſe their time. They are alſo liable to alter their vibrations from the figure of

[*e*] An ingenious gentleman obſerved here, that although there was but little or no variation in the riſe and fall of the mercury, from the ſtate of the weather, there was a conſiderable one in the height of the mercury, in the day and night; for it roſe every night, and ſunk next day, ſometimes one diviſion, and at other times only a portion of one. A change which it is difficult to account for, unleſs by ſuppoſing, that the atmoſphere being denſer at night occaſioned a greater preſſure, than in its more heated and rareſied ſtate during the day time, even allowing for the utmoſt expanſion by the heat.

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the earth, which is ſuppoſed 31 miles higher at the Æquator, than at the Poles. Hence, in traveling towards the line, it is found that clocks with long pendulums (excluſive of what is allowed for rarefaction by heat) go too ſlow, as Dr. Halley, Mr. Richer, and other aſtronomers, obſerved, who were obliged to ſhorten the pendulums of their clocks before they could make them keep true time; according to Mr. Richer's experiments, the pendulum, to vibrate ſeconds *under* the Æquator, muſt be about one-tenth of an inch ſhorter than in the Northern latitudes; without which, the clock which it regulates, will loſe between two and three minutes a day. The difference cauſed by the expanſion or lengthening the pendulum by heat, has ſometimes amounted to about the fortieth part of an inch; which in many vibrations will make a conſiderable alteration in time. It is neceſſary, therefore, that both the clocks and watches, intended for uſe in this climate, ſhould have their pendulums duly adjuſted to this variation, and the curvature of the earth; after which, they may be regulated tolerably well by a thermometer, remarking the different ſtates of heat and coolneſs in the air, at which they appear to vibrate too ſlow, or too faſt.

The experiments made for diſcovering the expanſion of fluids, were tried by comparing the abſolute weight of a cubic inch, of ſeveral ſorts of bodies, in ſummer and winter in Europe, of which the following table gives the reſult in regard to a few, which ſhews the difference to be conſiderable; and we may reaſonably preſume, that the ſame bodies are rarely in the Weſt Indies *leſs* rarefied, than they appear to have been in Europe by the ſummer's trial, and that in the hotter months they are much more ſo.

	Summer.			Winter.		
	oz.	dr.	gr.	oz.	dr.	gr.
Brandy,	0	4	32	0	4	42
Diſtilled Water,	0	5	8	0	5	11
Spring Water,	0	5	11	0	5	14
River Water,	0	5	10	0	5	13
Spirit of Nitre,	0	6	24	0	6	44
Oil of Vitriol,	0	7	59	0	7	71
Milk,	0	5	20	0	5	25
Mercury,	7	1	66	7	2	14

Proof ſpirit of any kind weighs ſeven pounds twelve ounces *per* gallon.

But it has been found, that a cubic inch of good brandy is 10 grains heavier in winter than in ſummer, as appears by the table; and that 32 gallons of ſpirits in winter will make 33 in ſummer. Suppoſing, therefore, a puncheon of proof rum, containing 110 gallons by meaſurement, to be bought in Jamaica, and carried to England, and there ſold in the winter, it will have ſhrunk, by contraction occaſioned by difference of climate, 3 gallons, and about ¾ of a pint. If the prime coſt was at 2*s.* 6*d.* *per* gallon currency, the loſs to the buyer is 7*s.* 7¾*d.*; and on 10 puncheons, 3*l.* 16*s.* 5½*d.*; and on 100 puncheons, 38*l.* 4*s.* 7*d.* Hence it has been rightly judged more profitable, to buy ſpirits in winter, or cold weather, and ſell them in hot.

	Troy weight.		Avoirdup.	
	p. wt.	gr.	oz.	dr.
The cubic inch of proof ſpirit, according to the Engliſh hydroſtatical table, weighs —— ——	9	19.73	0	8.62

SECT. XII.

SEA-WATER, &c.

The ſea-water, being more ſaturated with ſalt in this climate than in the Northern Zones, exhales leſs, and loſes leſs of its weight. Hence, not only the atmoſphere reſting on it is leſs foggy, and therefore leſs incommodious to the inhabitants bordering upon the coaſts, but it is thereby more effectually preſerved from putrefying, and loading the air with noxious *effluvia*, which, combined with the heat, would become highly peſtilential.

The water of the rivers here, and frequently that of the ſea, is in the early part of the morning warm to the feel, and cool in the evening. The truth is, the ſenſes are deceived in this experiment, and it happens from the different ſtate of the atmoſphere at thoſe times. Early in the morning the air is cooler than the water, the warmth which the latter has acquired in the courſe of the day, being partly retained by means of the ſand or mud at the bottom; but in the evening, the atmoſphere having been heated to a greater degree than the water, and not yet much diveſted of its warmth, either by the ſun's abſence, or the land wind, is actually warmer than the water. In the morning, therefore, the rivers are frequently ſeen to exhale a ſlight miſt or ſteam, eſpecially when the air is more than uſually cool.

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The water of the brackiſh rivers on the coaſt yields about 1 drachm of ſea ſalt from 2 quarts, or 1 ounce from 4 gallons.

I have no meaſurement of the quantity contained in a gallon of our ſea-water; but it would be curious to try the experiment in the hotter months, and compare with that of the Britiſh Channel, whoſe produce has been computed at 5 ½ ounces *per* gallon.

SECT. XIII.

Tides, Currents, and Magnetic Variations.

The centrifugal force of the earth, ariſing from its diurnal motion, is computed by Sir Iſaac Newton, to raiſe the water at the Æquator to the height of 85,472 feet above the water at the Poles; and the united force of the ſun and moon raiſes the ocean 10½ feet; conſequently the attraction or gravitation muſt be greateſt in this part, from the greater proximity of theſe two bodies. If the moon were conſtituted at the Æquinoctial, there would be always high water under that circle, and low water at the Poles; and, therefore, the nearer the moon approaches to the Æquinoctial, the leſs is the agitation of ocean in that part of the globe. That the tides may have their full motion, the ocean in which they are produced ought to be extended, from Eaſt to Weſt, a quarter of the great circle of the earth at leaſt; becauſe the places where the moon raiſes moſt, or moſt depreſſes the water, are at that diſtance from one another; hence it appears, that it is only in the great oceans, that ſuch tides can be produced; and why in the large Pacific ocean they exceed thoſe in the Atlantic ocean; why the tides are not ſo great in the Torrid Zone, where the ocean is narrowed, as in the Temperate Zones on either ſide; and why they are ſo ſmall at iſlands that are far diſtant from continental ſhores. As the tides paſs over ſhoals, and run through ſtraits and bays of the ſea, their motion becomes various, and their height depends on ſo many circumſtances, that it is impoſſible they ſhould be regular.

Thus the tide at Bermudas ſets variouſly, and does not flow above 5 feet; and that only when the ſun is in the Southern Tropic; at other times, not above 3 feet.

At Jamaica, it rarely flows (according to my obſervation) above 18 inches or 2 feet at moſt; though the violence of ſea breezes, and Norths,

will ſometimes create a ſmall difference; and in rivers which fall into deep bays on the South ſide, the flux and reflux rarely exceed one foot. The influence of the before-mentioned bodies upon the Tropical ſeas, is doubtleſs one cauſe of thoſe prodigious currents obſerved among all theſe iſlands ſituated within them. Theſe currents are ſaid to be variable, as well in their times of ſetting in, as their direction; however, a more certain knowledge of their motions and doctrine, which can only be the reſult of very careful and regular obſervation, ſeems deſireable, for the ſake of navigation. The currents on the South coaſt of Jamaica uſually ſet during the reign of the regular trade wind, to the N. W., into the gulph of Mexico, and circulate to the N. through the Florida channel; while the Norths prevail, they tend rather S. Weſterly.

The continual torrent which ſweeps through the gulph of Florida, and along the North American coaſt, with ſuch ſtrength and rapidity, as even to have been remarked ſo high as the iſle Sable, in North latitude 44° 30′, is attributed to a certain permanent cauſe; and, if the theory be right, can ſeldom vary much in its direction from the influence of winds, or, at leaſt, only to ſome little depth beneath the ſurface.

Caſting our eyes over the map of this quarter of the globe, we obſerve a great multitude of iſlands, rocks, and cayes, which form a ſemicircular barrier, from the N. W. extremity of the Bahamas, adjacent to North America, quite to the iſland of Trinidado, nigh to the Southern part of the continent; ranging through an extent of fifteen degrees of latitude. The paſſage of the water from the great Atlantic ocean into the Carribbean ſea, and Bay of Mexico, is, therefore, conſiderably obſtructed; and being inceſſantly urged on to the Weſtward, and N. W., during great part of the year, by the trade, or S. E. and Eaſterly winds, and by the preſſure or gravitation of its own vaſt body near the Æquator, it ought to cauſe ſtrong currents in the like direction between ſeveral of the windward Antilles, or Carribbee iſlands; in a ſimilar manner as the ſtream of a river, whoſe motion is accelerated between the arches of a bridge. This current muſt diminiſh in violence, when the water finds ample room to expand, and diffuſe itſelf freely on every ſide, as it does after its arrival in the Carribbean ſea; but it is again impeded, at its entrance into the Bay of Mexico, by the two Capes of St. Antonio on the S. W. end of Cuba, and Catoche on the oppoſite continent; which project to meet each other, like two moles or lunettes at the mouth of a ſea port; and, approaching

proaching ſo near as about fifty leagues, neceſſarily contract the paſſage, and occaſion a very ſwift current to the Weſtward through this ſtrait. It is accordingly obſerved, that a prodigious current ſets, with a conſtant ſtrong ſtream to the Weſtward, upon all the Southern parts of the Mexican Bay, ſo far as the Strand of Vera Cruz; and, being then deflected by the curved ſhape of the land, veers round to the Eaſtward along the oppoſite ſhore, endeavouring to paſs out again where it meets with leaſt reſiſtance; and making its progreſs by the W. end of Cuba to the Northward, till it diſembogues by the Florida gulph into the Atlantic ocean; the ſtrong barracade of the Bahama iſles and ſhoals, together with a counter current proceeding from the Bahama ſtrait, ſeeming to guide its efflux that way. The natural courſe of the water, on the Eaſt Florida coaſt, ſhould be ſuppoſed from Weſt to Eaſt; but the current here has been obſerved to be often irregular. When it runs with greateſt impetuoſity, the Bahama iſles and ſhoals againſt which it ſets, may poſſibly occaſion an eddy; and the reverberated water may turn back again along the Florida ſhore to the Weſtward, or S. W., towards the Martyres. At other times, the rivers, which diſcharge in great abundance from the lakes and ſwamps in that country, may produce a like effect. Mariners have remarked, that within the gulph, the current often ſets Weſterly, or S. W., on the Florida ſide, along ſhore, and N. E. and N. off the Cuba and Bahama ſides; and, in order to avoid thoſe dangerous reefs which environ the Florida coaſt, they endeavour to get well in with the land about the Havannah; make an allowance of four or five points in the compaſs for the current; and ſteer, as near as poſſible, for the Bahama ſide. The regular trade blows at Cuba from March till October or November; during this ſpace, the flux of water continues with little variation, from the E. and S. E. into the Bay of Mexico, and out again, to the Northward through the Florida gulph. In the other months, the wind often blows violently from the N., or N. W., into the Northern mouth of the gulph; and, meeting the current in oppoſition, raiſes a chopping, dangerous ſea. When this happens, the efflux of the water might, in ſome degree, (it would be imagined) be retarded; at leaſt, to a certain depth, although below that depth it might be unaffected, and perſiſt to run in a direction contrary to the wind; but there is reaſon for believing, that the current runs with unuſual velocity at ſuch times, aided by the drift of water from the Florida ſide; where it is remarked, that Northerly winds almoſt.

almoſt empty all the bays. The ſame winds may act alſo upon the Bay of Mexico, and in ſome meaſure obſtruct the regular influx between Cape Antonio and Cape Catoche; whence it may happen, that, a leſs ſupply than at other times flowing into the gulph, the channel there may be lowered, and conſequently cauſe a drain from the Florida bays to repleniſh it [*f*].

The difficulty of ſtemming this current at any ſeaſon of the year, is the reaſon, that all ſhips bound for Jamaica, as well from the Northern colonies, as from Europe, run into the latitude of 17°, or 17° 30′ North, to fall in with the trade wind, which ſets with the current, and favours their paſſage. It is no leſs inconvenient for them to attempt a courſe to the iſland by the windward paſſage, though ſome few French, and other light ſhips, have gone to Hiſpaniola this way, between the Caicoes, or Turk's Iſlands; for the current almoſt uniformly ſets to Northward through that paſſage, and is therefore, in general, favourable only to veſſels homeward bound from Jamaica to Europe, or North America. The ſhips which load towards the Weſtern end of Jamaica, find great delay when they are deep in the water, and homeward bound, in beating up againſt both the trade wind and current; and, for the moſt part, bear away for the gulph, having then both of them in their favour. The ſhips, therefore, which load at the Eaſtern parts, have an advantage in this reſpect; for after ſtretching acroſs to the N. W. land of Hiſpaniola, they haul through the windward paſſage, with a current to help them, and, by this means, ſhorten their navigation conſiderably. The larger, or main currents, ſeem to be pretty regular; but the variation in the ſmaller ones often diſconcerts the experteſt pilots, and requires a courſe of attentive obſervation, to determine the probable cauſes of their ſhifting at different times of the year. Whether owing to the poſition of the globe, to the tides, the ſhifting of the trade wind, the angle of incidence at which theſe currents ſtrike the different head lands, iſlands, and coaſts, an accidental drain, or an accumulation of water at ſome ſmall diſtance, or other cauſe; and in what manner the direction theſe currents take may uſually correſpond with the reſpective cauſe.

[*f*] It has been obſerved, that the tide runs unuſually high upon the South coaſt of Jamaica, when the Norths blow with greateſt violence; this is undoubtedly occaſioned by the obſtruction then given to the current ſetting towards the Bay of Mexico, by which means, the water is repelled, and accumulated upon the coaſts of this iſland.

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The range of the more ſteady currents in theſe ſeas, according to the teſtimony of navigators, may be thus ſtated, for a general rule.

		Direction.
In the Strait between	Cape Nicolas (Hiſpaniola) and Cape Mayze (Cuba), ——	N. E.
	E. end of Jamaica, and Cape Tiburon (Hiſpaniola), —— ——	N. by E.
	N. ſide of Jamaica, and S. ſide of Cuba,	W. by N.
	Old Bahama Channel, N. ſide of Cuba,	W. N. W.
	Cape Catoche, and Cape Antonio,	W.
	Off the Havannah, ——	E.
	Off the Colorados, ——	E. by N.
	Gulph Channel between Bahama Iſles and Eaſt Florida, ——	N.
Irregular.	Coaſt of Eaſt Florida within the gulph, ſometimes ——	S. W.
	Caicoes or Turk's Iſlands, (off N. E. part of Hiſpaniola,) ſometimes	Weſterly.

The tides are equally as variable and irregular as the ſmaller currents, in their periods of flux and reflux; but ſeldom flow more than three feet, either at the North ſide of the Bay of Mexico, at the Weſt end of Cuba, or at St. Auguſtine, the Northern extremity of Eaſt Florida.

We obſerve here, four remarkable proviſions for keeping the ocean between the Tropics in conſtant motion, that its waters may not, by ſtagnation and corruption, prove deſtructive to animal life; they are, the trade winds, the greater ſaltneſs of the water, tides, and currents. The greater advantage of currents to perform the apparent deſtination of tides in this climate, where the ebb and flow is ſubject to ſo much irregularity, and is, in general, ſo inconſiderable, ariſes from hence; that if the ſea ſhould recede here from the ſhore to a great diſtance, during ſeveral hours, as in the Northern countries, leaving an extenſive tract of mud and filth, expoſed to the exhalation of the ſun, and action of the wind, the ſtench produced from them would be inſupportable to human inhabitants. A moderate North wind, now and then, ſets the water ſomewhat higher upon the North coaſts of this iſland, and forces it to recede proportionably from the South ſhores; but the coolneſs and drying quality of that wind, as well as its ſetting off the South ſhore, correct or diſſi-

pate any putrid exhalations, ſo that they cannot annoy the inhabitants of thoſe parts.

Thus has the Almighty not left this portion of the globe deſtitute of neceſſary preſervatives againſt the inclemency of the climate; ſo that they, who act here agreeably to the dictates of right reaſon, may enjoy every gratification of health and felicity in a reaſonable extent, without being afflicted with more than their juſt proportion of natural evils, in common with the reſt of mankind.

And there is no doubt, but that the ſame Wiſe Being, who contrived this conſtant agitation of the ſea, to preſerve its vaſt collection of waters in ſufficient purity, has likewiſe in the Æquatorial climates, deſigned the extraordinary ebb and flood of the atmoſphere, and its vaſt elevation above the air of the Poles, with the like good view of ſecuring the freſhneſs and briſk temper of this fluid ſo eſſential to life, and keeping it, by a perpetual circulation, from deadneſs and ſtinking.

The variations of the magnetic needle were obſerved by Dr. Halley, to be very ſmall near the Æquator. I have ſeen no account of them for this iſland, that can be relied upon; but, if obſervations ſhould be faithfully made here, they would probably confirm his opinion.

According to Mountaine's chart, conſtructed in the year 1700, from Dr. Halley's tables, the variation at Port Royal then was about 6° 30′ E. Some late obſervations make it about 6° 0′ E. But, as in moſt parts of the world it is found to be continually either increaſing or decreaſing, ſo we may reaſonably conclude, that it may have altered in both reſpects very much during this long interval that has paſſed ſince the conſtruction of the chart. For want of a regiſter of annual obſervations given to the public, we have no *data* whereby to determine either what the whole variation amounts to in a ſeries of years, or whether it is at this time on the increaſe or decreaſe. A correct obſervation might be made here, by two ſtations, one at Port Royal point, the other at Long Bay, or Green Iſland harbour at the Weſt end, in the month of December, at which time the ſun's amplitude, at riſing and ſetting, may be taken to a degree of great exactneſs, from his having then the greateſt Southern declination, and not being intercepted by the mountains, from obſervers placed at thoſe convenient ſtations.

In 1682, the variation at Martinique (lat. 14° 30′ N.) was found to be 4 deg. 10 m. Eaſt: in the year 1704, it was 6 deg. 10 m. E. which makes

makes 2 degrees in twenty-one years. At La Vera Cruz (19° 12′ N. lat. or about a third of a degree more to the North than Jamaica) in the year 1727, it was only 2° 15′ E. In 1746 the variation at Cape Francois (19° 45′ N. lat.) was found to be 5° 15′ E. Dr. Halley conjectured three lines of no-variation, or lines where the needle does not deviate in the leaſt from its true Northern point. The Eaſtern or Atlantic line takes place in N. lat. 33, and increaſes very ſlow, as appears from the preceding examples. The origin of theſe magnetic powers, as well as the cauſe of their variations, remains hitherto a myſtery; though, without doubt, they are contrived by the ſame infinitely Wiſe Being, to anſwer ſome very important purpoſes in the mechaniſm, or motions, of this globe; but the aſcertaining theſe variations with preciſion in the different meridians, as it is attended with no great abſtruſity, ſo it is extremely intereſting to correct navigation, and the right projection of charts and maps [g].

[g] A regular attention to the courſe of this variation is of the utmoſt importance alſo to landed property in this iſland, in regard to the true fixing of boundaries; their uncertainty having been a conſtant ſource of diſpute and litigation ever ſince the iſland was firſt ſettled. Formerly moſt ſurveys were merely imaginary, ſo that it is but of late years that our ſurveyors have been conſtrained by meer dint of penal laws to make actual ſurveys; if we ſuppoſe an actual ſurvey made, and the lines duly marked on earth, or on trees, in order for a patent purſuant to the diagram returned, and that a diſpute, concerning the true fixings on all ſides, ſhould happen five or ſix years afterwards, it is highly probable, that, on the faireſt re-ſurvey, a moſt material difference would be found; for, if the firſt ſurveyor has not allowed for the variation of the needle, but has taken the magnetic meridian for his guide; or if he has made an allowance, but the ſubſequent ſurveyor ſhould not do the like, a conſiderable alteration may be made to the boundary in the courſe of a few years, and the ſite of the plat varied, both with reſpect to its Eaſtern and Weſtern lines. This effect has undoubtedly happened in a multitude of examples, ſince few ſurveyors here advert to it, or make any ſpecification of it, either on the original diagram, or on a re-ſurvey.

This is ſufficient to ſhew, what an equivocal uſe we make here of the term *boundary*, which, inſtead of being rendered ſo uncertain by the omiſſion of ſurveyors, the decay or deſtruction of marked trees, and other cauſes, ought to be perfectly diſtinct and obvious, ſo as to be aſcertained upon the view only.

It is needleſs to add, the many hardſhips which may ſpring from this irregularity, to the vexation and diſturbance of the poorer ſettlers, who are ill able to conteſt their location with a graſping, litigious, and opulent neighbour.

For putting ſtop to ſuch injuſtice, the legiſlature cannot interpoſe too ſtrictly; and, next to regulating the qualifications, duties, and proceedings, of every ſworn ſurveyor belonging to the iſland, it might, perhaps, be attended with very happy effects, if every proprietor of land, or his agent, ſhould be obliged by law, to make an annual *perambulation* round his lines, on a certain day to be fixed by the law, in that ſeaſon of the year which has uſually been experienced the dryeſt, and moſt convenient for the purpoſe, in each reſpective pariſh. By this eaſy method, the marks might be conſtantly preſerved or renewed, as they are in England, where this is the cuſtomary practice for aſcertaining the bounds of pariſhes, manors, &c. Re-ſurveys would become unneceſſary, and many expenſive lawſuits be prevented.

Juſtly, therefore, may we conclude with the poet;

" In human works, tho' labour'd on with pain,
" A thouſand movements ſcarce one purpoſe gain;
" In God's, one ſingle can its end produce;
" *Yet ſerves to ſecond too ſome other uſe.*"

Pope's Eſſay on Man, Ep. I.

CHAP. VIII.

A SYNOPSIS *of Vegetable and other Productions of this Iſland, proper for Exportation, or Home Uſe and Conſumption. Of Exotics, cultivable for one or other of theſe Purpoſes; and of its noxious and uſeful Animals, &c.*

1. SUGAR CANE. — *Arundo Saccarifera.*

THE manufactures produced from this valuable plant having already been diſcuſſed, it remains only to ſay, that the proper manner of its cultivation in different ſoils, and the whole proceſs of the manufacture of its expreſſed juice, would lead into too extenſive a field. The cultivation of it is now, in general, well underſtood in this iſland, and the manufacture daily improving; a knowledge of them, perhaps, as things are at preſent circumſtanced, is beſt acquired by practice and experience, ſince we have no rules as yet laid down, ſuitable to every peculiarity of ſituation; nor hiſtory of ſoils and manures, &c. for the ſeveral diſtricts of the iſland: ſuch a work might be extremely uſeful, and indeed is much wanted.

The general proportions, with reſpect to the juice of this plant, and its manufactures, are rated as follows:

Cane Juice.	Muſcovado.	Refined Sugar.		Melaſſes.			Rum.			Hhds.	Punch.
Gallons.	lb. wt.	Single lb. wt.	double lb. wt.	gall.	qts.	pints.	gall.	qts.	pints.	at 15 cwt.	at 110 gall.
1	1			0	0	1					
100	100	33	14	12	2		4	0	1¼		
1500	1500	496	210	187	2		62	2		1	
150,000	150,000	49,600	21,000	18,750			6250			100	57

The remainder of the juice conſiſts of water, ſcum, and dregs, from which rum is alſo diſtilled. A portion of the ſkimmings is given to mules and hogs on moſt eſtates; and, as the proportions muſt vary with the quality of the ſoil, the goodneſs, or impoveriſhed ſtate of the land, the quantity of rain, and other circumſtances, it is impoſſible to fix them to any unerring ſtandard. Many reckon 200 gallons of rum to 3 hogſheads of ſugar, and this may be admitted, where ſkimmings and melaſſes are both

both of them applied: in general, it may be computed, that only about one-fourth part of the ingredients [*h*], used in the diſtillation of rum, conſiſts of melaſſes. In this caſe, 100 lb. wt. of muſcovado is proportioned to 1 gallon of melaſſes, or 4 gallons of rum [*i*]; *i. e.* one puncheon of 112 gallons to two hogſheads of 1400 lb. each, nett weight. There is a great waſte of this ſyrup in various ways; in the curing-houſe, the ciſterns, &c. and much is left in the ſugar hogſheads, undrained. The waſte in a hogſhead of ſugar on the voyage home is very frequently 100 lb. wt., which chiefly (if not entirely) is melaſſes; from ill-cured ſugars the drain is ſtill greater, amounting ſometimes to one-third of the whole weight ſhipped. 100 lb. may, therefore, be called the average *per* hogſhead. This, on 1000 hogſheads, is 100,000 lb., which probably might have yielded 8750 puncheons of rum, worth upwards of 12,000 *l.* ſterling.

Sugar is of the ſame nature as honey; it yields the ſame principles, and in the ſame proportions; it is a native vegetable ſoap, containing an oil miſcible with water, by means of a ſalino-acid ſubſtance. Lime readily unites with all acids, but probably loſes all its cauſtic quality by the union, and by imbibing a large quantity of factitious air in the proceſs.

2. Indigo. — *Indigofera.*

There are three ſpecies of it, the common, the *guatimala*, and the wild. The firſt yields more of the dye than the others, but is ſubject to more miſchances in the culture. The ſecond is better than the firſt; but the wild indigo is preferable to either; its leaves are ſmaller, the ſtem more woody, and it grows ſometimes 8 or 10 feet high. It is found in great plenty in the river courſes and ſavannahs on the South ſide of Jamaica, particularly about the Rio Minho in Clarendon, near the banks of which it was formerly cultivated, as appears from the ruins of ſeveral vats ſtill remaining. It is much hardier than the other ſpecies, and the dye extracted from it is of a beautiful copperiſh caſt, and cloſe grain. As it has a tap root, it requires a deep ſoil, and thrives beſt in what is free and rich, in a warm ſituation, where it is frequently refreſhed with rain. It may be planted at any ſeaſon of the year. The land is firſt hoed in little ſtrait trenches, about two inches deep, and eighteen inches aſunder; the ſeed is ſown in theſe trenches not very thick, and then lightly covered in with earth. A buſhel of ſeed is allowed for ſix to eight acres. If the

[*h*] The proportions may be found to vary from one-fourth to one-ſixteenth, according to the yielding of the canes, and the pleaſure of the diſtillers.

[*i*] It was formerly computed in Barbadoes, that 100 lb. wt. of muſcovado would yield 5 gallons of rum; but, I think, this allowance of ſpirit too large, if it is of good proof, or highly rectified.

weather proves warm and ſerene, the plant will appear above ground in a few days, and, with moderate ſhowers to bring it forward, will be fit to cut in ſix or ſeven weeks. The ground muſt be hoed and cleaned as ſoon as the young plants appear to looſen the ſoil about them, and facilitate their growth. In ſome parts, they do not come to perfection under two or three months; and are generally obſerved to anſwer beſt when cut in full bloſſom, as the leaves are then thick, and fulleſt of juice. The French diſtinguiſh the time by ſqueezing a plant in the hand; and, if the leaf cracks, they ſuppoſe it to have acquired the due maturity. The vats for manufacturing it are generally three, placed in a regular flight, like ſteps, one aſcending to the other. The higheſt, which is the largeſt, is called the ſteeper, and the dimenſions about ſixteen feet ſquare, and two feet and an half, in depth. This opens by one or two holes, made through a junk of hard timber (built in the front-wall towards the bottom) into the ſecond, which is of greater depth; and the ſecond opens in the like manner into the third, or ſmalleſt. Theſe latter are called batteries, or beaters; and ſome make them both of equal ſize, which, in proportion to the dimenſions above given, ought to be twelve feet length, by ten breadth, and four and an half depth in the clear. They are built with maſonry, and lined with a ſtrong terraſs, like the ſteeper, or of cloſe-grained plank (not cedar) of two inches and an half thick, well faſtened to the frame with large ſpike-nails, and caulked, to prevent leaking. Vats of theſe given dimenſions are proper for about ſeven acres of the plant.

When every thing is in readineſs, the plant is cut, and regularly laid in the ſteeper, with the ſtalk upwards (which haſtens the fermentation), till this vat is three-parts full. A number of rails are then laid the whole length of the vat, at the diſtance of about eighteen inches from one another: theſe are ſtrongly wedged down, by means of timbers, which are made to preſs upon them, to prevent the plants from buoying up when water is put upon them. The ſofteſt water anſwers beſt for the purpoſe; and as much is let in as the weed will imbibe, covering it with a ſurface of four or five inches. In this ſtate it is left to ferment. In twenty-four hours it grows ſo hot, that no one can bear the hand in it; and, if the proceſs goes on well, it will bubble like water in a pot upon the fire

and

and ſhew a tinge of very duſky blue. Great nicety is required, as well in not ſuffering the tender tops to run into putrefaction, which might ſpoil the whole, as in drawing off the water at the critical moment; for, if it is drawn two hours too ſoon, great part of the pulp will be loſt; and, if the fermentation is kept on as much too long, the labour will be loſt.

To avoid theſe diſaſters, a handful of the weed is frequently taken out; and, when the tops are obſerved to become very tender and pale, and the ſtronger leaves to change their colour to a leſs lively pale, this is known to be the proper point; and the liquor muſt be ſpeedily drawn off into the ſecond vat, there to be thoroughly beaten and incorporated [*h*]; to perform which operation, a variety of machines have been invented. In Jamaica, they formerly ſuffered the liquor to ſtand twenty-four hours in this ſecond vat, and then churned it for three or four hours with paddles, or pieces of board, drilled full of holes, and faſtened on the end of long poles. The French made uſe of a kind of buckets, without any bottom, fixed to poles, which reſted on pivots, and were pulled up and let fall again alternately with a jerk. But far more convenient machines are now conſtructed, with a cog-wheel, which moves the levers, or beaters, with greater regularity, and ſaves the labour of many Negroes; the whole being kept in motion with a ſingle horſe, or mule; and one of them will perform more work in half an hour, than ſix Negroes are able to do in ſix hours; ſo that they fully anſwer the expence of erecting them, and frequently reduce an imperfect tincture to grain, which could hardly otherwiſe be brought about. When the liquor has, by means of ſuch a machine, or any other method, been well churned for the ſpace of fifteen or twenty minutes, a little of it being taken up in a plate will appear curdled, or as if full of a ſmall grain. A quantity of clear lime-water, always kept ready for the occaſion,

[*h*] Some have uſed the following ſimple contrivance on this occaſion with ſucceſs. A ſmall ſquare ſtick, painted white, and graduated with black lines, of ſix or eight to an inch (the inches being numerically marked from the bottom), is fixed conveniently within the ſteeper in a perpendicular poſition. This is carefully obſerved, from time to time, to note with exactneſs the higheſt riſe of the ſcum; and immediately, when it begins to ſubſide, the plug is to be drawn out, and the liquor diſcharged into the next vat. A ſimilar method is practiſed in Egypt, to diſcover the increaſe or fall of the Nile by a graduated column, called the *mokhias*; from whence perhaps the hint was taken.

is

is then gradually let in, to augment and precipitate the *fæcula*; the ſtirring and beating the indigo water being ſtill continued, and the colour and appearance of the *fæcula* being carefully examined from time to time, as the work advances; for the grain paſſes, by degrees, from a greeniſh caſt to a fine blue, which is the proper colour when the liquor has been ſufficiently worked. Too ſmall an agitation will leave the grain coarſe and green; whilſt too long continued a beating cauſes it to turn almoſt black. By examining it therefore repeatedly during the proceſs in a ſilver cup, or a ſoup-plate, the operator may ſoon learn to diſtinguiſh whether to have his indigo of a deep, copperiſh blue, or of a paler complexion, as he chuſes. When the liquor wherein the *fæcula* ſwim is quite clear, he may be ſatisfied it has lime-water enough. The lime-water muſt be perfectly clean, or otherwiſe the indigo will be very much ſpeckled; nor ſhould too large a quantity of it be let in, which would render the indigo too hard, and of a greyiſh caſt. When the indigo water has acquired a ſtrong, purple colour, and the grain has become ſcarcely perceptible, it muſt be left to ſettle, which it will do in eight or ten hours. The clear water is then very gently drawn off, out of the beating-vat, through the plug-holes, fixed for that purpoſe a few inches above the floor, or bottom; and the ſediment remains behind, which is carefully ſtrained through a horſe-hair ſieve, to render the indigo perfectly clean, and then put into bags of oſnabrig, or other coarſe linen, eighteen inches long, and twelve wide, which are ſuſpended for about five or ſix hours in the ſhade, to drain out the water. The mouths of the bags are then well faſtened, and put into a preſs, to be entirely freed from any remains of water, which would hurt the quality of the dye. The preſs is a box of five feet in length, two and a half width, and two depth, having holes at one end, to let off the drained water. In this box the bags are piled one upon another, until it is quite full; a plank, fitted juſt to go into it, is laid at top, and loaded with a ſufficient number of weights, which, by a gradual, conſtant preſſure, entirely ſqueeze out the water, and the indigo becomes a fine ſtiff paſte. It is then taken out of the bags, ſpread upon a plank, and cut into ſquares of two inches each, which are ranged, under cover, in a free air, without expoſure to the ſun, which would be very hurtful to the colour of the dye. Whilſt it is

in the drying houſe, it ſhould be turned three or four times a day to prevent its rotting. The flies muſt likewiſe be driven from it. Care is taken to have it thoroughly dry before it is packed, becauſe, if it is put damp into the caſks for exportation, and headed up, it will ſweat, and inevitably be ſpoiled. Good, marketable indigo ſhould be of a fine, copperiſh, blue colour, deep, and ſhining, with a ſmooth grain. It ſhould break eaſily, ſwim in water, and burn very freely, leaving ſome white cinders behind.

The faults in indigo generally ariſe, firſt, from too long a putrefaction, which gives it a dirty hue; ſo that it looks like black mould, or mud: ſecondly, from too little beating; and then it has a coarſe grain, and a greeniſh colour: thirdly, from too much beating, which always imbues it with a black caſt: fourthly, from a mixture of the particles of lime, when the lime-water has not been ſufficiently depurated, or when too large a quantity of this water has been let in, which renders it greyiſh, and hard: fifthly, for want of lime-water, or when none is uſed; by which neglect, it never comes to a due granulation, nor ſettles well, and depoſits only an inconſiderable part of the ſubſtance. From all which it appears, that no ſmall degree of ſkill and attention are required in conducting and perfecting this manufacture. And hence we may eaſily conceive, how the right management of it came to be loſt in Jamaica, after the planters had for many years diſuſed it; for much depends on the knowledge gained by a long courſe of experience and obſervation, to direct the exact degree of fermentation, of beating, and application of the lime-temper, as well as the method of curing and drying for the market.

This valuable commodity is the principal ingredient known for dying a fine blue; and no part of the world affords better ſoil for the culture of Indigo, than the interior parts of Jamaica. Add to which, that it is not bulky in the carriage: and that a few barrels, of ſmall ſize, ſuch as a mule may convey through the moſt difficult roads, will contain a quantity of it of great value. Fifteen Negroes are eſteemed ſufficient to manage and attend twenty acres; and twenty-five Negroes are allowed to fifty. Four Negroes are therefore about equal to five acres; which proves that it may be entered upon by men of exceedingly ſmall capitals. And it is alſo certain, that they will have time for doing other occaſional work through the year.

One

One acre of rich ſoil, well planted, will, with good ſeaſons and proper management, yield two hundred pounds weight [*i*], in twelve months; for this plant gives ratoons, or re-produces, affording four or five crops in a year; but muſt be re-planted afterwards. One Negroe's load, of good plants, will produce one pound weight of good indigo; and, ſuppoſing a mule-load ſix times as much, the latter will be equal to ſix pounds weight. A planter, poſſeſſed of four Negroes, and two mules, with five acres in this cultivation, may therefore be allowed, by prudent management, to make one thouſand pounds weight *per annum*; which, at 6 *s.* *per* pound ſterling, is worth 300 *l.*

About the year 1620, the trade for indigo ſtood thus. Three hundred and fifty thouſand pounds weight was ſpent in a year in Europe; which, at 4 *s.* 6 *d.* *per* pound at Aleppo, coſt 75,833 *l.* 6 *s.* 8 *d.*; at 1 *s.* 2 *d.* in the Eaſt-Indies, coſt 20,416 *l.* 12 *s.* 4 *d.*. In later times, Great-Britain and Ireland have conſumed eight hundred thouſand pounds weight and upwards *per annum*; and were computed to pay France 200,000 *l.* annually for what they bought from her. Jamaica once furniſhed a large ſupply; but, the tax of 3 *s.* 6 *d.* *per* pound being injudiciouſly impoſed by parliament, the planters were obliged to drop it, and went upon other commodities. In conſequence, until the planters of South-Carolina undertook this article, the French iſlands (and principally Hiſpaniola) ſupplied not only Great-Britain, but the greater part of Europe. About 1747, the Carolinians remitted about two hundred thouſand pounds weight to Britain; which ſold well, though of a quality inferior to the French: but they have ſince improved it ſo, as to be nearly equal. Such were the effects of this high duty; which loſt the nation many thouſand pounds yearly, and extirpated indigo from Jamaica, to the ruin of ſeveral induſtrious families. A wiſer parliament, after the manufacture began to thrive in Carolina, inſtead of laying on duties to prohibit, granted a bounty of ſix-pence *per* pound weight on all indigo raiſed in the American colonies, and imported into Great-Britain di-

[*i*] Thirty to eighty pounds weight is allowed for tolerable yielding in South-Carolina. But it is to be obſerved, that theſe lands are poor in compariſon with the freſh-cleared wood-land of Jamaica, which requires to be exhauſted by this, or ſome other vegetable of an impoveriſhing nature, before it will make ſugar; and for ſuch ſoils two hundred pounds weight will not appear at all exaggerated; and fifty pounds weight *per* acre, for the *medium* produce of indifferent ſoils.

rectly from the place of growth. The encouragement was politic; yet this article does not ſeem as yet to be cultivated in our colonies to ſuch extent as to furniſh the home-demand; for the importation of French indigo is ſtill permitted. Whence it ſeems, that, for want of employing more of our lands in this article, the market for ſugar will be glutted, and that for indigo not ſufficiently ſtocked.

In 1672, Jamaica had ſixty indigo-works, chiefly in Vere, which produced fifty thouſand pounds weight *per annum*. If, therefore, it had not met with ſo fatal a check, we may judge, from this flouriſhing ſtate of it at ſo early a period, that, in the courſe of twenty or thirty years, it would have yielded five or ſix times as much, and gone on increaſing, in proportion to the home-demand, to the preſent hour; by which the nation might have ſaved ſome millions of money. At preſent it is cultivated here by about twenty different ſettlers, moſt of whom reſide in the pariſh of St. Thomas in the Eaſt. The *medium* produce, in Jamaica, of one cutting is fifty pounds weight *per* acre. Few, who have cultivated it here in the lowlands of late years, gained more than two cuttings, the firſt in July, the ſecond in Auguſt, for want of ſeaſons. In the wet, rich lands of the interior parts, it is probable, four or five cuttings a year might be got, as in Hiſpaniola; where the French cultivate it on freſh wood-lands, to ſterilize and prepare them for ſugar, repeating the cut every ſix weeks, five times, or even oftener, in the year. And this kind of ſoil ſeems the beſt-adapted, as it unqueſtionably produces an indigo of the beſt quality, and worth ſeveral ſhillings *per* pound weight more than what is made from poorer ſoils, or in ſituations which have not ſeaſonable rains. Hence, it will not ſucceed well in the lower ſavannah lands of Jamaica, whoſe ſtaple is rich enough, but not ſufficiently watered.

3. Coffee. — *Coffea.*

This ſhrub, it is needleſs to mention, was originally brought from Arabia Felix, where it is cultivated, between the hills, in a dry ſoil, and watered frequently by artificial channels from rivers, cut on purpoſe. It grows luxuriantly in all the inland parts of Jamaica; which are therefore, with great reaſon, in general, thought too rich and wet for it. The drier the ſoil, and warmer the ſituation is, the better will be the berries; they will be ſmaller, and have leſs pulp:

 and

and this is the ſort which will gain the preference at market, from the ſuperior excellence of its flavour. The South-ſide parts of the iſland produce a much better-flavoured coffee than the North-ſide. The berries of the latter and midland-parts are large, and have a full pulp, which requires a long time to dry; and the atmoſphere and weather of theſe diſtricts are too moiſt for the purpoſe: ſo that the coffee, brought from thence, is frequently covered with a degree of mouldineſs, and contracts a muſty, diſagreeable ſmell and taſte. The larger, therefore, and more ſucculent the berries are, the worſe will be their flavour. The beſt way of raiſing them is from the ſeed; for the young plants do not take root well, nor thrive, in the lowlands, if they have been brought from the mountains: but, if raiſed in a nurſery in the lowlands from ſeed, they may be tranſplanted with ſucceſs during the rainy ſeaſons, or when the ground is thoroughly moiſtened. The ſeeds, or berries, for this purpoſe, ſhould be ſet immediately after their being gathered from the tree; otherwiſe they are apt to fail. When the plants are about five or ſix inches high, and grow double (or two together), they ſhould be carefully ſeparated; which is done by drawing one or both, and planting them in ſeparate beds, without injuring the fibres of the roots, or expoſing them too long to the air, which would probably kill the plants.

The berry ripens from Auguſt to October, blackens in November, and is fit to gather in December; but it ought never to be gathered until the pulp is exhaled, and the coat ſuffered to become thoroughly dry and ſhriveled; ſo that they appear ready to drop off themſelves, and actually fall off upon a ſlight touch. I have always experienced, that the beſt-flavoured coffee was collected from under the trees, where it had recently fallen, quite dry, black, and ſhriveled. Wherever it is cultivated, it ought to be planted at diſtances ſuitable to its growth; for, in the lowlands, it rarely exceeds five feet in height; but, in the mountains, it riſes to ten feet, or more. The diſtance therefore at which they are ſet from each other ought to equal the height at which they uſually grow in theſe parts reſpectively. The produce of a good tree is from one pound and a half to two pound weight.

The mountain coffee might be improved by ſending the berries, when gathered, to the lowlands, where the heat is greater, and air

more dry, to be prepared for the market; inſtead of keeping them involved in a clammy juice, which will not paſs off freely in a damp atmoſphere, but corrupts and hurts the ſeed. The proprietors of extenſive walks ſhould provide themſelves with a large barbacue, or platform, terraſſed or planked, to finiſh the drying of the ſeed; and, if it was contrived under a roof, it would be more eligible than the common method of laying them open to the weather, as the quantity ſpread over a large platform cannot be eaſily reſcued from a ſudden ſhower. A drying houſe therefore, with one or more floors, which would admit a free current of air, and exclude the rain and ſunſhine, might be moſt proper. After the berries are thoroughly dried, they are cleared of their coat or huſk. This was formerly performed in Jamaica by pounding them in large mortars; a laborious and very improper method, as, by the violent and ſucceſſive blows of the peſtle, they were frequently contuſed, and broke in pieces.

The Arabians, after having dried their coffee ſufficiently upon mats, ſpread it on an even floor, and break off the huſk by paſſing a heavy wooden roller to and fro upon it; they then winnow and cleanſe it, and expoſe it to the air for ſome days, to give it a more perfect drying, without which it would be apt to heat, and ſo loſe its flavour. The practice now uſed in Jamaica, ſince it has come into more general cultivation, is ſimilar to the Arabian; the huſk being taken off by machines turned by mules. Wooden rollers are preferable either to ſtone or iron; for the ſtone is ſubject to depoſite a grit, and the iron a ruſt: and the large timbers of Jamaica are ſufficiently ponderous. The advantages of the roller are the diſpatch of work, and equality of preſſure; both which contribute to render this article more fit for market, as well as more profitable. And the advantages of delaying to gather the berries, till they are dry and ſhriveled, are, that the huſks may be taken off with the utmoſt facility, and the berries be impregnated with the beſt flavour [*k*].

The great fault of the Weſt-India coffee is the want of flavour, or having a diſagreeable one. This may be attributed to ſeveral cauſes.

1. The growing in too moiſt a ſoil; which (though it always increaſes the ſize of fruit and vegetables, yet) greatly depreciates their quality.

[*k*] The moſt approved engines, now uſed in this iſland, were invented by the ingenious Mr. Latham, and are capable of cleaning one hundred hogſheads in a day.

2. Gathering the berries too ſoon. Some planters gather them while they are red, and hence find the utmoſt difficulty in extricating the huſk. At this time, the berries are much larger, and weigh heavier, than thoſe which are permitted to ripen perfectly on trees; for, when they are ripe, the pulp is diſcharged, and they are lighter, as well as ſmaller, than before.

3. Some error in the drying of them when gathered, which muſt be conſtantly attended to; for they cannot be too much expoſed to the air in the day-time; but they muſt be, every evening, removed under cover, and carefully ſcreened from dews and rain. Nor ſhould they be placed near any ſort of liquid or moiſture; for theſe berries are very apt to imbibe moiſture, and the flavour of any liquid near them; ſo that, even if it is pure water, the berries will be enlarged, and their flavour diminiſhed by it. A bottle of rum, being placed on a ſhelf, in a cloſet in which a caniſter of coffee-berries, cloſely ſtopped, was ſtanding at ſome diſtance, in a few days had ſo impregnated the berries, as to give them a very diſagreeable taſte. The ſame conſequence happened from a bottle of ſpirits of wine. The berries ſhould never, therefore, be laid to dry in houſes where ſugars are curing, or rum is kept; nor ſent over in ſhips freighted with rum, or pimento; leſt they acquire the flavour of theſe commodities, which cannot be avoided, if they are ſtowed in the ſame place [l].

From what has been ſaid it appears, that the ſoil, to be choſen for the cultivation of coffee-trees, ſhould be rather dry than moiſt, in which they will not grow ſo luxuriantly as in wet mountain-ſoils, nor the produce be ſo great; but as the quality of the produce will be ſo much more improved, ſo it will certainly turn out more to the planter's advantage.

The next thing neceſſary is to permit the berries to remain ſo long upon the trees, till their ſkins are ſhriveled, and turned black, and that the berries readily part from the ſtalk. Their weight, it is true, will be greatly diminiſhed; but the commodity will be more than double the value of that which is gathered ſooner.

When gathered in the proper ſtate, they muſt be well dried by expoſure to the air, but carefully preſerved from expoſure to moiſture.

And, when thoroughly dry, they ſhould be packed in very tight caſks, in preference to bags, and ſhipped in thoſe veſſels which have

[l] Miller.

no rum, or other ſpecies of freight, that will impregnate them with a detrimental flavour. It certainly deſerves the attention of the planters in this iſland to improve this article to their utmoſt, and not to have ſo much regard to the quantity, as to the quality of it; for, although the former may plauſibly appear to have the advantage in profit, it certainly has not, ſince the goodneſs of every commodity always claims the preference at market, commands the beſt price, and becomes the quickeſt in demand.

Eight Negroes are equal to clean and gather from fifty to ſixty acres, and upwards, according to the bearing of the trees; and fifty acres will yield, at leaſt, 500 *l. per annum*, if well taken care of. I have known a man, with two aſſiſtants, manage a walk of thirty acres, beſides attending other work.

An ingenious gentleman, ſome years ago, cauſed a pound of coffee to be analyſed by diſtillation, and found it yield,

	℥	ʒ	℈
Spirit, or Phlegm, ——	6	6	0
Oil, —— ——	2	4	2
Caput mortuum, ——	5	3	0

It yielded almoſt double as much oil, as horſe-beans; and almoſt treble as much, as wheat.

The virtues of it are thought to conſiſt in its oil. The ſeparation of this oil is promoted by roaſting; and it is what gives the peculiar flavour to the infuſion; for the raw berries impart none but what is very diſagreeable, and unattended with the effects peculiar to roaſted coffee. Taken in moderation, it is allowed, by phyſicians, to exhilarate the ſpirits; quicken the action of the ſtomach; diſpel the load and pains in the head, proceeding from faulty digeſtion; and to clear the ideas. It is moſt appropriated to moiſt, phlegmatic temperaments; and, though decried by ſome writers, is experimentally found medicinal and innocent, if never taken in exceſs.

Per ſtat. 5. Geo. III. c. xliii. §. 33, coffee muſt be imported into Great-Britain in packages of *one hundred and twelve pounds weight* nett at leaſt, and ſtowed openly in the ſhip, or veſſel (*i. e.* not ſecreted), on penalty of forfeiture [*m*].

4. COTTON.

[*m*] In the pamphlet * lately publiſhed by Mr. Ellis, agent for the iſland of Dominica, are ſeveral very ſenſible remarks, which are pertinent to this ſubject. The whole of that excellent little tract

* Hiſtorical Account of Coffee, &c. 1774.

deſerves

4. COTTON. — *Gossipium seminibus majoribus Brasilianum.*

This shrub was probably brought into the island by its antient Indian inhabitants from the South-American continent. It is propagated

deserves perusal. Its professed design is to give information to our West-India coffee-planters, and suggest the surest means of enabling them to rival the Orientals. I shall therefore select such parts of it as may tend, with what has already been mentioned, to improve the culture of this article in our island.

They, who have been accustomed to drink coffee frequently, maintain an opinion, that the Asiatic is superiour to the American; that its odour is more refreshing, its flavour more grateful: they even pretend a great difference between what is of foreign growth in America, and that which is grown in our own islands. If this opinion is not founded on the caprice of taste, but on certain and common experience; the superiority of the Asiatic coffee must arise chiefly from its being cultivated in soils best-appropriated to it; from the length of its voyage to the European markets; from the greater age it acquires, by this means, before it comes into the consumer's hand; and from its not being packed, on board ship, with goods whose steams might impregnate and vitiate its flavour, if they were to be stowed in too near a neighbourhood. The French, and most other foreigners, cultivate and ship it with an attention to these points; which in our islands are generally unheeded. Some very good judges of this matter have thought, that coffee might be brought to as great perfection in our colonies, as it is in Mocha, or other Eastern places. Whether this be possible or not, it is certainly worth our trial to put in practice those methods which, there is no doubt, will greatly improve it, if not render it equal in value at market to the Asiatic. In order to which end, the following remarks are submitted to the consideration of our coffee-planters in Jamaica; with such additional comments as may serve for illustration.

Soil proper for it.

The part of Arabia, from whence the Asiatic coffee is brought, is, for the most part, extremely sandy, dry, and hot. A light soil, dry and elevated slopes, produce coffee of a smaller berry, and more delicate flavour; but that, which grows in a low, fertile, and moist soil, is bad, the berry large and flat, and almost insipid. The drier the soil, the smaller will be the fruit, and the quality more excellent. Regard must therefore be had to the transplanting of this tree, that it may not be carried from that soil, where it might have attained great perfection, to another, where, though it may grow larger, and more luxuriant, the fruit may degenerate in quality; for we may safely infer, that a plant, brought from a dry, sterile, sandy soil, will assume, not only a very different appearance, but its fruit will have a very different quality from that which is the produce of a fertile, moist soil. Plants therefore, removed from the South-side of our island to the North-side, or from a husky, impoverished piece of ground into a clayey, loamy, or brick-mould soil, or from places, where it seldom rains, to others where the atmosphere is always cool and moist, may bear large, succulent berries, but of very inferior goodness. It ought to be planted in a soil as similar to its natural one as possible. There are some kinds of trees, perhaps the greatest part, whose fruit, while the trees are young, is either more insipid, or the taste of it less refined, than at a more advanced age. The fruit of young walnut trees is large; but it is watery and insipid: as the tree grows older, the nuts decrease in size; but their taste is more agreeable. A similar progress may be observed in other species. And it is not improbable, but the coffee-tree may be another instance of the like properties; for it is certain, that the fruit of old coffee-trees is much smaller; but whether the flavour of it is likewise improved must be left to the decision of future experiment. The remark, however, will be sufficient to justify the planter's caution not to cut down an old walk, in expectation of obtaining more excellent berries from one to be newly planted in its room.

It is true, that the trees, planted in rich soils, yield commonly from twelve to sixteen ounces of coffee *per* plant, and upwards (see p. 682.); and that, in dry soils, they scarcely furnish more than from six to eight ounces; which makes an immediate difference of one half in the weight. Now, at the European markets, the only stated difference, in the price of the small, well-prepared coffee, and that which is larger and of the worse kind, is from fifteen to twenty *per cent.* The planters therefore find it their advantage to plant their trees in the richest soil. Those only will have the small and fine berries, who have no other than bad grounds, and have not a sufficient number of Negroes to improve them. And thus self-interest prevents many from applying themselves to the culture of that kind of coffee which is most valued in Europe: for the remedying of which, and exciting a spirit of emulation among them, the difference of price between the various sorts of coffee should be as considerable, as it

pagated by the ſeed, which is ſown, about five feet aſunder, at the latter end of September, or beginning of October, and at firſt but ſlightly

it is between the ſeveral kinds of ſugar. But, notwithſtanding this difference, it may juſtly be queſtioned whether an improvement of quality might not, by bringing it into more general reputation, cauſe the conſumption to become double, or treble, what it is at preſent; in which event, the planters, who beſtowed the moſt pains in the culture and curing of it, would be the greateſt gainers. Be this as it will, the proprietors of worn-out land in Jamaica, which is not rich enough for a longer cultivation in canes, might find it turn to good account in coffee, much better perhaps than in paſturage; for ſuch kind of land, which is either naturally too infertile, or too much exhauſted, to be capable of yielding either good canes or rich graſs, would probably anſwer perfectly well for the production of coffee of the moſt eſteemed ſort.

Gathering the Berries.

The Arabians, when they perceive the fruit come to maturity, ſpread cloths under the trees; which they ſhake, and the ripe fruit drops readily. This circumſtance deſerves the particular attention of the Weſt-India planters, moſt of whom are accuſtomed to gather it as ſoon as it turns red, and before it begins to ſhrivel: whereas the Arabians wait for the tokens, which ſhew that the berries have attained to their full maturity. It is a certain fact (as I have before hinted), that the ripe berries, which ſpontaneouſly fall to the ground when they are dry, or have been ſhaken down by the wind, have by far the beſt flavour.

Manner of Curing.

The Arabians, after gathering the berries, ſpread them upon mats, and expoſe them to the ſun (others ſay, they lay them in the ſhade) until they are perfectly dry; and, after they are cleared from the huſk, the drying is again repeated, to prevent them from heating on board ſhip. After this, they are winnowed, or well cleaned; without which, they would not be ſo marketable, nor produce ſo good a price. Objections are made to drying them in the ſun, on the ſuppoſition that this proceſs may extract great part of their virtues, particularly the fine flavour good coffee has, which is ſo grateful to the ſmell, when it is firſt poured out. And, in the ſmaller iſlands, other objections are made to the expence of erecting buildings, to ſhade their coffee from the ſun and rain. For my own part, I conceive that moiſture is the principal bane to coffee; and that it is not ſo much injured by expoſure to the ſun and breeze. They, however, who think differently, may, in Jamaica (where materials for the purpoſe are plentiful enough in all parts), conſtruct a drying-houſe, or ſhed, where it may be guarded from dews or rains, as well as from a too violent action of the ſun upon it, and yet be ſufficiently ventilated by a continual circulation of air.

Shipping it.

The French exceed us vaſtly in this reſpect; and the greater price, which the coffee of their American produce gains beyond ours, is owing, in a great degree, to their ſuperior care and management. One would hardly ſuſpect the merchants and planters could be capable of ſo much inattention, as to ſhip coffee in veſſels loaded with rum and coarſe ſugars, confined in a ſhip's hold. So much of it ought to be collected together at one place, as to load a veſſel. This is a point very eaſily to be regulated in Jamaica, either by the ſociety of coffee-planters at their meetings, or by the merchants there, who buy it up for exportation, and who ought to uſe equal care not to ſtow it in their ware-houſes (before its embarkation) among caſks of rum, ſugar, pimento, ginger, ſalt-fiſh, or other commodities of ſtrong ſmell, whoſe vapour may be communicated to the coffee, and alter the qualities of it in any degree. The French put it into caſks that are perfectly dry. In the Windward Iſlands, where the beſt of their American coffee is made, the ſhip is neither laden with raw ſugars, nor rum. Clayed ſugars only are exported with it; which are of little, if any, detriment to it. The captains take care alſo to place it between decks, or in ſome other very dry part of the ſhip. The Engliſh, on the contrary, ſtow raw ſugars and rum in almoſt every part of it; and theſe do a conſiderable injury to the coffee that lies near them. Moſt of the Engliſh ſhips are hired for the freight; the captains ſtow the goods as they receive them; and the owners are ſatisfied, if the veſſel is but well-filled. It is a matter of little concern to them, whether the ſeveral kinds of goods have been properly diſpoſed, or whether they have received any detriment by lying near each other. The French ſhips are generally laden for the proprietors own uſe: the captains buy the goods themſelves; and, that they may be able to give a proper account of their management, and to ſhew that they have acted with prudence and caution, they are obliged to pay great attention to the ſtowage of their veſſel, and to the preſervation of their cargoes. Hence it follows, that the coffee, which is carried to France, is better than that which is brought to England. Another point ought

ſlightly covered. After it ſprings up, and becomes a plant, the root is well-moulded. The ſeed is ſubject to decay, when it is ſet too deep, eſpecially

ought not to be omitted; which is, that our plantation coffee is made uſe of too ſoon. Perhaps, one part of the excellence of the Mocha coffee ariſes from this circumſtance: the Eaſt-India company ſend a ſhip once in two years; it is moſt probable, a part of the loading has been kept, in that hot country, above a year; it is ſix months before it arrives in England; it may be ſix or twelve months more before it comes into the conſumer's hands. Thus between two and three years muſt inevitably intervene between its growth and conſumption. Much of that mucilage, which moſt probably in roaſting is the baſis of its flavour, is changed by this delay; and, indeed, experience confirms it. Dr. Fothergill mentions his having received a preſent of raw coffee from the Weſt-Indies. Some of this, which a year ago was ſo ill-taſted as to be unfit for uſe, was laid by in a very dry cloſet. This year it was again tried, and found to be greatly amended. In another year, it will probably be little inferior to the Aſiatic, if it continues to amend in proportion.

It is of much conſequence therefore, whether the coffee is kept in moiſt, damp ware-houſes, or in dry, airy places; whether it is ſhipped with other goods, or alone; whether it is uſed immediately, or not until after it has been kept a conſiderable time. It might be well worth the planter's labour and expence to keep his coffee in the iſland, from year to year, till he has got ſuch a quantity, either of his own, or bought from his neighbours, ſufficient to load a ſmall veſſel, marking the different ages on the ſeveral caſks. A merchant in Kingſton, in which town there is no want of excellent, dry ware-houſes, might ſet apart one for the ſole purpoſe of receiving coffee; and, collecting that of the ſmalleſt berry, keep it ſtored for a twelvemonth, and then remit it to England, in a veſſel chartered for the purpoſe; excluding all other commodities of the iſland, except mahogany, which would ſerve to cover the bottom part of the hold, while the coffee might have a dry ſtowage above and between decks. It ſeems probable, to think that ſuch a cargo, being houſed with equal care on its arrival in England, and lodged in a ware-houſe diſtinct from rum, ſugar, or pimento, would repay the loſs ſuſtained by keeping ſo long on hand. This, indeed, is partly proved by the amended flavour of that coffee, which, by reaſon of the glut at market, and low price, has not met with a prompt ſale.

The beſt Means of encouraging its improved Cultivation.

It may be of uſe, to conſider the meaſures which would ſooneſt put our planters upon overcoming every difficulty; which would oblige them to ſtudy the culture of this plant, the curing of the fruit, and the ſending it home in the higheſt perfection poſſible. By what means can it be made the Weſt-India planter's intereſt to cultivate coffee in ſuch a manner, as to approach, in taſte and flavour, as near to the Aſiatic as poſſible? The ſhort anſwer to this is, "Make it their intereſt;" that is, encourage its importation. The duties and exciſe on coffee from our plantations are as follow:

	l.	*s.*	*d.*	
The duties at 1*l.* 13*s.* $6\frac{3}{20}$*d.* *per* hundred weight, amount, *per* lb., to about	0	0	4	or upwards.
Exciſe, at 8*l.* 8*s.* *per* hundred weight, amounts, *per* lb., to about	0	1	6	
Total, *per* lb., is —— ——	0	1	10	and upwards.

When ſuch an exceſſive load of expences, and ſo many difficulties, ariſe to the grower, importer, and of conſequence to the conſumer, of Weſt-India coffee; it is no wonder, that the planters give themſelves very little concern about its cultivation. At preſent, there is very little difference in the produce, and conſequently in the price. *The high tax upon it is a bar to its conſumption* *. The coffee is, in general, bad; and the price in proportion. If the duties and exciſe upon it were leſſened, the conſumption would be increaſed; the planters would find it more deſerving their attention; taſte would grow more refined; the beſt would be ſought for; and the price would advance in proportion: but the preſent duties are almoſt prohibitory, and are the true reaſon why the planters do not afford the time, experiments, and charge, that are neceſſary towards amending and

* The truth of this muſt be obvious to moſt perſons; for there are none ſcarcely but muſt have obſerved, that, in middling families, coffee is regarded as a coſtly article of regale, and therefore ſeldom (or never) brought to table, except on extraordinary occaſions. At the ſame time, no family is ſo poor, as to be without tea: yet coffee is more generally liked by thoſe who have ever taſted it; and, if it were not for the expenſiveneſs of it, occaſioned ſolely by the exorbitant duty and exciſe, would be as univerſally drank; inſtead of being, as at preſent it is, attainable only by the richer families; who, together with the frequenters of coffee-houſes, are its chief, if not only conſumers, and that in a more ſparing degree than they would be, if the price of it was reduced by leſſening the tax it is now charged with.

perfecting

especially in wet weather. The soil, most proper for it, should not be stiff, nor shallow, as this plant has a tap-root. The ground is hoed

perfecting its quality. The planters in our islands not only could furnish the whole amount of the present consumption, but any further quantity that might be wanted. A few years since, the excise on foreign coffee was raised, for the encouragement of the British islands: but the duty and excise on our own were left as before; which are so considerable, as to restrain the middling and common people, who alone make a large consumption, from the use of it. The French, in this, seem to have understood their interest better. *Their coffee pays but a small duty; and tea is scarce heard of among them.* It might be so in Great-Britain, did we not make that article, as well as chocolate, dearer than tea, by disproportionate and enormous duties; which, otherwise, would be sold as cheap, and probably be the means of preventing, in a great measure, the exportation of our bullion to China. We see at present (1774), that a temporary suspension of the India company's purchases of tea has considerably affected the price of silver; so that we may soon expect a new coinage, which would not have happened, had they continued to drain this kingdom of bullion as formerly. This can only be avoided by substituting another *social, refreshing liquor*, instead of tea. Coffee and chocolate are its natural rivals; and would, in all likelihood, have the superiority, if government would be satisfied with their contributing to the necessities of the state in the same proportion: more is at present exacted; and that alone disables them from a competition. It may be thought strange, that articles, which our own colonies can raise, should pay a higher duty than a Chinese commodity, the place of which they might supply. This assertion, however, may be proved in the most convincing manner.

One eighth part of an ounce of tea, *i. e.* one spoonful and an half, is commonly used for the breakfast of one person. At that rate, a quarter of a pound is consumed in thirty-two days; which, to avoid fractions, we will consider as a month, both with respect to the other articles and this; so that, upon the whole, it will make no difference. A quarter of a pound *per* month is three pounds in the year.

One quarter of an ounce of coffee is usually allowed for a good dish; and it may very well be supposed, that, were it cheap, three such dishes would be consumed for a breakfast: however, to avoid objections, let us reckon but two; which will require half an ounce of coffee, that is, *four times* the weight of the tea, consequently one pound in a month, and twelve pounds in the year.

It is common to give out one of the small divisions in a cake of chocolate (of which there are eight in a quarter of a pound) to make one dish: two at least would be requisite for a breakfast; and they would weigh an ounce, which is *eight times* as much as the tea, and *double* the weight of the coffee. The consumption of the month would be two pounds; and, of the year, twenty-four.

From hence it is plain, that, if tea is charged with duties and excise to the amount of 2 *s.* $10\frac{1}{2}$ *d. per* pound, which is actually the case, roasted coffee, of which *four times* the quantity is necessary for the same purpose, ought to pay but *one fourth* of that sum, that is to say, 8 *d.* and $\frac{5}{8}$ths *per* pound; and chocolate, *one eighth* part, or 4 *d.* and $\frac{5}{16}$ths: and, if the duty and excise should continue to be paid on the coffee before it is roasted, they ought to be near one quarter less, because it loses of its weight, in roasting, 24 lb. on 112 lb. The loss of weight on the chocolate nut is likewise 18 lb. on an hundred. Allowing for which, the duty on roasted coffee will be reduced to $6\frac{3}{4}$ *d.* (and chocolate should not pay quite $3\frac{3}{4}$ *d.*) instead of 33 *s.* 6 *d. per* hundred on plantation coffee at the custom-house; that is, 4 *d. per* pound, and 1 *s.* 6 *d. per* pound, at the excise; in all 22 *d.* It must be afterwards roasted, which reduces 112 lb. to 88 lb.; and 22 *d.* upon raw coffee is full 2 *s.* 5 *d.* on the roasted.

On landing chocolate-nuts, 11 *s.* $11\frac{1}{2}$ *d. per* hundred is paid, which is $1\frac{1}{4}$ *d. per* pound; and the excise on the chocolate, when made into cakes, is 2 *s.* 3 *d. per* pound more: therefore, the duty upon a pound of this article is nearly the same as on coffee, though *double* the quantity is required for a breakfast. The duties on tea are as follow: twenty-five *per cent. ad valorem*, paid by the East-India company, and as much by the buyer, making together fifty *per cent.*; and that, on the average value of tea, is $22\frac{1}{2}$ *d. per* pound; for, according to the best information from the tea-brokers, 3 *s.* 9 *d.* is the *medium* price at the sales; the high-priced sorts, the hyson and souchon, not being a tenth part of the importation. Besides the above duties, there is 1 *s. per* pound excise; in all 2 *s.* $10\frac{1}{2}$ *d. per* pound on 3 *s.* 9 *d.* value, which is *eighty per cent.*: while plantation coffee, which is rated at 15 *d.* though in reality it sells but for 6 *d.* and chocolate-nuts, that are nearly of the same value, pay 2 *s.* 5 *d. per* pound, which is *four hundred and eighty per cent.* Nothing more is wanting to prove the assertion in regard to the duties, but the bringing into one point of view the sums that

 government

hoed frequently, and kept very clean about the young plants, until they rise to moderate height; otherwise, they are apt to be destroyed by

government would receive, on each person's annual consumption, upon the footing that has been proposed.

The Consumption of a Year.

	l.	s.	d.
On 3 lb. of tea, valued at 3*s.* 9*d. per* pound, which is - - - -	0	11	3
The duty and excise, at 2 *s.* 10½ *d.* amount to - - - -	0	8	7½
On 15¼ lb. of unroasted coffee, which, when fit for use, would be reduced to 12 lb. the prime-cost, at 6 *d. per* pound, is - - - - -	0	7	7½
Supposed duty on the 15¼ lb., at 6¾ *d. per* pound, is - - - -	0	8	6 13/15
On 29¼ lb. of chocolate-nuts, which would make 24 lb. of chocolate, the prime-cost of the 29¼ lb., at 6 *d. per* pound, is - - - - -	0	14	7½
Supposed duty thereon, at 3½ *d. per* pound, - - - - -	0	8	6

The duties, payable at present on the same quantities of the two last articles, stand thus:

	l.	s.	d.
On 15¼ lb. of unroasted coffee, equal to 12 lb. when fit for use, at 1 *l.* 13 *s.* 6 3/20 *d. per cent.* which is about ¼ *d. per* pound, - - - - - -	0	5	1
Excise on the same, at 1 *s.* 6 *d. per* pound, - - - - -	1	2	10½
	1	7	11½
On 29¼ lb. of cacao-nuts, at 11 *s.* 11½ *d. per* hundred weight, *i. e.* at 1¼ *d. per* pound,		3	0½
Excise on that quantity made into chocolate, producing 24 lb. at 2 *s.* 3 *d. per* pound,	2	14	0
	2	17	0½

To prevent all objections to this proposal for lowering the duties and excise on coffee to 6¾ *d.*, and on cacao to 3¾ *d. per* pound, the following plan is submitted, for compensating to government any difference which may be supposed to arise from this diminution of the duties, and likewise for putting an entire stop to the smuggling of coffee, and chocolate, or cacao.

1. To let the custom-house duties on plantation coffee remain as they are.

2. To convert the excise, now paid upon foreign coffee, into a duty, not to be drawn back upon exportation; for that would certainly give occasion to great frauds. This will make no difference to government on Mocha coffee.

3. To take off the *whole excise* on coffee and chocolate; and make up any supposed deficiency on the plantation coffee and chocolate, by a proportionable tax on licences for keeping a coffee-house, or any houses where coffee and chocolate may be sold ready-made. Persons, who keep such houses, will have no reason to complain of the tax, as they will be able to purchase these articles, of *British growth*, at a very low rate. Nor will it be any hardship upon their customers, because there will be no occasion to raise the price to them. Another consideration, in favour of this plan, is, that the payment of the tax cannot be evaded, and will be easily levied. The reduction of the duties would bring all, that is shipped from our colonies, to a regular entry; at least, this is very probable, as there would then be no temptation left for smuggling it. It remains only to consider, what difference the increased consumption of coffee and chocolate, in lieu of tea, would make with respect to navigation. The East-India company has lately agreed to pay 26 *l.* 10 *s. per* ton for freight from China. One ton answers the same purposes as four tons of coffee; and the freight on that quantity, at the usual rate of 5 *l.* 10 *s. per* ton, would be 22 *l.*, which is something less than on the proportional quantity of tea. But the difference is very considerable in favour of chocolate: and there are most material advantages attending the West-India navigation, in preference to the East; particularly, that our brave sailors are less liable to fatal distempers in such a voyage, having no occasion to remain for so long a continuance aboard a ship; and, what is of great importance, should their king and country, on a sudden emergency, need their assistance, it may soon be commanded. On the contrary, when once a ship from China has left our ports, we can expect no service of that kind from the crew for eighteen months, however much they may be wanted.

The seasonable interposition of government may yet not only save the coffee plantations in our islands from ruin, but put them upon a more flourishing footing than ever. Nothing more seems necessary than to regulate the duties upon an equitable footing; and, if coffee and chocolate should pay

by caterpillars. It grows from four to ſix feet, and produces two crops annually; the firſt in eight months, from the time of ſowing the

pay a proportionable duty with tea, it may be aſſerted, that the revenue cannot be leſſened by the former taking place of the latter. On the contrary, as the Weſt-India produce is all paid for in our manufactures, the ingenious artiſt, the tradeſman, and huſbandman, at home, muſt be better enabled to pay taxes: the duties and exciſe upon coffee and cacao being reduced, more than double the quantity (eſpecially of the former) would be conſumed. Such an enlarged conſumption would make it the intereſt of the planters to cultivate the trees with more care. It is certainly of great moment, that the leſſer planters ſhould be able to gain a ſubſiſtence by the cultivation of theſe ſmall articles, which require but little ſtock, and no great expence for Negroes. No little planter, generally ſpeaking, can go upon ſugar with advantage; the expence of Negroes, cattle, works, and other requiſites of a ſugar-plantation, are beyond his reach. If he has any landed property, by one means or other he is often obliged to ſell it to his richer neighbour, and remove to ſome other country, leſs unfavourable to contracted circumſtances. Thus the iſlands are gradually thinned of white inhabitants, and become leſs able to quell the inſurrections of their Negroes, or to oppoſe any hoſtile invaſion. Whatever articles of product, therefore, tend to divide the landed property, to multiply the diſtribution of it, and conſequently furniſh ſubſiſtence to a greater number of white inhabitants, certainly muſt add to the ſtrength and ſecurity of the iſlands.

Manner of preparing the Infuſion, and its uſeful Qualities.

The French inhabitants in the Windward Iſlands always make uſe of coffee for their breakfaſt, taking equal quantities of the infuſion and boiled milk (or rather milk that is ſcalded); and, after their dinner, they commonly drink a cup of coffee without milk; and they have, in general, excellent health, and a fine flow of ſpirits: whereas the Engliſh ſubjects, whom it is difficult to wean from prejudices, ſtill perſiſt in the uſe of tea; and, though they enjoy a good ſtate of health, do not appear to have half the vivacity of the French in the ſame iſlands. If the coffee is old and well-roaſted, and immediately covered up, ſmoaking-hot (when the roaſting is finiſhed), in a bowl, or cup, to prevent the fine, volatile particles and flavour from going off; if then, when cold, it is ground, and made properly with boiling, good water; it is looked upon to be in its higheſt perfection. The better ſort of French, in all the iſlands, make a practice of taking a cup of equal parts, coffee and ſcalded milk, with a cruſt of bread, almoſt as ſoon as they get out of bed in a morning: and the reaſons they give for this cuſtom are, that it clears the brain, enlivens the ſenſes, cleanſes the ſtomach, throws off any rheum or fortuitous matter that may be lodged about the head, ſtomach, or lungs, from foul vapours; and they likewiſe ſay, that it prevents, and even cures, the gravel. The Turks alſo ſet the higheſt value upon good coffee, on account of its exhilarating qualities. Surely then it muſt be preferable to tea, which has quite contrary effects.

Coffee, made in the following manner, is pleaſing to moſt people, and is much preferable to tea, or to coffee made in the uſual manner, for breakfaſt. "Let it be made in the uſual manner, only a "third part ſtronger; let as much boiling milk be added to the coffee, before it is taken from the "fire, as there is water; let it ſettle; drink it with cream, or without, as may be moſt agreeable." Were the poor and middling people enabled to procure this, it would be much more nouriſhing and beneficial than the wretched beverage they indulge themſelves with of the moſt ordinary teas. Doctor Fothergill mentions, that, although he was fond of tea, he found it unfavourable to his health. He then tried coffee, made in the manner above-recommended, and has drank it almoſt conſtantly, many years, without receiving any inconvenience from it. He thinks it difficult to determine how far the French cuſtom, of drinking it immediately after dinner, is right; but it can admit of no diſpute whether a diſh of coffee, or a bottle of wine, may *then* be leſs prejudicial to health. It is leſs injurious, however, to drink coffee immediately after dinner than later in the evening; for it moſt certainly promotes watchfulneſs, or, in other words, ſuſpends the inclination to ſleep. Was it ſubſtituted, inſtead of the bottle, immediately after dinner, it ſeems more than probable, that many advantages would flow from it, both to the health of individuals, and general œconomy: and it ſeems not improbable, but, by deferring coffee or tea ſo late in the evening as is uſually practiſed, we interrupt digeſtion, and add a new load to that already in the ſtomach, which, after a full meal, is not a matter of indifference.

To conclude. In reſpect to real uſe, and as a part of our food, there is no evidence to induce us to think that coffee is inferior to tea.

the ſeed; the ſecond, within four months after the firſt; and the produce of each tree is reckoned about one pound weight. The South-ſide planters generally cultivate it in May, and gather, in the January following; but, unleſs they have rain between January and April, which more often fails than happens, they rarely make much of the ſecond crop; for which reaſon, September ſeems to be a fitter ſeaſon for planting the ſeed, as it will have certain rains in October, to eſtabliſh its vegetation; and, being gathered about May, the ſhowers, which may probably fall in the ſucceeding weeks, promiſe to enſure a tolerable ſecond crop. The ſeed is ſet, in regular lines, at the diſtance before-mentioned, ſo as to let the branches ſpread freely, which however are ſometimes pruned, if the ſoil be too rich, and their growth over-luxuriant; and they are likewiſe pruned, or trimmed, conſtantly after the firſt gathering. When the pods are come to maturity, they burſt open, and diſcloſe their ſeeds, intermixed with the flock, or wooll. When great part of the pods are thus expanded, the crop begins, the wooll is picked, and afterwards cleared from the ſeeds by a convenient machine, of very ſimple contrivance, called a gin, compoſed of two or three ſmooth, wooden rollers, of about one inch diameter, ranged horizontally, cloſe and parallel to each other, in a frame; at each extremity they are toothed, or channeled longitudinally, correſponding one with the other; and the central roller, being moved with a treadel, or foot-lath, reſembling that of a knife-grinder, makes the other two revolve in *contra* directions. The cotton-wooll is laid, in ſmall quantities at a time, upon theſe rollers, whilſt they are in motion, and, readily paſſing be-

In reſpect to national œconomy, the benefit of our colonies, and the lives of the ſeamen, every circumſtance concurs to give coffee the preference. It is raiſed by our fellow-ſubjects, paid for by our manufactures, and the produce ultimately brought to Great-Britain.

The great obſtacle to a more general uſe of coffee is the very high duty and exciſe.

Leſſening theſe impoſitions would not leſſen the revenue. Smuggling would be diſcouraged; and an increaſed conſumption would make up the deficiency to the treaſury.

The planters would be induced to cultivate it with more attention, and with more ſkill, if there was a better market for it.

As the leſſer planters might be able to ſubſiſt by raiſing this, and other ſmall articles of Weſt-India produce, their numbers would increaſe, and add to the defence and ſecurity of the ſeveral iſlands; more eſpecially ſince the cultivation of ſuch articles would be attended with no greater labour than what Europeans are capable of enduring without any peril to their lives.

Upon theſe various conſiderations, it is to be hoped, that government will ſee its error before it is too late; and, by relieving the planters from the immoderate burthens laid upon them, which are ſo ruinous to their induſtry, prevent the cultivation of theſe articles from being wholly loſt to our iſlands, the latter weakened and diſcouraged, and the revenues of Britain impaired, as they muſt be, if coffee, cacao, and cotton, ſhould no longer be worth the expence and labour of being attended to in our own Weſt-India ſettlements.

tween them drops into a ſack, placed underneath to receive it, leaving the ſeeds (which are too large to paſs with it) behind. The wool thus diſcharged from the ſeeds, comes afterwards to be hand-picked, and cleanſed thoroughly from any little particles of the pods or other ſubſtances which may be adhering to it. This is a tedious though neceſſary operation; but is eaſily performed by children or invalids, who are fit for no other work: it is then ſtowed in large bags, where it is well trod down by a Negroe, whilſt it is thrown in, that it may lie cloſe and compact, and the better to anſwer this purpoſe, ſome water is every now and then ſprinkled upon the out-ſide of the bag. This operation is performed in a ſhady place, that the moiſture may not evaporate too ſuddenly. The weight of a marketable bag is uſually 300 lb. and that weight *per* acre may be expected from plants.

To bring therefore the profit of this cultivation into view, we may ſuppoſe a planter poſſeſſed of ten able Negroes, and twenty acres in cotton, the produce may be rated as follows:

Acres.	Number of Plants.	Produce lb. w.	Bags.	Price Sterl. groſs *per* lb.	Groſs Profit. £. Sterl.	
20	6000	6000	20	1 s.	300	1ſt Crop.
	ditto.	3000	10	ditto.	150	2d Crop.
		9000	30	Total	£. 450	*per ann.*

In the pariſh of Vere, 240 *lb.* wt. *per* acre, is reckoned tolerably good yielding; this makes the produce of twenty acres 4800 *lb.* wt. which falls ſhort of the above computation; for an average therefore of rich and poor land, good or indifferent ſeaſons, we may take 270 *lb.* *per* acre.

One Negroe labourer will gin from 50 to 60 *lb.* *per* day. Three Negroes will therefore gin the above quantity in about 54 days at a medium; conſequently, ſuch a planter will have leiſure ſufficient, during the year, for attending to corn, proviſions, and other articles.

All our fuſtians, callicoes, Mancheſter velvets, *&c.* are made up by the help of this commodity; and it therefore contributes to maintain a very capital part of the commerce of Britain and Ireland; for theſe ſtuffs are in demand in all quarters of the world to which our trade extends; and particularly in thoſe countries which are ſituated within the Tropics. Nor can there be any ſort of cloathing better adapted to hot climates; for they readily imbibe the moiſt vapours of the ſkin, without repelling them like linen; nor do they decay ſo ſoon.

It

It is ſuppoſed, that not fewer than 120,000 perſons are conſtantly employed in England in different branches of the manufacture of this ſingle ſtaple. There is but little of it worked up at the places of its growth, except in the fabric of hammocks; and even this little branch has never yet reached Jamaica. In ſome parts of the iſland, as in Vere, a few induſtrious houſewives make knit ſtockings with it, for their families; and ſome few planters ſpin their own wick for lamps in crop time; but, probably, not a third of a bag is ſpent in this way, as the greater number buy what is imported from Great Britain.

In this example we have a proof of the great comparative value of the Weſt India colonies, which do not rival Great Britain in manufactures, over thoſe which are dangerous competitors with her. This diſparity begins from the very verge of the Tropic, and grows more viſible, the further we recede from thence to the Northwards. In the *Carolinas*, I have been informed, that the planters have in general ſo great a number of looms at work, as to be able to cloath their black and white labourers with a coarſe fabric of cotton cloth: they ſave, by this means, a heavy annual charge, being the *growers*, as well as *manufacturers*. If the Jamaica planters were to purſue the ſame ſcheme, and each to ſet up a loom in his houſe, the loſs to Britain would be near 300,000 *l.* ſterling *per ann.*; but ſuch eſtabliſhments only take effect in very populous colonies, where the people are too poor to buy, can afford cheap labour, are not over nice in their cloathing, and cannot give their time or hands to more lucrative purpoſes.

In Jamaica it is not worth while to enter upon ſuch a manufacture; becauſe, upon computation, it would come to a higher price than a better fabric imported from the mother country; becauſe labour can be applied to more gainful works; becauſe the inhabitants are fond of being well dreſſed; and, laſtly, have a variety of ſtaples, which require too conſtant attention to give them leiſure for attending the loom.

The Indians of the iſland, when it was diſcovered by Columbus, manufactured this article into hammocks and apparel. Nature having denied fleeces to the ſheep of theſe climates, this vegetable wool ſeems to have been given them as a ſubſtitute; and it is certainly the beſt appropriated, and wholeſomeſt material, for a Tropical dreſs.

The

The ſeeds are eſteemed efficacious in the bloody flux; and an oil is obtained from them by expreſſion, which ſupplies the boiling-houſe lamps on ſome plantations.

5. Cacao. *Theobroma.*

This tree once grew ſo plentifully in Jamaica, that the inhabitants flattered themſelves, it would become the ſource of inexhauſtible wealth to them; in 1671 there were ſixty fine walks in bearing, and many new ones in cultivation; but ſome years afterwards they were all deſtroyed at once, as it is ſaid, by a blaſt, which pervaded the whole iſland; ſo that they were never afterwards recovered; and, at preſent, there are but very few; the greateſt diſcouragement in going upon this article being the extreme tenderneſs of the young plants, and the length of time they require to come to maturity; which moſt ſettlers are too ſanguine and impatient to wait for, but rather apply to other commodities, which make a quicker return, although it is certain that a good cacao walk, once eſtabliſhed, is far more profitable, and demands fewer labouring hands, than almoſt any other marketable Weſt India product. There are many trees ſtill in the iſland, ſcattered about in the woods, and found chiefly in rich, cool bottoms, that are ſheltered from the winds. As the cacao is a very capital article in trade, and may be produced as ſuch in this iſland, I ſhall lay down the beſt rules, for the culture of it, that I have been able to meet with.

The moſt proper ſoil for the plants is a moiſt, rich, and deep earth; for they generally ſend forth one tap-root, which runs very deep into the ground; ſo that, whenever they meet with a rocky bottom near the ſurface, they ſeldom thrive, nor are long-lived. A rich glade of brick-mould near water is perhaps the beſt ſituation of any. Before the plantation is begun, the ground ſhould be well prepared, by digging it deep, and clearing it from the roots of trees and noxious plants. When the ground has been thus prepared, the rows ſhould be marked out with a line. Some of the largeſt, fineſt cods, full ripe, are then to be ſelected; and, after being kept two or three days from the time of their gathering, they are opened, the nuts taken out, and thrown in a ſmall veſſel of water; ſuch as ſwim are to be rejected; the others are waſhed clean from the pulp, the outer ſkin taken off,

and

and they are ſuffered to lie in ſhallow water, till they appear juſt ready to ſprout. A hole is then made about one foot diameter, and ſix inches deep, in the ground prepared for their reception. A plantain leaf is laid in the hole, ſo as to retain a length at one end of about eight inches above ground; the mould is lightly rubbed into the leaf, till the hole is filled; and the nuts are afterwards ſet triangularly in it, three in a hole, at two inches depth, care being uſed to place them with their ends perpendicular; they are to be covered with mould, looſely ſhaken over, and the extremity of the plantain leaf folded down, and kept in that poſition, with a ſmall ſtone laid upon it. In about eight or ten days time the plants will appear above the mould; the plantain leaf is then raiſed, and ſome thatch tree, or other ſtrong leaves, are ſet round, to ſhade and protect the young plants from the ſun. Small hurdles, of about eighteen inches, made in baſket work, or reeds bundled together, would perhaps be preferable, as they are fixed more firmly by their ſtakes in the earth, ſo as not eaſily to be thrown down by the wind, and bruſh off the ſeed leaves of the plants; for theſe are only the tender divided lobes of the kernel, and the loſs of them would wholly put an end to their further growth. Theſe ſkreens are continued about ſix months, after which, the Spaniards take a branch of *coral bean tree*, and ſet it S. S. W. (in Jamaica it ſhould be N. N. E.) at a ſmall diſtance from the plants, and intermixed between the rows. Theſe ſlips will grow up with the cacao, and defend it from blowing, violent weather.

The young plants are ſo ſuſceptible of injuries from ſtrong winds, a too hot ſun, or great droughts, that they cannot be too well ſecured againſt ſuch accidents. For this reaſon, the moſt ſheltered ſituation muſt be choſen for them. The winds moſt to be feared in Jamaica are the N. E. S. E. and Southerly. Some defend the young plants, by planting plantain ſuckers about two months, or caſſada ſix weeks, before the ſeeds are ſet. They plant the nuts in the rainy ſeaſon, or, at leaſt, in cloudy weather, or when rain is expected; and, in caſe the weather proves too dry and ſcorching after the young cacao makes its appearance above ground, they contrive to water it, by laying pieces of rag, cotton, or even weeds, thoroughly wet, gently round the ſtem, and let them reſt there, till the earth has abſorbed a conſiderable portion of moiſture; a watering-pot, with a roſe head of

very

very ſmall holes, would, no doubt, be leſs troubleſome, and perform this operation much better; but the water uſed for the purpoſe ſhould be taken from a river, and ſuffered to ſtand for ſome hours in a tub or ciſtern, previous to its being uſed. Plantain trees afford the moſt natural and agreeable ſhade for theſe plants, while very young; but, as they riſe, they ſhould be furniſhed with a more ſubſtantial defence againſt the inclemencies of the weather, till they attain to full perfection; and it ought even then to be removed with caution.

If the walk is extenſive, a few large timber-trees may be left on the outline, or ſkirts, here and there, to break the force of the wind. The Spaniards ſet orange-trees, but they are, I think, too ſlow in their growth. I have ſeen the horſe caſſia, and mammee, uſed for this purpoſe; and they ſeem better adapted, from the largeneſs of bulk, and thick ſhady leaves.

When the cacao is ſix months old, the planter, from this period, muſt not be too fond of cleaning the walk from graſs and herbage; becauſe they keep the ground cool; but all creeping, climbing plants, and ſuch weeds as grow high enough to overtop the cacao, ſhould be deſtroyed. The diſtance for laying in the ſeeds may be about ſixteen or eighteen feet from tree to tree.

The reaſon for putting in three ſeeds is, becauſe they ſeldom all ſucceed; or, if all grow, they will not all be equally vigorous; when therefore they are about eighteen inches high, one of the weakeſt and moſt unpromiſing of the three may be drawn up, and thrown away, care being taken not to injure or diſturb the roots of the two remaining. It is found by experience neceſſary to plant the ſeeds where the trees are to remain; for the tranſplanted trees will never thrive, nor bear well, on account, as is ſuppoſed, of the tenderneſs of the tap-root, which, if it be the leaſt injured, will bring on a decay of the tree.

In two years time, the plants, having grown to the height of about five feet, will begin to flower; theſe firſt bloſſoms are always plucked off; for, if ſuffered to remain, and produce fruit, the vigour of the trees will be greatly impaired, and they will never bear well afterwards. Their fruit is not allowed to remain for maturity till the third year, and then only ſo much as ſeems proportioned to the ſtrength of each tree. By theſe precautions they will afterwards yield a larger,

 better

better nourifhed fruit, and hold their vigour much longer. In the fourth year they are permitted to bear a moderate crop, but fome flowers are generally pulled off from thofe that appear too weak, in order that they may recover their ftrength, before they are old. When planted in a good foil, and properly managed, they will continue vigorous and fruitful for thirty years. They bear two crops a year; the greateft in December or January, the other in May; and from the time when the flowers drop off, to the maturity of the fruit, is about four months. The time of maturity is known by the yellownefs of the pods, and the rattling of the nuts, when the pods are fhaken. The latter are then plucked, the nuts picked out, and leaving the pulp, if any remains upon them, they are expofed every day to the fun, for a month, upon mats, blankets, or fkins [*n*]. It is beft not to wafh off the pulp, as it makes them keep the longer. The pods contain no certain number; they have from ten to twenty, and even thirty nuts; but this depends chiefly on the right training them, during the firft three or four years of the growth. When thoroughly cured, or dried, they are ready for the market.

After a walk is once eftablifhed, it renews itfelf, the roots fending out fuckers, to fupply the place of the old ftocks, when decayed, or cut down.

The produce of one tree is generally eftimated at about 20 lb. of nuts; which, at 5 *l.* Jamaica currency *per* cwt. is worth 1 *l.* A walk of ten thoufand trees will therefore yield a yearly profit of 10,000 *l.* The produce *per* acre in Jamaica has been rated at 1000 lb. weight *per annum*, allowing for bad years.

In poor foils, and under bad management, the produce *per* tree rarely exceeds 8 lb. wt.; and ten thoufand fuch trees will therefore yield 4000*l.* When well cured, the nuts are plump, fmooth, oily, and of a bitterifh tafte, eaten raw.

The chymical oil extracted from them is extremely hot, and efteemed a good embrocation in paralytic cafes; the Mexicans are faid to eat the nuts raw, to affuage pains in the bowels.

The chocolate, fo much and fo juftly preferred by the Weft Indian natives to moft other aliments, is highly reftorative, infomuch, that one ounce of it is faid to nourifh as much as a pound of beef. It is

[*n*] It is ufual firft to lay the pods in heaps to fweat for three or four days before they are opened.

efteemed

eſteemed in all countries where it is known, and is found a ſuitable part of diet for all ages, but in particular agreeable to infants, old perſons, valetudinarians, and ſuch as are on the recovery from ſickneſs; and, prepared with milk, it is highly approved of in conſumptive habits.

From what has been premiſed it appears, that this is not a plant which can be every where cultivated. It will not thrive in the dry, low parts of the South ſide, nor on elevated or rocky ſpots in the mountains. It requires a flat, rich, moiſt ſoil, well ſheltered by ſurrounding heights; which occaſioned Sir Hans Sloan to remark, "that it is but ill living where there are good cacao walks;" for ſuch moiſt, unventilated places are, without doubt, the moſt unwholeſome for mankind to reſide in. Yet, where ſuch glades or ſpots are found, they certainly cannot be turned to any ſort of culture, that will yield more profit; and it does not follow, that, becauſe a ſettler is poſſeſſed of ſuch a ſpot, that he is therefore to live upon it; ſince the ſituation ſuppoſes the neighbourhood of higher ſpots more proper for conſtant reſidence.

Sir Thomas Modiford, about the year 1670, drew a plan for the ſettlement and management of a cacao walk, with a computation of the expence.

At that time, Negroes were bought for two-thirds leſs than the preſent rate; common white ſervants were to be had without wages, and 24*l.* a year was thought ſufficient for the wages and diet of an overſeer. The expence *now*, compared with what it was in his time, is as 700 to 250, or near 3 to 1 more; it is needleſs, therefore, to quote his calculation, but his general directions in regard to forming ſuch a plantation, may be of ſome ſervice.

He propoſes ſix able Negroes, and four white ſervants, with one overſeer, and the land in wood. The firſt operation, after providing proper dwelling-houſes, is to fall, clear, and plant four acres in potatoes; which, if the work is begun in the middle of March, may be very eaſily performed with ten hands, by the middle of April. After this, they may continue to fall, clear, and ſet plantain ſuckers until the latter end of February in the following year. In this ſpace, which is above ten months, they may have cleared and planted 21 acres, beſides keeping clean the ground that is planted. A good ſtock of proviſions being

being now at hand, ten more hands are to be purchaſed; and in the courſe of the month of March, the cacao nuts are planted between the rows of plantain trees, then about five or ſix feet high, ſo as to have the whole 21 acres in cacao by the firſt of June.

Theſe, in five years, (according to Sir Thomas Modiford) will produce compleat crops, and at 1000 lb. wt. *per* acre, will yield 21,000 lb. wt.; worth at the Jamaica market (at the preſent prices) from 5*l.* to 6*l.* *per* cwt., 1050*l.* to 1260*l.*

The whole of this ſmall plantation, we find, is compleated in about fifteen months; and during the five years that the cacao requires to attain maturity, annual additions of ſome acres may be made to the walk, corn may be planted, ginger, or coffee; hogs and ſmall ſtock bred; and various other kinds of buſineſs attended to, for a preſent gain; and when once the walks are come to perfection, the largeſt may be managed, and the crop gathered and cured, with very few hands.

6. Ginger. — *Zinziber vel Amomum Scapo nudo, Spicâ ovatâ.*

This is propagated by the ſmaller pieces, prongs, or protuberances of the root, each of which throws up two different ſtems; the firſt bears the leaves, and riſes to the height ſometimes of three feet, or upwards, but its uſual growth ſeldom exceeds 18 inches. It thrives beſt in a rich, cool ſoil, and, therefore, what has been recently cleared from wood, is well adapted to the culture of it, more eſpecially, as it is ſuppoſed to be a great impoveriſher of land. In ſuch a ſoil, it grows ſo luxuriantly, that a hand, or large ſpreading root, will weigh near a pound. It is, however, remarked, that what is produced from a clayey, tenacious ſoil, ſhrinks leſs in ſcalding, while ſuch as is raiſed in the richer, free, black moulds, loſes conſiderably in that operation. The land intended for the cultivation of it, is firſt well cleared with the hoe, then ſlightly trenched, and planted about the month of March or April. It attains its full height, and flowers about Auguſt or September; and fades about the cloſe of the year. When the ſtalk is entirely withered, the roots are in the proper ſtate for digging. This is generally performed in the months of January and February. After being dug, they are picked, cleanſed, and gradually ſcethed or ſcalded in boiling water, they are then ſpread out, and expoſed every day to the ſun, till ſufficiently dried; and after being divided into parcels of about

100 lb.

100 lb. wt. each, they are packed in bags for the market: this is called the black ginger. The manner of ſcalding the roots is as follows: a large pot or copper is fixed in the field, or ſome convenient place, which is kept full of boiling water; the picked ginger, being divided in ſmall parcels, is laid in baſkets, and plunged alternately in the water, where it is ſuffered to ſtay for a ſpace of ten or fifteen minutes; it is then ſpread on a platform for drying; but care is taken during the proceſs, to change the water ſo ſoon as it becomes much impregnated with the juices of the root.

The white ſort differs but little from the black roots. The difference there is, ariſes wholly from the methods of curing them; the white is never ſcalded, but inſtead of this eaſy proceſs, they are picked, ſcraped, and waſhed, one at a time, and then dried; all which requires too much pains and time for any real advantage to be gained in the properties; though, being made more agreeable to the eye, the price of the white is much higher at market.

When the root is intended for a ſugar preſerve, it is dug while tender, and full of juice; the ſtems at this time rarely exceed five or ſix inches in height; the root is carefully picked, and waſhed, and afterwards ſcalded, till it is ſufficiently tender; it is then put in cold water, and peeled and ſcraped gradually. This operation may laſt three or four days, during which it is commonly kept in water, and the water frequently ſhifted, as well for cleanlineſs, as to extract more of the native acrimony. After this preparation, it is laid in unglazed jars, and covered with a thin ſyrup, which in two or three days is ſhifted, and a richer put on; this is ſometimes again removed, for a third, or fourth; but more than three are ſeldom requiſite. The ſhifted ſyrups are not loſt, for in Jamaica they are diluted with water, and fermented into a pleaſant liquor, called cool drink, with ſome mixture of the chaw-ſtick, lignum vitæ, and ſugar.

A ginger plantation, which ſhould alſo contain ſufficient paſturage and proviſion, may require about 146 acres; of which, 50 being allowed for ginger, may produce about 140 lb. *per* acre, in all 7000 lb. wt., or 70 bags of 100 lb. each, which at 25 *s.* currency *per* cwt., is 87 *l.* 10 *s.* = 62 *l.* 10 *s.* ſterling.

Bags.

	Bags. 1 cwt. each.	Casks. 600lb. each.	lb.
In the year 1738 this island exported, which is the largest quantity ever shipped from it in one year.	20,933	817	8864
In 1748, it fell to —— ——	1961	79	
And, at a medium then taken of three years, it was found to be *per* ann.	1992	48	1300

Which is not quite one-eighth of the export of 1738.

At present, the export is very small, this article not being so much in demand at the British market as it formerly was, when large quantities were re-exported to Russia and Germany. Yet the price now (or lately) given, seems to make it a commodity worth attending to, especially the preparing of the white sort, which as it requires more pains, so it is much higher prized; the medium of this sort being lately at 57 *s.* 6 *d.*, and of the black 30 *s.* sterling *per* cwt. The cultivation of it will not answer so well, as some other commodities, in old lands; but in fresh-opened soil, in a wet part of the country, it might pay well for the planting, by the largeness of its roots in such a situation, and by lessening the exuberant richness of such land, which makes it unfit for the sugar cane.

The preserved ginger, if exported to Great Britain, is liable to so high a duty as a succade, that the remitter cannot fail of losing considerably by his adventure. What is sent, therefore, in this form, is chiefly in presents.

Whether in its natural state or candied, this root is esteemed a good remedy against the colic, loosenesses of the belly, and windy disorders. It strengthens the stomach, helps digestion, and is often added as a corrector to purges; its use in culinary preparations is well known.

7. Pimento, Jamaica Pepper, All-Spice. — *Caryophyllus Foliis lanceolatis oppositis, Floribus racemosis terminalibus, et axillaribus.*

This tree rises to the height of thirty feet, and is found almost every where in the woods of Jamaica; it is also cultivated in many parts of the island, but chiefly the North side, and planted in regular rows.

It begins to fructify in three years after it is first planted, but does not arrive at maturity under seven, and then it repays very abundantly the patience

patience of the planter. It ſeems particularly fond of a white marley, or chalky ſoil, having a ſhallow ſurface of mould, and of the rocky lands, which can ſcarcely be put to any other uſe; but it requires refreſhing ſhowers in its infant ſtate, and, therefore, is trained with difficulty in the moſt Southern hills near the coaſt. It grows luxuriantly, and bears well, in every richer mould, on a gravelly ſubſtrate, and rarely fails expectation, planted any where, except the parts mentioned; but when cultivated in places which are ſubject to drought, the *berries* (and not *young plants* brought from inland mountains) ſhould be ſet immediately before the autumnal ſeaſons.

It flowers in June, July, and Auguſt; but in ſeveral places ſooner or later, according to their ſituation, and different ſeaſons for rain; and after it flowers, the fruit ſoon ripens, though earlier in open grounds, than in thick woods. It is generally gathered in July, while green; for if the berries are ſuffered to remain till they are full ripe, they will not cure. They are, when ripe, of a dark purple colour, and full of a ſweet pulp, which the birds devour greedily, and muting the ſeeds afterwards, propagate theſe trees in all parts of the woods. It is thought that the ſeeds paſſing through them in this manner, undergo ſome fermentation, which fits them better for vegetating, than thoſe gathered immediately from the tree; and I believe this is the fact, for the ripe berries will take with more certainty, after being laid together ſome few days to ſweat, than when immediately put in the ground, or kept ſeparate till the pulp is dried.

They are gathered in their green ſtate, by twiſting off the twigs either with the hand, or a pole cleft at one end. The berries are then ſeparated from the leaves, and other particles, and laid on cloths ſpread over the barbacues, or terraced floors raiſed a little above the ſurface of the ground, incloſed with an upright ledge of eight or ten inches in height, and divided by tranſverſe partitions into four or more ſquare compartments, that each may contain a day's picking. During the firſt and ſecond day they are turned often, that the whole may be more expoſed to the ſun; but when they begin to dry, they are frequently winnowed, and laid in cloths to preſerve them better from rain and dews, ſtill expoſing them to the ſun every day, and removing under cover every evening, till they are ſufficiently dried, which uſually happens in ten or twelve days, and is known by the darkneſs of their com-

plexion, and the rattling of the feeds; they appear at this time wrinkled, and have changed from green to a very dark brown; and in this ſtate, being ready for the market, they are ſtowed in bags or caſks. Some planters kiln-dry them with great ſucceſs, and it ſeems indeed a moſt eligible method, where, from the abundance of the crop, diſpatch, and ſecurity againſt rain, are very eſſential [*o*].

Some of theſe trees are obſerved to bear no fruit, which has led ſeveral perſons to conjecture, that there are male and female trees; but Dr. Browne refutes this notion; aſſerts they are hermaphroditical, and ſuppoſes, that if thoſe called males were lopped and broken like the reſt, for one or two years, they would produce equally well.

As there is ſo great an affinity between this and the true clove, it has been propoſed, as worthy of trial, if the fruit, when firſt formed, or the flowers picked off the tree, and dried, might not anſwer the ſame purpoſe as the Aſiatic; at leaſt, it might anſwer as a good *ſuccedaneum* for that ſpice, and deſerves the experiment, as being the growth of our own colony. The quantity exported from Jamaica may be eſtimated, one year with another, at 2,000,000 of pounds, or upwards, which at 7 *d. per* lb. is worth 58,333*l.* ſterling [*p*].

A walk once formed, is attended with little or no labour, or expence, till the time of gathering, and this is performed with very few hands; nor is the land uſeleſs for other purpoſes; for under the trees is generally good paſturage for cattle, horſes, or ſheep. Some who poſſeſs a ſugar plantation, as well as a walk, contrive to attend both; the pimento crop coming in, juſt after the ſugar crop is finiſhed.

The more odoriferous and ſmaller the berries are, the better they are accounted at market. The leaves and bark are full of aromatic inflammable particles, for which reaſon the growers are extremely cautious not to ſuffer any fire to be made near the walks, for if it once ſhould catch the trees, they would conſume with great fury. Nothing can be more delicious than the odour of theſe walks, when the trees are in

[*o*] As a proof of the ſuperior utility of this proceſs to that of ſun-drying, no leſs than 2000 lb. wt. has been gathered, kiln-dried, and ſhipt in the ſpace of twenty-four hours. In curing, it loſes about two-thirds of its weight.

[*p*] The duty and charges amounting to 2 ½ *d. per* lb., there remains for clear profit only 4 ½ *d.*, which by moſt of the planters is thought too little to anſwer the capital, and the labour employed upon this article; but I queſtion, if this opinion will not appear rather unreaſonable; the only point which ſeems to give it ſome juſtification is, that the crops are very precarious.

bloſſom,

blossom, as well as at other times; the friction of the leaves and smaller branches, even in a very gentle breeze, diffusing a most fragrant and exhilarating scent through the circumambient atmosphere; they are esteemed, therefore, the most wholsome places of residence. The berries have a resemblance in smell and taste to cloves, juniper-berries, cinnamon, and pepper, or rather a peculiar mixture, somewhat akin to them all; whence their name of *all-spice*. It is deservedly esteemed the most temperate, mild, and innocent, of all the common spices, and fit to come into more general use, instead of the Eastern commodities of this kind, which it far surpasses, by promoting digestion, attenuating tough humours, moderately warming and fortifying the stomach, expelling wind, and doing other friendly offices to the bowels.

Distilled with water *per vesicam*, it yields a very fragrant chemical oil, which sinks to the bottom of the water like oil of cloves.

A decoction of the leaves, used by way of fomentation, has relieved in rheumatic aches and pains in the bones. One of the principal advantages arising from a pimento plantation is, that the crop lasting only from two to three months, the Negroes may be profitably employed in any other branch during the remainder of the year.

The yielding *per* acre is computed about one thousand pounds weight, clear profit about 18*l.* 15*s.*

8. Wild Cinnamon. — *Canella alba*, or *Bastard Cortex winteranus.*

This tree is very common in all the lower woods and rocky hills of the island, growing without any care, and propagated chiefly by the birds. For the berries, like those of the pimento and other aromatic plants, grow soft and pulpy when ripe, and lose all that pungency that is peculiar to them in their immature state; they are therefore greedily devoured by the wild pigeons, and other feathered inhabitants of the woods, who disperse the seeds in different places with their muting. The bark, which is the *canella alba* of the shops, consists of two parts, the outer and inner; the outward bark is as thin as a milled shilling, of a whitish ash, or grey colour, with light spots here and there interspersed upon it, and several shallow furrows of a darker colour running variously through it, and making it rough; the inward bark is much thicker than cinnamon, and twice as thick as the outer coat, smooth, and of a lighter complexion, of a much more biting aromatic

 taste,

taſte, ſomewhat like that of cloves, not glutinous like cinnamon, but dry and crumbling between the teeth.

All the parts of this tree when freſh are very hot, aromatic, and pungent to the taſte, reſembling cloves.

It is cured without any difficulty by drying in the ſhade; what is taken from the branches is thinner, and rather milder than from the body of the tree, more nearly approaching to the true cinnamon.

The bark yields by diſtillation a warm, aromatic oil, which is often ſold for, and generally mixed with, oil of cloves; nor is the adulteration thought of any prejudice to the medicine.

It is reckoned a good remedy in ſcorbutic habits; invigorates the blood, is carminative, and ſtomachic. Powdered and ſnuffed into the noſtrils, it is cephalic, and produces a copious diſcharge of rheum.

It is uſed by moſt apothecaries inſtead of the true *cortex winteranus*, and may very well ſupply its place.

Four ounces of the bark, with ſix ounces of *caſſia lignea* (which it very much reſembles), and one gallon of proof ſpirit, (a handful of common ſalt being thrown in to dephlegmate the ſpirit) makes a cinnamon water; and the greater part of what is vended in the ſhops is compounded in this manner.

A quantity of the bark mixed with badly diſtilled rum, is ſaid to diſcharge in part its nauſeous empyreumatic taſte and ſmell, probably by promoting the union of the oil with the ſpirit; but what the proportion is, I cannot direct, having never made the experiment. The export of this article is, at preſent, too inconſiderable to merit notice.

9. Aloe. — *Aloes ſemper vive.*

This plant was firſt brought into the iſland from Bermudas, as it is ſaid; but there are ſeveral ſpecies, and the ſort from which the beſt aloes for the ſhops is produced, has very long narrow leaves, with ſpines on their edges [q].

[q] The ſuccotrine aloe is thus deſcribed. It has long, narrow, ſucculent leaves, which come out without any order, and form large heads. The ſtalks grow to the height of three or four feet, and have two, three, and ſometimes four of theſe heads branching out; the lower leaves ſpread on every ſide, but the upper leaves turn inward towards the centre; the flowers grow in long ſpikes, upon ſtalks about two feet high, each ſtanding upon a pretty long foot-ſtalk; they are of a bright red colour, tipt with green. This ſpecies is not common in Jamaica, but might eaſily be procured from the green-houſes in England. The more common ſort here is, what is called the Barbadoes aloe, which is very inferior to the ſuccotrine, in the opinion of the faculty; as being more acrid in its nature, and rough in its operation.

It.

It is cultivable in the moſt dry, parched, and barren ſoils, where few other vegetables will grow, and thrives wherever it finds mould enough to cover the roots. It is propagated by ſuckers, which ſpring from the roots or ſtumps of the old plants, ſet in little ſhallow pits, at the diſtance of eight to twelve inches aſunder; and care is taken to keep them free from weeds, for ſome time after they are planted.

When they are grown to a perfect ſtate, the labourers go into the field with tubs and knives, and cut off the largeſt and moſt ſucculent leaves cloſe to the ſtalk; theſe are immediately placed in the tubs, and ranged one by the ſide of another in an upright poſition, with the cut part downward, that all the looſe liquor may dribble out at the wound. Some make alſo a longitudinal inciſion from top to bottom, to facilitate the diſcharge. When the juice has been by this means ſufficiently extracted, it is put into ſhallow flat-bottomed receivers, and gradually exhaled in the ſun till it has acquired a due conſiſtence; and thus prepared, it is packed in large dry gourds for exportation. The beſt of this manufacture is ſhining, tranſparent, fat, and in hot weather ſomewhat ſoft; of a yellowiſh, or purple-reddiſh colour, but when powdered is of a ſhining gold colour, with an aromatic bitter taſte, and ſtrong aromatic ſmell, almoſt like myrrh. The planters frequently adminiſter the crude juice to their children in worm diſorders, and with very good effect.

The inſpiſſated juice conſiſts of two parts, a gummous and reſinous; the purging quality reſides in the former, and muſt be extracted by a watery *menſtruum*; the latter is aſtringent, and is extracted with ſpirit of wine.

In general, it is not only a good purge, but uſed as a remedy againſt diſorders of the bile. It has the peculiar property of looſening the body, when given in the ſmalleſt doſes, but when given in too large a doſe, it is apt to create hæmorrhages, and particularly the piles; it is alſo improper for women with child. In moderate doſes it promotes the piles and *menſes*, purges off viſcid humours, opens obſtructions in the bowels, ſtrengthens the ſtomach, helps digeſtion, and provokes an appetite; but it is beſt in cold conſtitutions, and flabby relaxed habits, and after ſurfeits, or hard-drinking, when there is no ſymptom of an inflammation.

The crude juice, drank with milk, heals ulcers in the kidneys and bladder, and deſtroys worms. The Indians firſt compounded it with

myrrh, and formed an admirable medicine (externally applied) for cleanſing and healing the worſt ulcers, even when the bone has been rendered carious; this they called *moceber*; and the tincture in frequent uſe, made from theſe two ſubſtances, was borrowed from this Indian diſcovery.

The method of preparing the common, or horſe aloes, is not ſo tedious, nor does it require ſo much care; for in manufacturing this ſort, all the leaves are cut off, ſevered into junks, and thrown into the tubs, there to lie till the juice is pretty well drained out; they are then hand-ſqueezed, and the liquor mixed with water in the proportion of about one quart of water to ten quarts of juice; after which, it is put into convenient boilers, and evaporated to a due conſiſtence, which may eaſily be known by dropping a ſmall quantity from time to time upon a plate, and obſerving the thickneſs as it cools, it is readily diſcovered by the touch, or the eye, after a little experience: when the juice is brought to the proper ſtate, it is emptied into large ſhallow coolers, and afterwards into ſmall barrels.

As the droſſy reſinous part of the aloes is not ſoluble in water, it has been found, when combined with other mixtures, an excellent preſervative to ſhips bottoms againſt the worm, and was firſt applied to this uſe by the Indians. The ſhips trading in the Eaſt and Weſt Indies are particularly ſubject to the annoyance of this worm, which frequently burrows through all the planks that lie below the ſurface, eſpecially in harbours. The reſult of ſeveral experiments, tried by a perſon at Bermudas upon different ſorts of wood, proves, that a mixture of one ounce of aloes, allowed to two ſuperficial ſquare feet of plank, is the juſt proportion. There are various coats with which it may be incorporated; one of the beſt is, 6 lb. of pitch, 1 lb. of Spaniſh brown or whiting, and one quart of oil; or the like proportions of turpentine, Spaniſh brown, and tallow, may be uſed. Such a coat, incorporated with aloes, will preſerve a ſhip's bottom for eight months, provided it is made tenacious and binding, and is not rubbed off by any accident. About 12 lb. wt. is ſufficient for a veſſel of 50 tons burthen, and ſo in proportion; according to which, about 300 lb. wt. will be found enough for a firſt-rate man of war.

In preparing the aloes to be more effectual for this purpoſe, a larger portion of water may be mixed with the juice when ſet on to boil, viz. two quarts of water to every one gallon of juice; and after ſufficient boiling,

boiling, or when the water is thoroughly impregnated, it ſhould be ſhifted into any commodious veſſel; ſuffered to ſtand for twelve hours, and the water then poured off: by this proceſs, the ſoluble part, or gum, which is of no uſe in the operation, will be extracted; and what remains in ſediment is the droſs and reſin, which being left to remain till it is pretty well dried and brought to conſiſtence, expoſed to the air and ſun, will be fit for uſe.

The aloes, thus prepared, may be worth about 6*l.* ſterling *per* cwt. And at this rate, the expence to a veſſel of 50 tons will be about 15*s.*, and for a firſt-rate ſhip, of 2000 tons, no more than 18*l.*

It is but juſtice to this commodity to recite the effects of one experiment, tried by the perſon before-mentioned. He took ſeveral pieces of oak, cedar, and mahogany plank, of two feet in breadth, and four feet in length, and with particular diſtinct marks to prevent miſtakes, put on different coats, or compoſitions, ſome with, and ſome without, the aloes mixture; theſe were ſuffered to lie under the ſea-water for eight months; and, upon taking them up, he found that where the aloes had made part of the compoſition, there were few impreſſions made; one piece, in particular, was as freſh, ſound, and untouched, as on the day when it was put in; this had been beſmeared with turpentine, tallow, Spaniſh brown, and aloes; but the other pieces, which had none of the aloetic mixture, were perforated, and eaten into a honeycomb.

The uſe therefore of this ingredient would certainly produce a ſaving of many thouſand pounds *per annum*, both to the merchants, and the crown. It is the bitter nauſeous acrimony which reſides in the reſinous part, that renders it a very proper defence againſt every ſpecies of inſects; and this part, being indiſſoluble in water, will adhere to the plank unimpaired, ſo long as the compoſition laſts, with which it is blended. Neither an extravagance of price, nor apprehenſions of a ſcarcity, need be any objection to the general uſe of it. The ſavannahs, and other barren places in Jamaica alone, are capable of producing much more than could be employed by all the ſhipping belonging to the Britiſh dominions; and, was it encouraged by a regular demand, Bermudas and other colonies would enter upon the cultivation, ſo that the price could probably never riſe high.

The ſame compoſition may be uſed with great advantage in Jamaica, for preſerving the rafters and other timbers belonging to the floors and roofs

roofs of buildings, from that deſtructive inſect the wood ant; nor would a preparation of the aloes be leſs efficacious in ſecuring books from the depredations of the *ſcarabæus*, which, in its reptile-ſtate, is a great enemy to all that are newly bound. If in binding books intended for this iſland, and other parts of the Weſt Indies, a ſmall quantity of the aloes tincture, made by ſolution in ſpirits of wine, was mixed up with the binder's paſte, it would effectually prevent the attacks of this inſect.

The quantity of aloes exported from Jamaica, is extremely inconſiderable at preſent; but, as an article of growth, and as it may be prepared for different demands in commerce, at very little expence and trouble, and is to be propagated in almoſt any ſoil, it could not with propriety be omitted; more eſpecially ſince in the variety of ſoil here, the ſettler may turn the different parts of his land to the culture of ſuch plants as appear beſt appropriated to them.

10. Great American Aloes, or Coratoe, — *Agavè.*

This plant is found in moſt parts of the iſland, but is moſt frequent in the rocky hills of the South ſide, and near the ſea coaſt; it likewiſe grows very luxuriantly in the richer ſoils of the mountains, always preferring thoſe which are moſt rocky. When deſigned for cultivation, it is to be obſerved, that it bloſſoms in the ſpring, and the top is then covered with a multitude of little plants, which are to be carefully gathered as the ſtems wither, and planted from eight to ten feet aſunder in any ſoil. The lower leaves of the moderate-grown plants may be cut off for uſe, without injury to the others, care being taken not to lop away ſo large a quantity, as to prevent the plants from vegetating and flowering; the nutriment received, from rains and dews, being chiefly collected by the expanding leaves, and tranſmitted to the root.

The leaves of this plant are extremely large and ſucculent; after being cut, they are paſſed between the rollers of a mill with their point foremoſt; and the juice being conducted into wide, ſhallow receivers, through a coarſe cloth or ſtrainer, in theſe receivers it is ſuffered to lie expoſed to a hot ſun, like the other aloes, until, the aqueous contents being exhaled, it is reduced to a thick conſiſtence. It

may then be made up into balls, or any other figure, with the help of lye aſhes, which prevent it from ſticking to the fingers, after which it may be kept for years, and ſerve for uſe as well as Caſtile ſoap in waſhing linen; but it has the ſuperior quality of mixing and forming a lather with ſalt water, as well as freſh.

Hence it appears, how very uſeful this compoſition muſt be at ſea in long voyages, for example to and from the Eaſt Indies; nor is it leſs convenient in thoſe ſituations adjoining to the ſea, where the water is hard or brackiſh, and immiſcible with the common ſoap.

Another method of preparing this ſoap, is by cutting the leaves in pieces, pounding them in a large wooden mortar, and then expreſſing the juice, which is brought afterwards to a conſiſtence, either by expoſure to the heat of the ſun, or by boiling over a fire. One gallon of juice, thus prepared, will yield about 1 lb. avoirdupoiſe, of a ſoft extract. It will anſwer, prepared in either of theſe ways, provided the juice, before expoſure to the ſun, or the fire, is very carefully ſtrained; for otherwiſe it will be intermixed with ſmall particles of the bruiſed fibres, and outer membrane of the leaves; which, being indiſſoluble notwithſtanding the boiling or expoſure to the ſun, will remain in the ſame ſtate after the juice becomes inſpiſſated, and may abrade and injure any fine linen waſhed with it; for in ſuch caſe, theſe little particles act like the briſtles of a ſcowering bruſh. A caution muſt be uſed, never to compound the extract with tallow, or any other unctuous materials; for ſuch mixtures deſtroy its effect. This method of preparing a vegetable ſoap was communicated to the public, firſt, by Mr. Anthony Robinſon, a practitioner in ſurgery in the iſland, and very able botaniſt, who received a premium for it from the aſſembly. It has not as yet become an article of export; but, even though it ſhould happen to be diſcouraged by the Britiſh parliament, as likely to interfere with the ſoap manufacture of the kingdom, the ſettlers, eſpecially of the poorer claſs, may find their account, in being able to furniſh themſelves with ſo neceſſary a domeſtic article, for their own private uſe, by ſo eaſy a proceſs, and at the expence of very little trouble in procuring a plant which abounds every where, and will thrive without any care beſtowed upon it, after being once ſet in the ground.

The leaves are uſed likewiſe in Jamaica, for ſcowering pewter, and other kitchen utenſils, and floors, which work they perform to admiration.

The

The inward ſpongy ſubſtance of the decayed ſtalk takes fire very readily when quite dry; and, for this quality, is often uſed by fiſhermen, and others, inſtead of tinder.

The Indians, on the South American continent, ſeparate the fibres of the leaves, by bruiſing and ſteeping them for ſome time in water, and afterwards beating them till they are entirely diſentangled; theſe fibres make an excellent ſtrong thread for their common uſes, of clothing, fiſhing lines, and nets, &c.

The crude juice, mixed with ſugar, has been adminiſtered internally, for provoking the *menſes*; it is a great diuretic, and cleanſer of the gravel and ſtone.

The inſpiſſated juice, or extract, well boiled, and ſpread upon leather, or white paper, may be uſed as a plaiſter upon parts affected with the gout. At the firſt application it ſeems to increaſe the pain; for it draws ſtrongly a ſort of dew or moiſture from the part; but in three or four hours the pain ceaſes; and the part affected grows ſtronger every day, the plaiſter being left till it drops off. If the extract is not well boiled, it will be apt to occaſion a violent itching.

11. OIL-NUT-TREE, PALMA-CHRISTI, AGNUS-CASTUS.—*Ricinus Americanus.*

It is not a part of my plan, to define all the varieties of the plants exhibited in this catalogue. Botaniſts reckon eight ſpecies of this plant; I need ſay only, once for all, that, for general comprehenſion, I have conceived it ſufficient to recite, firſt, the popular names, and oppoſite to them, the common general term given by botaniſts. A diſplay of ſcience is not requiſite nor expedient, where the principal object has reſpect to the uſeful qualities of each plant, whether for manufacture, food, medicine, or commerce; deſcriptions at large are added where they were ſuppoſed abſolutely neceſſary. The oil-nut plant is now much cultivated in Jamaica; it is raiſed from the nut or ſeed, grows with a ſurprizing rapidity to the height of fifteen or ſixteen feet, and ſeems to flouriſh moſt in gullies, or near running water, in cool ſhady ſpots. The ſeeds being freed from the huſks or pods (which are gathered upon their turning brown, and when beginning to burſt open), are firſt bruiſed in a mortar, afterwards tied up in a linen bag, and then thrown into a large pot, with a ſufficient quantity

quantity of water (about eight gallons to one gallon of the ſeeds) and boiled till their oil is riſen to the ſurface; this is carefully ſkimmed, ſtrained, and kept for uſe [q]. Thus prepared, it is intirely free from all acrimony, and will freely ſtay upon the ſtomach, when it rejects moſt other medicines. This oil is conſumed on many of the plantations, in the boiling and ſtill-houſes, during crop, and much preferable to the filthy, ſtinking lamp-oil imported from North America and Britain; for it affords a clear, lively light, emits no diſagreeable ſmell, is obtained at leſs than one half the expence, and may be kept many years without growing fetid. When intended for medicinal uſe, the oil is more frequently cold-drawn, or extracted from the bruiſed ſeeds, by means of a hand-preſs. But this is thought more acrimonious, than what is prepared by coction.

The cold-drawn oil at firſt is perfectly limpid; but, after being kept for ſome time, acquires a pale tincture, reſembling Liſbon wine, probably cauſed by the membrane which covers the kernels. It is adminiſtered, with the greateſt ſucceſs, in the belly-ach, and all obſtinate conſtipations of the bowels, given from one, to even four or five ounces. It is likewiſe taken, with perfect ſafety, by infants afflicted with worms, which it both deſtroys, and ſweeps away; and therefore much ſuperior to calomel, or tin-powder. It is given to new-born children, within the nine days, in a doſe of one tea ſpoonfull every morning, mixed with a little melaſſes, or any other ſyrup, to purge off the *meconium*; which purpoſe it effectually anſwers, and has ſaved the lives of many thouſand Negroe children. The retention of this excrement has been fatal to multitudes, by bringing on mortal convulſions, generally known here by the name of *jaw-falling* [r]. The

[q] One gallon of nuts will yield about one quart of oil.

[r] Some of the ableſt phyſicians have concurred in preferring the oil obtained from nuts, to olive-oil, in vermicular caſes; the reaſon of which is, that, as the worms have their bodies overſpread with extremely minute pipes, which are neceſſary to their reſpiration; and, which being plugged up or ſtopped, they immediately die; ſo oils are found to anſwer this effect; and nut-oil, much ſooner, and with more certainty, than any other; as its parts are leſs porous, and therefore better qualified to exclude the air, the want of which deſtroys them.

It is mentioned by ſome writers, that in certain parts of Italy it is a common practice, for mothers, to give their infants, once or twice a week faſting, pieces of toaſted bread dipped in nut-oil: and that what they uſe for this purpoſe, is extracted from the *beech-nut*, and ſeldom fails to clear their bowels of theſe dangerous animalcules; the *ricinus* oil is equally powerful, and might be adminiſtered after the ſame manner.

leaves of this plant are applied to blifters, inftead of melilot; boiled with ground ivy and wild ginger, and then fermented with a little fugar or melaffes, a drink is made, which purges ftrongly, and is a very fignal fpecific in dropfies, yaws, and pains in the joints, occafioned by the venereal. The leaves, applied to the head in fevers, relieve pain, and excite a diaphorefis in that part; made into a cataplafm, with caffada flour, and a little of the oil, and applied to female breafts, they difcufs coagulated milk, and hardnefs.

The oil, externally ufed, is excellent in removing cramps, and pains arifing from colds, and kills lice in the heads of children.

It is but of late that this oil has made an article of the Jamaica exportation, and that only in very fmall quantities; it now forms part of the Britifh *materia medica*, but is moft ufually obtained there from the feeds imported in barrels; the oil, drawn in the Weft Indies, not being encouraged, becaufe it is *a manufacture*. What is intended for exportation, fhould be packed in jars, well ftopped with corks or plugs, covered with waxed cloth, and properly tied, or wired, or in fmall tight cafks. The oil is not fubject to contract rancidity, unlefs it is made from parched or roafted feeds, which are impregnated with an *empyreuma*.

12. Anotto, or Roucou—*Bixa*.

This fhrub is very common in Jamaica. It loves a rich foil, and fhady fituation, and fhoots luxuriantly near rivulets. The pods, or feed veffels, when full ripe, are of a deep brown colour, open of themfelves, and contain between 30 and 40 feeds, covered with a fplendid red *farina*. When a fufficient number of thefe feeds are collected from the pod, they are thrown into any convenient veffel, and as much hot water poured upon them as is neceffary to fufpend the red *farina*, which is gradually wafhed off the feeds by the hand, or a fpoon. When the feeds appear quite naked, they are taken out, and the wafh left to fettle; after which, the water is gently poured away, and the fediment put into fhallow veffels, to be dried by degrees in the fhade; and, after acquiring, by this means, a due confiftence, it is made into balls, or cakes, and fet to dry thoroughly in an airy

place until it is perfectly firm, in which ſtate it is fit for market. This plant is propagated by the ſeeds, in any moiſt and fertile ſoil, among the mountains.

The powder is cooling, cordial, and much uſed by the Spaniards in their chocolate and ſoups, both to heighten the flavour, and give them an agreeable colour.

Medicinally adminiſtered, it is eſteemed good in bloody fluxes, and diſorders of the kidneys. Mixed with lemon juice and a gum, it makes the crimſon paint, with which the Indians adorn their perſons. It was formerly uſed by dyers, to form the colour called *Aurora*; and then ſold in America at nine ſhillings a pound; but at preſent it is not held in ſuch eſtimation as a dye, though it ſtill maintains its ground with painters.

It generally bears fruit in December. The bark makes good ropes for the common plantation uſes.

13. Vanilla. — *Epidendrum.*

This plant is a climber, and riſes with great eaſe to the tops of the loftieſt woods. It is found wild in many parts of Jamaica; but has been particularly noticed at the North-ſide, in the pariſhes of St. Mary, St. Anne, and St. James. It grows luxuriantly in cool, ſhady places; and may be propagated from the ſeed, or bean, or by the germ. It is chiefly planted in low, rich ſoils, along walls, or at the feet of trees, or other props. The pods grow in pairs, are generally the thickneſs of a child's finger, of about five or ſix inches in length, green at firſt, then yellowiſh, and turning to a browniſh caſt when they ripen. When this plant is deſigned for propagation, cuttings may be taken, of about three or four joints in length, and planted, cloſe to the ſtems of trees, in low, moiſt ſituations. The earth is afterwards to be kept clear from weeds, which, if permitted to grow about the cuttings before they are well-rooted, would overbear and deſtroy them; but, after they have faſtened their ſhoots to the ſtems of the trees, they are out of danger from injuries of this ſort. They do not produce flowers until they are grown ſtrong; ſo that ſome affirm, that ſix or ſeven years paſs from the planting to the time of their bearing fruit.

But, when they begin to flower and fructify, they continue bearing for ſeveral years without any further culture.

This plant produces but one crop of fruit in a year, which is commonly ripe in May, or fit for gathering; for it is not ſuffered to remain till it is perfectly mature, becauſe it is then not ſo fit for uſe. When it is about half changed yellow, it is eſteemed better for keeping, than when it is changed to a brown colour, at which time it ſplits, and diſcloſes its ſeeds. While green, it affords no remarkable ſcent; but as it ripens, it emits a moſt grateful aromatic odour.

The method, uſed to prepare the fruit, is to gather it when it turns of a yellow colour, and before it opens. It is then piled in ſmall heaps, to ferment two or three days; and afterwards laid in the ſun to dry. When it is about half dry, the pods are flattened with the hand, and rubbed over with the oil of *palma Chriſti*; then expoſed once more to the ſun, rubbed a ſecond time with oil, and put in ſmall bundles, covered with Indian leaves to preſerve them. In ſome parts of the South-American continent, the Indians gather and hang them up by one end in ſome ſhady place, to dry; and, while they are drying, preſs them every now and then between the fingers gently, to flatten them; then rub on the oil, to prevent them from drying too faſt and burſting open; which is repeated till they are fit to be rolled up in leaves, or paper.

In other parts, after gathering as before-mentioned, they ſcald them in the following liquor; viz. a brine is made with ſalt and water, ſtrong enough to bear an egg. To this are added, a fourth part of chamber-lye, and a ſmall quantity of quick-lime: theſe are boiled together for half an hour, and then taken off. The vanillas are put into this liquor, until they are thoroughly ſcalded; then taken out, and dried in the ſhade. When they are fit for market, they are put up, from fifty to one hundred and fifty, in little bags. The Spaniards are very attentive to the manuring and cultivating their vanilla-grounds. After planting in well-dunged land, they take care to mould the plants up as they grow, and fix poles for them to climb upon, as the hops in England are managed.

The vanilla yields a great quantity of oil and volatile ſalt, and is eſteemed cooling, cordial, and ſtomachic; cephalic, and carminative;

minative; opening obſtructions; and attenuating viſcid humours; but it is ſeldom uſed in medicinal compoſitions. It is mixed in chocolate by the Spaniards, French, and Italians, to give it a delicate ſmell and agreeable flavour. It is likewiſe uſed to perfume ſnuffs and other ſubſtances.

14. CONTRAYERVA. — *Ariſtolochia.*

This plant, which is alſo a climber, abounds every where among the wood-lands and thickets, on the South and North ſides of the iſland, and riſes frequently to a conſiderable height among the trees and buſhes. The root is much in eſteem here, and often adminiſtered medicinally. Both this and the ſeeds are extremely bitter, hot, and aromatic. They are reckoned an excellent alexipharmic againſt all ſorts of coagulating poiſons; ſtrengthen the ſtomach; help digeſtion; diſcuſs wind; promote diaphoreſis and urine; and deſtroy worms: for the latter intention, the root is chopped in ſmall pieces, and given by the planters to their horſes, mixed with corn.

The root is found to produce ſeveral other important effects. It throws out the ſmall-pox and meaſles; and is a wonderful antiſeptic in malignant fevers. It gently purges ſome by ſtool; but never fails working powerfully, either in this way, or by urine, or ſweat. A ſimple decoction of it in water has often recovered perſons from lingering diſtempers, loſt appetite, and debilitated limbs. But, infuſed in wine, it makes the fineſt bitter known; and, with the addition of ſteel to this tincture, is a great ſweetener of the blood.

It is ſo abundant in this iſland, that it might be collected annually, in very large quantities, for exportation, if there was a demand for it at the home-market; and it ſeems to merit this encouragement, as it has been thought, by very able phyſicians, to be ſuperior in efficacy to the Spaniſh contrayerva, and is probably another ſpecies.

15. CHINA-ROOT. — *Smilax.* With a taper, prickly ſtalk; and oval, heart-ſhaped, unarmed leaves.

This plant is frequent in the more cool inland-parts of the iſland; and is the ſame as that of the Eaſt-Indies. The roots are compoſed of

of many thick, fleſhy fibres, which ſpread wide on every ſide, and ſtrike deep into the ground; from which come out ſeveral ſtalks, taper, very ſtrong, and armed with ſhort, ſtiff ſpines. They faſten themſelves by their claſpers to the neighbouring trees, and riſe twenty feet high, and upwards. The leaves are of a thick ſubſtance, and have no ſpines: they are oval, heart-ſhaped, four inches long, and three and a half broad at their baſe, ending in an obtuſe point, and have three longitudinal veins. The flowers are ſmall and whitiſh, have no petals, and come out from the wings of the ſtalk in cloſe bunches; and the berries are red. It is propagated by the ſeeds. The root is heavy, woody, beſet with unequal tubercles; the colour on the out-ſide of a duſky red, but within of a reddiſh white. It has been found difficult in Jamaica to preſerve it from a worm, which breeds in it, and deſtroys all the *farina*, or mealy part, in which its virtues are ſuppoſed to reſide. The method of guarding againſt this depredation is, by cutting off all the ſafer tubercles, or knobs, and ſteeping it in freſh-made, ſtrong lime-water.

The virtues of it in venereal caſes are not now in ſuch repute as formerly. It is of a ſheathing nature, and a very fit ingredient in apozems; it is ſaid alſo to reſolve thick humours, and promote inſenſible perſpiration.

16. Antidote-cocoon. — *Fevillea.* Browne, p. 374.

This plant is frequent in the mountains, and generally found climbing among the talleſt trees in the woods. It bears a pod, which contains ſeveral broad, flat ſeeds, of a reddiſh colour when ripe. Theſe ſeeds are largely impregnated with an oil; which is extracted by preſſing, and burnt in lamps. The Negroes burn the ſeeds themſelves. They faſten a number of them upon a ſkewer; and, ſetting fire to the uppermoſt, it deſcends very gradually to the bottom. They are extremely bitter; and, when grated and infuſed in rum, or other ſpirits, a ſmall doſe opens the body, and provokes an appetite. The infuſion is alſo made with Madeira wine, and taken to relieve pains in the ſtomach. The oil gives a clear, fine light, when burnt in lamps, and emits no diſagreeable ſmell. But its other medicinal virtues, if it poſſeſſes any, have

have not as yet been examined. It is eafily cultivated, by planting the feed at the foot of a tree, or a pole. It bears very luxuriantly.

17. TOBACCO. — *Nicotiana.*

This plant is already cultivated extenfively in the ifland; chiefly by the Negroes, for their own confumption. There are feveral fpecies of it. The beft forts are thofe of Peru and Vera-Cruz; the feeds of which might eafily be procured. When a regular plantation of it is intended, feveral beds are prepared, well-turned up with the hoe. The feed, on account of its fmallnefs, is mixed with afhes, and fown upon them a little before the rainy feafon. The beds are then raked, or trampled with the feet, to make the feed take the fooner. The plants appear in two or three weeks. So foon as they have acquired four leaves, the ftrongeft are drawn up carefully, and planted in the tobacco-field, by a line, at the diftance of three feet between each plant: this is done either with a ftick or the finger. If no rain falls, it fhould be watered two or three times, to make it ftrike root. Every morning and evening the plants muft be furveyed, in order to deftroy a worm which fometimes invades the bud. When they are grown about four or five inches high, they are to be cleaned from weeds, and moulded up; and, as foon as they have eight or nine leaves, and are ready to put forth a ftalk, the top is nipt off, in order to make the leaves longer and thicker. After this, the buds, which fprout at the joints of the leaves, are all plucked; and not a day fuffered to pafs without examining the leaves, to deftroy a large, green caterpillar, which is fometimes very deftructive to them. When they are fit for cutting, which is known by the brittlenefs of the leaves, they are cut, with a knife, clofe to the ground; and, after being left to lie there for fome little time, are carried to the drying-fhed, or houfe, where the plants are hung up, by pairs, upon lines or ropes ftretched acrofs, leaving a fpace between, that they may not touch one another. In this ftate they remain to fweat and dry. When they are become perfectly dry, the leaves are ftripped from the ftalk, and made into fmall bundles, tied with another leaf. Thefe bundles are laid in heaps, and covered with blankets. Care is taken not to overheat them; for which reafon, the heaps are laid open to the air

air from time to time, and ſpread abroad. This operation is repeated, till no more heat is perceived in the heaps; and the tobacco is then ſtowed in caſks for exportation.

The Spaniards have a method of ſcenting their manufactured tobacco by wrapping it up in the leaves of a ſhrub, called *trebole*, or *tribole*, which retains its odour for many years, and is a native of Peru.

The tobacco thrives beſt in a rich, free ſoil; but I have ſeen very fine plants in gardens at Spaniſh Town, and other parts of the South-ſide, in very dry and indifferent ſoils.

The tribole of Peru is probably no other than the greater caltrops, or the field-tribulus (Sloane, cat. 93; Browne, p. 220), a creeping plant, growing in all the paſture-lands of Jamaica, garniſhed with winged leaves, placed by pairs, oppoſite, ſmooth, and ſet cloſe to the foot-ſtalk. The flowers come out from the wings of the ſtalk, compoſed of five large, yellow petals, which ſpread open, and have an agreeable odour: theſe are ſucceeded by roundiſh, prickly fruit, ending in a long point. In ſize and diſpoſition it is ſomething like the Turkey-bloſſom, ſo common in the lowlands, and which is another ſpecies of the tribulus.

In Turkey, the tobacco-leaves are ſoaked in ſalt-water before they are dried, to extract ſome of their acrimony, and render them more mild. The Negroes in ſome parts of Africa are ſaid, for the ſame intention, to ſqueeze out the juice of the green leaves, and then dry them before a fire.

The juice of the green leaf deſtroys maggots in ſores, beyond any other application; and makes an excellent healing balſam, or ſalve: when beaten into a cataplaſm, with vinegar or brandy, it will remove hard ſwellings in the liver and ſpleen. The oil, drawn in a retort from the dried leaf, cleanſes the fouleſt ulcers, takes away their callous edges, and promotes their incarnation and healing. The aſhes are an excellent dentrifice-powder, and correct a putrid diſpoſition in the gums.

Theſe, perhaps, are the moſt innocent uſes to which it is applicable; though we find, that, in all hot countries throughout the world, where it grows, the inhabitants have ſmoaked it from time immemorial. The odour has been thought to correct malignant *effluvia*;

effluvia; and it is probably not without ſome ſuch opinion, founded upon experience, that we obſerve this cuſtom ſo univerſally prevalent. Nor is it found to be noxious to the conſtitution, unleſs when abuſed by an exceſſive indulgence.

The common tobacco ſcarcely deſerves culture, in this iſland, for exportation: but the choicer ſpecies of Peru, Vera Cruz, and Cuba, might be worth ſome attention; as the ſuperior quality of their flavour would entitle them to be preferred in Great-Britain to the produce of Virginia; and they may be raiſed, in Jamaica, in a perfection equal to what they poſſeſs in the countries from whence the ſeed is brought; which is not attainable in the more Northern climates.

18. Small-grained BLACK-PEPPER. — *Piper*. With rough, ſpear-ſhaped, oval leaves, having five veins. Browne, 121. Lin. Sp. Plant. 29.

This plant has generally been confounded with the pepper-elder, whoſe leaves have ſeven veins, or nerves, and which grows more luxuriantly.

The black-pepper grows here in moſt of the hilly ſituations, is very buſhy and ſpreading. It riſes to the height of ſix or eight feet, thrives beſt in cool, ſhady places, and ſeems to delight in a mixed clayey ſoil.

The ſeeds, and other parts of the fructification, grow in the ſame manner with thoſe of the Eaſt-Indian black-pepper, from which they differ only in ſize; for the grains of the Jamaica fruit ſeldom exceed a large muſtard-ſeed in dimenſions: but the taſte and flavour are in every reſpect the ſame; and there is no perceptible difference between it and that of the Eaſt-Indies, whether uſed in cookery, or ſeaſoning. To collect any quantities of this aromatic, it muſt be picked when full-grown, and before it ripens or changes colour; for it grows pulpy and ſucculent in the mature ſtate, and loſes its flavour and pungency. It may be left adhering to the natural ſpikes, or twigs, and dried in the ſun, like pimento. Theſe ſpikes ſeem to have the ſame flavour as the grain itſelf, and are as eaſily ground to powder.

This pepper, ſo far from becoming as yet an article of export, has not excited the attention or induſtry of the inhabitants even to prepare

prepare it for their culinary uſes; inſtead of which, they ſend to Britain for the Eaſt-India pepper, becauſe it is far-fetched; and becauſe it is thought too much trouble, to gather what the too bounteous hand of nature has planted in ſuch abundance at their very doors. Yet I conceive ſome hopes that it may, one day or other, form a commodity for exportation; at leaſt it is ſome ſatisfaction to ſettlers to know, that they can eaſily ſupply themſelves with an article in ſuch eſteem for domeſtic uſe, in every reſpect analogous to the Eaſt-Indian commodity, except in ſize of the grain, which ſurely is of no conſequence; though it is probable, that even the ſize is capable of improvement, like other fruits, by taking the plants out of their wild ſtate, and giving them place in a rich and well-choſen ſoil, pruning off the too luxuriant branches, leſſening the quantity of fruit when the bearing is too great, and ſuch other means as are practiſed by gardeners for the like purpoſe. This plant ſeeds in the month of July, and may be propagated from the ripe ſeeds. There are three or four other ſpecies of this pepper in the iſland, but not of equal value.

19. Indian-Pepper. — *Capſicum.*

There are about fifteen varieties of the *capſicum* in this iſland, which are found in moſt parts of it. Thoſe, which are more commonly noticed, are the bell-pepper, goat, bonnet, bird, olive, hen, Barbary, finger, cherry, &c. Of theſe the bell is eſteemed moſt proper for pickling. The pods, for this purpoſe, are gathered before they arrive at their full ſize, while their ſkin is tender. They are ſlit down on one ſide, to get out the ſeeds; after which, they are ſoaked two or three days in ſalt and water. When they are taken out of this, and drained, boiling vinegar is poured upon them, in a ſufficient quantity to cover them; and they are cloſely ſtopped for two months. Then they ſhould be boiled in vinegar, to make them green; but they require no addition of any ſpice; and are eſteemed the wholeſomeſt pickle in the world.

The bird-pepper is gathered when ripe, dried in the ſun, pounded, and mixed with ſalt, and kept, cloſe-ſtopped in bottles, for uſe. This is commonly known by the name of *cayan-butter*, and in general

neral eſteem for the excellent reliſh it gives to ſoups, turtle, and other diſhes.

Theſe peppers are uſed liberally in the Weſt-Indies, gathered freſh from the buſh, generally before they are ripe; though the bird-pepper has the beſt flavour in its mature ſtate. Perhaps they are neceſſary, in this climate, to aſſiſt digeſtion, promote the tonic motion of the bowels, invigorate the blood, and correct the flatulency of vegetable aliments.

The mixture, called *man-dram*, ſeldom fails to provoke the moſt languid appetite. The ingredients are, ſliced cucumbers; eſchalots, or onions, cut very ſmall; a little lime-juice, and Madeira wine; with a few pods of bird or bonnet-pepper, well-maſhed, and mixed with the liquor.

The bird and Guïney-pepper are given internally, to cure the dry-gripes in horſes or mules, when occaſioned by rank or ſour graſs. They are likewiſe externally applied in cataplaſms.

An infuſion in ſpirit of wine takes off much of their acrid, inflaming quality.

They are propagated, like the former, by their ſeeds.

The pickled pepper and cayan-butter may be regarded as articles of export, though not conſiderable: yet they are objects for ſmall ſettlers; and, with other minute articles, might greatly help our commerce with the North-Americans.

20. Balsam-Tree. — *Cluſia.*

This ſhrubby tree grows very abundant in all the Southern diſtrict of the iſland, generally riſing to the height of ſixteen or eighteen feet. The leaves are round, brittle, and thick; and, when broken, emit a milky, reſinous juice, which ſticks to the fingers like bird-lime, and ſoon turns yellow. The fruit and body of the tree are filled with the like balſam. It has no ſcent, nor pungency. It is uſed among the Negroes as a vulnerary; but its virtues are ſtill unexplained any further, though it ſeems to merit ſome experiment, to determine them more fully.

21. Hog-gum Tree. — *Metopium.*

The tree producing this gum is frequent enough, and well-known in this iſland. It is ſaid the wild hogs, when wounded,

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uſed to have recourſe to it for a cure. In February the tree ſheds its old leaves, and is then very full of ſap. On wounding the bark, a pellucid juice iſſues out, which gradually turns yellowiſh, and acquires in the air a hard conſiſtence, and dark complexion reſembling pitch, and is equally brittle. About two ſpoonfuls of the juice freſh drawn, if mixed with the ſame quantity of water, and ſweetened with a little ſugar, is an excellent remedy in the colic, or belly-ach, gives immediate eaſe, and produces an evacuation in four or five hours. When it is old, it ſtill retains its laxative quality diſſolved in water, but in a gentler degree. It is conſtantly uſed here in ſtrengthening-plaiſters; and, adminiſtered in form of pills, it ſtops a gonorrhœa. It poſſeſſes a warm, diſcutient nature, and may be uſed with great propriety in all ſwellings ariſing from colds, weakneſs of the veſſels, or poverty of the juices, either internally or externally adminiſtered. It is thought to be an extraordinary diuretic, and is an admirable vulnerary.

22. Gum Lignum-vitæ, or Pock-wood Gum. — *Gujacum.*

The *gujacum* tree grows in vaſt abundance on the South-ſide of the iſland. I do not remember to have obſerved any on the North-ſide. The wood and gum are too generally known, to require a deſcription. The largeſt trees make a very good remittance to Britain, for manufacturing the trucks of ſhip-blocks, and a variety of turnery-ware, as well as for medicinal uſes. The gum is no leſs in demand for its virtues in venereal taints, rheumatiſms, and other diſtemperatures. It is obtained by jagging the body of the tree in May. It exſudes copiouſly from the wounds, though gradually; and, when a quantity is found accumulated upon the ſeveral wounded trees, hardened by expoſure to the air and ſun, it is gathered, and packed in ſmall kegs for exportation. This gum has been ſuſpected, ſometimes, to have been ſophiſticated, by the Negroes, with the gum of the manchineal-tree, to which it bears ſome ſimilitude at the firſt appearance; but it is eaſily diſtinguiſhed by diſſolving a little in ſpirit of wine, or rum. The true gum imparts a whitiſh or milky tinge; but the manchineal gives a greeniſh caſt: and this is ſtill further diſtinguiſhable, by pouring a little of the ſame tinc-

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ture into fair water, which takes from the *gujacum*, almoſt immediately, the complexion of milk.

The fruit is ſhaped like a heart, flattiſh, and of a bright-yellow colour, containing a reddiſh, pulpy ſubſtance, inveloping a ſmall, black, ſhining ſeed, of a very bitter taſte. The fruit is purgative; and, for medicinal uſe, far excels the bark. A decoction of it has been known to cure the venereal diſorder, and even the yaws in its advanced ſtate, without the uſe of mercury. The flowers, or bloſſoms, are compoſed of five petals, of a beautiful blue colour; from which is made a laxative ſyrup, reſembling ſyrup of violets.

The freſh bark opens the body, and is deemed a great ſweetener of the blood. Care, however, is requiſite to moderate and temper the native acrimony of theſe medicines in the beginning of a courſe, and to prepare the body for the uſe of them.

The foliage is of a very deterſive nature, and frequently uſed to ſcour and whiten floors, which it performs much better than ſoap. The infuſion of them is alſo applied to waſh painted linens, and other ſtained garments; which it is ſaid to do very effectually, without diminiſhing the luſtre of the dyes.

The tree, at its full growth, riſes to the height of forty feet, and meaſures from fifteen to eighteen inches in diameter. There are none of this ſize now left in Jamaica, ſuch multitudes having been cut down, either for clearing land, or for exportation. They are of ſlow growth, and are many years in attaining to maturity. The wood is heavy, and of cloſe, tough grain; which recommends it as a very uſeful timber, eſpecially for lintels, and out-door work.

It is certainly one of the moſt valuable trees in the Weſt-Indies, ſince the body, the bark, gum, fruit, leaves, and bloſſom, are all of them applicable to ſome uſeful purpoſe. It may eaſily be propagated by the ſeeds, or fruit, and ſeems to love a dry ſoil and hot expoſure.

The gum is commonly ſold in the iſland at 2 *s.* 6 *d.* *per* pound weight, equal to 1 *s.* 9½ *d.* ſterling.

23. Cashew, or Cashou Tree. — *Anacardium.*

This tree is eaſily raiſed from the nut. It is of very quick growth, bearing fruit in two years after its being planted; and, in good

good ſoils, ſpreads to the ſize of an Engliſh walnut-tree, which it much reſembles in the ſhape and ſmell of the leaves; and they are equally efficacious, in decoction, for cleanſing and healing old ulcers. The fruit, or apple, has an agreeable, ſubacid flavour, with ſome degree of reſtringency. The juice, expreſſed from it, and fermented, yields a pleaſant wine; and, diſtilled, a ſpirit is drawn from it far exceeding arrack, or rum, which makes an admirable punch, and powerfully promotes urine. Some planters roaſt the ripe fruit at a fire; and ſlice one or two into a bowl of punch, to give it a pleaſant flavour. The reſtringency of the juice has recommended it as a very ſignal remedy in dropſical habits; inſomuch that many Negroes, labouring under this diſorder, on being ſuffered to eat plentifully of the fruit, and of the roaſted kernels, have ſoon recovered. The nut ſprings from one end of the apple: the outer ſhell is of an aſh colour, and very ſmooth; under this is another, which covers the kernel; between this is a viſcid, inflammable oil, of a reddiſh colour, extremely acrid, bitter, and cauſtic, which has been uſed with great ſucceſs in eating off ring-worms, cancerous ulcers, and corns; but it ought to be applied with caution, The kernel, when freſh gathered, has a moſt delicious taſte, and abounds with a ſweet milky juice. It is likewiſe an ingredient in puddings, and other agreeable preparations. When ſomewhat older, or after being kept for ſome time, it is generally roaſted; and in this ſtate it is not ſo proper for coſtive habits. Ground with cacao, it makes an excellent chocolate.

Theſe nuts are often ſent as preſents to Great-Britain; but, after keeping too long, the kernel becomes ſhriveled, and loſes its flavour and beſt qualities.

The tree annually tranſudes in large quantities, viz. from five often to ten or twelve pounds weight of a fine, ſemi-tranſparent gum, ſimilar to gum-arabic, and not at all inferior to it in virtue and quality, except that it contains a ſlight aſtringency, which perhaps renders it, in many reſpects, more valuable; for which reaſon, it is often uſed as a *ſuccedaneum* in the Jamaica ſhops, and might anſwer equally well in Great-Britain, if encouragement was given to collect and remit it.

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The thick oil of the nut, or ſhell, tinges linen of a ruſty, iron colour, which can hardly be got out; and, if any wood be ſmeared with it, it preſerves it from decay. If a proper method could therefore be fallen upon for extracting this oil from the ſhell, which at preſent is generally thrown away as uſeleſs, it would doubtleſs be applicable to various good purpoſes; for no worm would attack the wood, whoſe pores are filled with it. It would certainly be an excellent preſervative to houſe-timbers, if not to ſhips bottoms, mixed with other compoſitions; though, for the latter operation, perhaps it might be difficult to obtain it in plenty ſufficient, or at a price that would make it anſwer to the experiment. But, where a leſs quantity might be wanted, there is great probability of obtaining it; as the tree is ſo eaſily propagated, grows in almoſt any ſoil, bears luxuriantly, and lives to a very great age.

From the body of the tree is procured, by tapping or inciſion, a milky juice, which ſtains linen of a deep black, and cannot be got out again: but whether this has the ſame property with that of the Eaſt-Indian *anacardium*, has not yet been fully experimented; for the inſpiſſated juice of that tree is the beſt ſort of *lac* which is uſed for ſtaining black in China and Japan.

Dr. Grew mentions the juice being uſed for ſtaining of cottons: but it is doubtful which of the ſpecies he means; though Sir Hans Sloane ſuppoſes it to be of the *acajou*, or *caſhew*, here-mentioned. However, it may be very well worth the trial. A few of the trees may be tapped in the bleeding ſeaſon, the juice collected in earthen pots, kept in a place free from duſt, or the pots covered with a linen cloth, to prevent duſt from mixing with it; and, when of a proper conſiſtence, experiments may be made to ſee if it has the ſame property with the Japan *lac*, which if it has, it may prove a valuable commodity [s]. It may be proper, for greater certainty, to vary the experiment; to expoſe ſome of the juice in ſhallow, wooden receivers, covered with a ſingle linen cloth, to the heat of the ſun, and reduce it to a conſiſtence in the ſame manner as the aloes; or inſpiſſate it in iron pots over a fire by gentle evaporation. If either way ſhould ſucceed, a new and important article would be gained to the commerce of the iſland.

[s] Miller.

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24. Gum-Tree. *Sapium.* Browne, 338.

This tree which is found in the Eastern and North-east parts of the island, yields plentifully a resin of the consistence of turpentine, which the planters of those parts use in their boiling-house lamps, and the wood of it makes hogshead staves, as I have already remarked in the description of St. Thomas in the East. The virtues and properties of this resin (any further than has been mentioned) are as yet unknown for want of experiment.

25. Locust-Tree. *Hymenæa.*

This tree, is not an *indigena* of the island, but introduced probably from the Southern continent, and was first planted in Liguanea [s]; the seeds obtained from it were afterwards sown in other parts, so that it is now common. It is very large and spreading, and of quick growth. It bears thick fleshy brown pods, shaped like those of the garden-bean, about six inches long, and two and an half broad, of a purplish brown colour and ligneous consistence, with a large suture on both edges. They contain three or four roundish compressed seeds, divided by transverse partitions, and inclosed in a whitish substance of fine filaments as sweet as honey. The Indians eat this substance with great avidity, though it is apt to purge when fresh gathered, but loses this quality after it grows old.

Between the principal roots of the tree exsudes a fine transparent resin, yellowish or red, which is collected in large lumps, is called the gum *anime* of the shops, and makes the finest varnish that is known, superior even to the *Chinese lacca*; for this latter use it is dissolved in the highest rectified spirits of wine. It burns readily and with a clear flame, emitting a grateful and fragrant smell, for which reason it is sometimes ordered by way of fumigation in the chambers of persons labouring with asthma's, or suffocative catarrhs. Its vapours not only strengthen the head, but all parts of the body affected with cold. Some apply it outwardly, dissolved in oil or spirits of wine, to strengthen the nerves. An oil may be distilled from it, equally prevalent in all cold diseases, palsies, cramps, and

[s] I have been lately informed, that it was originally brought into this island, by the little colony removed from *Surinam*; who planted a great variety of seeds, and (among others) of this tree; particularly at the spot allotted to them, called *Surinam-Quarters*, in the parish of *St. Elizabeth*, where the species is now growing in vast abundance.

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contractions of the finews. The folution in fpirits has been thought not inferior to gujacum in venereal cafes, given in a dofe of half a fpoonful in wine, and fweating after it. A decoction of the leaves expels flatulencies, and gives eafe in colicky pains, by gently opening the bowels; and the inward bark is an excellent vermifuge in fubftance or decoction. The wild bees are fond of building their nefts in thefe trees; fo that if we agree with the Dutch in opinion, that St. John the Baptift fed upon the fruit of them, we have no difficulty in fuppofing that he found the locuft and wild honey, mentioned in fcripture, on the fame tree.

26. Tamarind. *Tamarindus.*

This tree is exceedingly common in Jamaica, grows to a vaft bulk, and thrives well in the favannah lands, but beft in deep rich brick mould.

The fruit or pods are gathered in June, July, and Auguft, attaining fooner to maturity in fome parts than in others. The ufual method of preparing the fruit for exportation is as follows. The pods are gathered when full ripe, which is known by their fragility, or eafy breaking on a fmall preffure between the finger and thumb. The fruit taken out of the pod, and cleared from the fhelly fragments, is placed in layers in a cafk, and the boiling fyrup from the tache or firft copper in the boiling-houfe, juft before it begins to granulate, is poured in, till the cafk is filled; the fyrup pervades every part quite to the bottom, and when cool, the cafk is headed for fale. The more elegant method is, with fugar well clarified with eggs, till a clear tranfparent fyrup is formed, which gives the fruit a much pleafanter flavour.

The Eaft-India tamarind differs not from that of the Weft-Indies, but the pulp of the fruit is preferved without fugar, and exported to Europe in this form, which is better adapted for an ingredient in medicinal compofitions.

The duty payable in Great-Britain upon the fugar-preferved tamarind is fo high, that it cannot anfwer as a remittance; but if fent as a drug, that is, the pulp carefully feparated from the feeds, put in jars, and well covered from the air by a covering of oiled paper, and waxed cloth, it might be a profitable article of remittance. The

duty on the ſugar-preſerved, being 6 $\frac{18}{20}$ *d.*; and on the raw pulp 1 $\frac{18}{20}$ *d. per* pound weight; which is (*per* cwt.) on the former, 3 *l.* 4 *s.* 4 $\frac{16}{20}$ *d.*; and on the latter, only 17 *s.* 8 $\frac{16}{20}$ *d.*; or 2 *l.* 6 *s.* 8 *d.* difference.

The pulp would poſſibly be better ſecured from mouldineſs, by giving it a gentle heat in an oven, by which the cruder parts may be evaporated, and the virtue of what remains not in the leaſt diminiſhed.

The wood of the tree is firm; and, ſawn into boards, is converted to many uſeful purpoſes in building.

The pulp of tamarind, beſides its purgative quality, temperates the acrimony of the humours, abates the heat of the bile and blood, quenches thirſt, and is good in acute burning fevers. It corrects the fault of violent purgatives, and quickens thoſe that are ſluggiſh. It is frequently made an ingredient in punch, eſpecially at ſea, and never fails to open the body.

Mixed with decoction of borage, it is excellent in allaying the heat of urine.

A decoction of the leaves is ſaid to deſtroy worms in children.

It is obſerved that the leaves cloſe up at the approach of evening, or of cool moiſt weather, like thoſe of the ſenſitive plants.

27. CASSIA-STICK TREE. *Caſſia Fiſtularis.* Browne, 222.
With five pair of leaves, oval, ſpear-ſhaped, and ſmooth.

This tree grows in many parts of Jamaica, but is not indigenous.

The pods are from twelve inches to eighteen, and even thirty, in length, and about an inch in diameter. They conſiſt of a woody ſhell, of a dark brown colour, hard but thin, divided within into ſeveral cells with tranſverſe partitions; the pulp is ſoft, black, ſweetiſh, and of the conſiſtence of thick honey, and contains oblong, roundiſh, flattiſh ſeeds, that are hard, ſhining, and of a duſky yellow.

Thoſe pods are beſt that are freſh, full, and will not rattle when ſhaken. The pulp is only in uſe which is taken from the pods, and paſſed through a ſieve.

It is looked upon as a mild, inoffenſive purge, agreeing with all ſexes and ages.

In

In the Weſt-Indies, the ſhell is obſerved to be thicker, and the pulp acrid; in which reſpect it differs from that of the Eaſt-Indies; and perhaps this is owing to a difference in ſoil and culture; in Jamaica the fineſt fruit is produced from trees growing in rich deep mould in ſome bottom or vale, warm, and well ſheltered; it is not wonderful that the quality ſhould degenerate, when no pains are taken in the cultivation of it.

The pulp of the *horſe-caſſia* is likewiſe a purgative, but ſo violent and griping in its operation, that it is never adminiſtered except to horſes.

28. Prickly Pear, or Indian Fig. *Cactus.*

There are ſeveral varieties of this plant in Jamaica; but the ſpecies I ſhall particularly refer to, are what is called the prickly pear, with broad fleſhy leaves dotted with ſpikes; and the *cochineal-cactus*, whoſe leaves are larger, more ſucculent, and free from ſpikes. The former ſort is abundant in all the South ſide parts of the iſland, growing in dry, hot, rocky ſituations, and in very ſterile ſoils; the other ſeems not to be a native, and requires a better ſoil; but although this is probably the Mexican plant, called by ſome the [t] *opuntia maxima*, it is certain that the cochineal is found upon both ſpecies indifferently. It is well known that theſe plants bear a ſucculent fruit or berry at the extremities of their leaves, filled with a juice of delicate red colour, and agreeable taſte. This juice is the natural food of the cochineal inſect, which owes to it the value and property it poſſeſſes, as a dye in ſome of our principal manufactures. The *exuviæ* and animal ſalts of the inſect are, from the minuteneſs of its parts, inſeparable from the eſſential principles of the dye; whence it follows, that ſuch an heterogeneous mixture muſt neceſſarily deſtroy the brilliancy of colour inherent to the juice of this fruit; and that the juice itſelf, which alone contains the dying

[t] Neither the leaf nor fruit of this ſpecies have any prickle. The flowers are of a very beautiful red or crimſon. This is generally called *the true cochineal plant*. The inſect that feeds upon it is of a ſilvery colour, larger, more plump, and yields a greater quantity of the dye. The difference in point of goodneſs, obſervable in the cochineal, is entirely owing to the plant it feeds upon. The prickly plants, ſo abundant in Jamaica, are covered with the ſame ſpecies of inſect; but not being the proper food for it, we find it in general diminutive, having very little red tincture in its body. I have ſeen ſeveral of the true cochineal plants growing in Longville Garden, in the pariſh of Clarendon.

principle, muſt, if unmixed and brought to conſiſtence, yield a true perfect colour, lively and brilliant, as we find it in its natural ſtate.

Upon this hypotheſis Mr. *David Riz*, an ingenious gentleman of Kingſton in this iſland, proceeded in ſeveral experiments, to obtain from the plant artificially, what nature accompliſhed in the inſect, and at length happily ſucceeded by inſpiſſating the juice; but the means he uſed are not yet communicated to the public. Encouraged by this diſcovery, he went to England with ſeventy-ſix proceſſes differently manufactured, to try which would anſwer beſt as a ſubſtitute to the cochineal. After a great number of experiments, he found one proceſs which communicated a crimſon colour to ſilk and wool, ſuperior to that given by cochineal; trials of which were made before a number of the principal dyers in and about London, at the muſeum of the Royal Society, invited there for that purpoſe. He alſo found two other proceſſes, which promiſed, with very little alteration in their manufactory, to afford the colour-making dyes of ſcarlet and purple. Upon a moderate calculation it was found, that his colour would go further than three times the quantity of cochineal, which he accounted for by remarking, that there is a great part of the inſect, as its ſkin, *&c.* which affords no dye, but that the whole of his proceſs was genuine colour, with little or no impurity.

Notwithſtanding the advantages that might be derived to the nation from this gentleman's diſcovery, he met upon the whole with very little encouragement to proſecute his manufacture further. It was ſaid, that "our commerce with *Spain* would be hurt by it;" for this very reaſon it ought to have been encouraged. I am a ſtranger to the annual importation of cochineal from the Spaniards, but the quantity muſt certainly be very conſiderable, as it is ſo largely conſumed in our fabrics and medical compoſitions; but whatever the quantity may be, it is evident that the proceſs diſcovered by Mr. Riz gave promiſe of rendering the importation of that article wholly unneceſſary; and as his colour, weight for weight, was found to go further in dying fabrics, than thrice the quantity of cochineal, a great ſaving would be made by the dyers themſelves, and their fabrics would be afforded at a cheaper rate, all which makes

makes in favour of the national balance of trade. There is no doubt but the inventor, for a competent reward (of which he is well deſerving), would have publiſhed the ſecret of his proceſs; thouſands of acres now waſte in Jamaica might be cultivated with this plant, with little trouble or expence; and a quantity obtained anſwerable to the home demand.

The diſappointment this gentleman met with, would intimidate me from proceeding further in the catalogue of productions, if I had not ſome gleam of hope remaining, that the endeavours of ingenious men in theſe remote branches of the empire may hereafter be more regarded, by the patriots of Britain, and the guardians of its commercial intereſts.

The fruit of this plant, eaten when it is ripe, is ſaid to check fluxes by its mild reſtringency; it is alſo a powerful diuretic, and ſometimes imparts a tinge to the urine; which furniſhes a proof that the juice is not always altered with reſpect to the principles of its dye, by the animal ſalts and fluids with which it has to encounter in its ſecretion through the body.

Modern diſcoveries have ſhewn a chemical method of ordering the cochineal dye ſo as to retain a very great brilliancy of colour.

Drebel, a Dutch chemiſt, firſt invented the proceſs of obtaining from cochineal, by means of a ſolution of tin in *aqua regia*, a bright and ſolid ſcarlet, exceeding in beauty and luſtre any before produced. This however anſwered only for woollen ſtuffs. Monſieur Macquer diſcovered lately the method of dying ſilks, and cottons, or linen, in equal perfection, by a ſlight variation in the common proceſs. He firſt dipped a piece of ſilk into a ſaturated ſolution of tin in *aqua regia*, ſomewhat weakened by the addition of a quantity of water, ſo ſmall as to produce no precipitation of the earth or the metal. Having expreſſed the liquor from the ſilk, and afterwards waſhed it in water, in order to free it from any ſuperfluous part of the ſolution, he dipped it into a decoction of cochineal quickened (as is uſual in the dying of woollen cloths) with a ſmall quantity of cream of tartar. The ſilk immediately took a full bright colour, which reſiſted all the teſts or proofs uſually employed on wool.

The dyers are therefore, it appears from this narrative, now poſſeſſed of the art of giving the cochineal dye a brilliancy, perhaps

ſomewhat nearer to that of the *cactus* juice; yet in all manufactures of this ſort, it is certain, that the cheaper and ſimpler the dye is that is principally required, and the ſhorter and leſs laborious the proceſs, the more uſeful and valuable it ought to be eſteemed; and therefore, without detracting any thing from the merit of Mr. Macquer's diſcovery, we muſt preſume, that the preparation of the juice invented by Mr. Riz, which ſtrikes at once the perfect colour with all the luſtre that the dye naturally poſſeſſes, is, by reaſon of its ſimplicity, cheapneſs, and facility of the proceſs, very far ſuperior, excluſive of its being the production of a Britiſh colony, and obtainable with a vaſt annual ſaving to the national ſtock of riches, and general balance of trade.

The juice of the fruit is probably reducible to a conſiſtence, by expoſure to the air and ſun, like the juice of aloes; but the difficulty was, to fix and render it undiſchargeable (without injury to the colour), from the principles of the mixture with which it is combined for the dyer's purpoſe; and a proceſs to this effect conſtitutes the chief merit of the diſcovery made by Mr. Riz.

The other ſpecies of the *cactus* have nothing of a remarkable utility except the torch thiſtle, or *cactus major erectus*, which, when it grows old, is hollow within, or rather containing a tubular network; in this ſtate it will burn like a candle; the Indians on the continent are ſaid to fill it with a bituminous ſubſtance, and thus make an excellent kind of flambeaux.

The preſent price of cochineal, in London, is about 19*s.* 6*d.* ſterling *per* pound.

29. Scarlet-Seed. *Arbor Sloaneæ Species.* Browne, p. 368.

This ſhrubby tree is frequent in the Red-Hills near Spaniſh Town, about ſix to ſeven inches diameter, about twelve or ſixteen feet height, and grows pretty luxuriantly. When the fruit is ripe, it burſts upon the tree and ſheds its ſeeds, of which the ſmaller birds ſeem very fond; they are inveloped in a greaſy waxen ſubſtance of a ſcarlet colour, which may probably ſerve both for the dyers and painters uſe, when better known.

30. Alli-

30. { ALLIGATOR-WOOD; or MUSK-WOOD. { —*Elutherium.* Browne, p. 369. —*Lauro Affinis, Ligno Moſchum olente. Slo. Cat.* p. 137.

This tree is frequent in the midland woods, and grows to a conſiderable ſize. All parts of it, but eſpecially the bark, ſmell ſtrongly of muſk [*u*], and may be uſed inſtead of that perfume for many purpoſes. A ſmall piece of the bark put into a pipe of tobacco and ſmoaked, will ſcent a room immediately. As the wood grows old and dry, it loſes this odor, but the bark continues to retain it. The wood is full of a bitter, reſinous ſubſtance, which renders it unfit for rum-puncheons, being obſerved to communicate both its ſmell and taſte to all ſpirituous liquors. But it is often cut for *ſtaves* and *heading* for ſugar hogſheads, when there happens a ſcarcity of other lumber. Some old Negroe-women are extremely fond of perfuming their perſons with the powdered bark, till they ſmell like civet-cats.

There is no doubt but the reſinous parts of this tree contain a volatile odoriferous oil, and that this as well as the reſin itſelf, which is ſoluble in ſpirits, might be converted to many uſeful, and probably medical purpoſes.

31. AMERICAN NUTMEG.—*Arbor moſchata* vel *myriſtica Americana.*

This tree was firſt planted at Mr. Beckford's plantation, called The Retreat, in Clarendon; the ſeeds, from which it was produced, were probably brought from the South American continent. It bears a conſiderable number of large round pods reſembling the calibaſh, hanging from the branches by a long pedicle. The pods are from four to five inches diameter, and contain a multitude of nuts or kernels, of about one inch in length, and one third of an inch in thickneſs, all packed cloſe in a very ſingular regularity, ſo that after diſplacing them, it is impoſſible to reſtore them to the ſame order and compactneſs as before. Theſe kernels, when thoroughly dried, are of a light, reddiſh, brown colour, impregnated with an aromatic oil reſembling that of the Eaſtern nutmeg, from which they differ ſo little in flavour and quality, that they may be uſed for ſimilar purpoſes in food or medicine; the only perceptible

[*u*] Reſembling that of the *alligator*—whence its name.

difference

difference to the taste, is, that they are less pungent than the East-Indian nutmeg. It was a long time before the tree at The Retreat bore fruit; at the time of its bearing it was about eighteen feet in height. It has since been cultivated by many gentlemen in different parts of the island, and may probably in a few years be adopted into general use, as well as furnish an article of export. I take it to be the same as that found in Guiana. When intended for exportation, it might be adviseable to send them in the dry pods entire, or lay the kernels in lime-water for a little while, drying them afterwards again in the sun, or a shady place.

32. Indigo-Berry.—*Randia.*

The shrub of this name is frequent in the low-lands, and chiefly in the more barren clayey soils, rises to the height of seven or eight feet: the main stem tough and hard: the branches somewhat prickly at the ends: the leaves of an oval or roundish form, growing in tufts. The berries are round, grow very numerous on the smaller branches, and contain a thick pulp, which stains paper or linen of a fine fixed blue colour, which stands washing either with soap or acids; but does not communicate so fine a colour with heat. If it was brought into cultivation for the sake of this property, an excellent blue tint might be obtained from it for painting.

33. Silk Cotton Tree.—*Bombax.*

The stupendous size of these trees has attracted the notice of most travelers in the West-Indies. They have been known to rise to upwards of one hundred feet in height, tapering from the base, and are frequently seen from fifty to eighty feet length of shaft, measured to the first insertion of the lower arms or branches, and from twelve to fourteen feet circumference. The wood is light and porous, and makes excellent canoes. In Columbus's first voyage it is said, there was a canoe seen at Cuba made with one of these trees, large enough to contain one hundred and fifty men. They are frequently known to carry from fifteen to twenty hogsheads of sugar, of from twelve to sixteen hundred weight; the average of which is about twenty-five tons burthen. When sawn into boards, and these afterwards well saturated with lime-water rubbed into the pores, the

the wood bears expoſure to the weather for many years; it is alſo formed into laths for roofs, curing-pots, and hogſhead heading. The leaves when young and tender are very mucilaginous, and boiled by the Negroes as greens, in their *pots*. The pods are pyriform, upwards of ſix inches long, and proportionably thick in the biggeſt part, tapering towards the pedicle like the pear kind. This fruit when ripe burſts open in five diviſions, and ſhews a dark cotton, of a ſoft ſilky texture, incloſing a number of roundiſh ſeeds. It has been ſuppoſed that this ſubſtance might be rendered uſeful in the hat manufacture. It is ſometimes uſed for ſtuffing pillow-caſes, and ſeems to poſſeſs the elaſticity of the *eider-down*, as ſoon as it is impregnated with the warmth of the body; but it is thought unwholeſome for Weſt India beds, as it is apt to excite too ſtrong a perſpiration; it might probably anſwer better for winter coverlids in Great Britain. Whether it has a ſufficient ſtaple to be mixed to any advantage in fabrics of the loom, experiment muſt determine.

The larger canoes are generally ſold for 50*l.* to 60*l.*, and the ſmaller 10*l.* to 30*l.*, Jamaica money. Thoſe of largeſt ſize are called *petiaguas*.

When the tree decays, it becomes a neſt for the *macaca beetle*; whoſe caterpillar, gutted, and fried, is eſteemed by many perſons one of the greateſt delicacies in the world.

The bark of the root has been ſometimes uſed with ſucceſs as a vulnerary and ſub-aſtringent; and the ſeeds are adminiſtered in emulſions, and pectoral infuſions.

The *down-tree* is another ſpecies, and varying in many reſpects, not exceeding 30 feet in height, and having large ſpreading, roundiſh, ſcalloped leaves, growing at the extremity of very long foot ſtalks. The pod is likewiſe differently formed, being longer, larger, blackiſh, compreſſed, and channeled longitudinally; producing a cotton of much better ſtaple, which has been uſed for ſtuffing beds and mattraſſes, and ſeems well adapted to the loom. They are probably from the South American continent, for they are not common in Jamaica. They are found at Oake's plantation in Clarendon, on the banks of the river Pindar, and ſome other parts; and might eaſily be propagated from the ſeeds. If the ſpecies is the ſame as that of the Spaniſh continent, it is certainly capable of being manufactured; ſince the Indians ſpin and work the cot-

ton of their trees into garments. This ſpecies in South America is thus diſtinguiſhed:

Bombax, foliis quinque-angularibus, villoſis, caule geniculato, herbaceo. *Silk-cotton*, with five-cornered, hairy leaves, and a jointed, herbaceous ſtalk.—In Jamaica it bloſſoms in the month of *November*.

34. Pinguin. — *Bromeliæ ſpecies.*

This uſeful plant has been claſſed with the *ananas* or pine apple, from the reſemblance of the leaves, tho' it is ſo diſtinct from it in every other reſpect, that it ſeems rather to be a different *genus*. It is common in every part of the iſland, being generally uſed for fencing paſture lands, planted on banks, and anſwering this purpoſe extremely well, as the prickly edges of its leaves, arched backwards, are very formidable to cattle. The leaves being ſtripped of their pulp, ſoaked in water, and then beaten with a wooden mallet, until the exterior coat is diſcharged, yield a ſtrong thready ſubſtance, or collection of fine fibres, not inferior to hemp, which is commonly twiſted by the Negroes into cattle-ropes, and wain-whips. Among the Spaniards it is manufactured into hammocks. An ingenious gentleman, of this iſland, ſent a ſmall quantity, a few years ſince, to North America for experiment, where it was worked into linen cloth, of an excellent ſubſtance and texture. The flower of this plant is exquiſitely beautiful, being compoſed of red, blue, and purple colours, variouſly intermingled, and ſurrounded with gloſſy leaves of ſcarlet, orange, and green, with ſome mixture of white. The fruit contains a very ſharp, acid juice, a ſmall quantity of which dropped into water, makes an admirable cooling draught in fevers; a teaſpoonful of it, corrected with ſugar, deſtroys worms in children, cleanſes and heals the thruſh, and other ulcerations in the mouth and throat; it is extremely diuretic, and in a large doſe is ſaid to cauſe abortion; it makes a very fine vinegar.

35. Cocoa-Nut Tree. — *Palma Indica coccifera.*

This tree is planted in moſt parts of the iſland, both for its beauty and productions. It thrives equally well in the low-lands as in the mountains, riſes to the height of 50 to 60 feet, and flouriſhes remarkably on the very margin of the ſea, planted in the ſand with a little mould. It is produced from the nut, which bears tranſplanting extremely

tremely well, though rendered more vigorous by mixing ſalt with the earth into which it is removed.

The ſubſtance which incloſes the ſhell is made up of tough fibres, of which the Indians make not only cordage, and other tackle for ſhips, but a kind of oakum for caulking, which is highly extolled. Steeped in water, and beaten like flax, it is manufactured into an excellent linen. After this coat is taken off, the ſhell makes its appearance, which takes a fine poliſh, and is often formed into drinking cups, ſet in ſilver. The ſhell is filled with a very agreeable, ſub-acid, cooling fluid, while young; but as the fruit advances, this concretes into a gelatinous coat adhering to the inſide of the ſhell, hardening with age, till it acquires a firm texture, when it reſembles an almond in flavour, and makes part in various preparations of the kitchen; it contains a large portion of oil, is wholeſome and nouriſhing.

The liquor is generally eſteemed highly antiſcorbutic, one of the pleaſanteſt drinks in America, and makes a ſalutary emulſion in fevers; it is alſo added in the diſtillation of rum, and thought to improve the flavour of that ſpirit.

The leaves of this tree are uſed for *thatch*, and the tender ſhoots at the top afford an agreeable green, or cabbage. The trunk is formed into gutters, and occaſionally employed for incloſing, and roofing outhouſes, and, being nailed cloſe, is ſo hardy as to reſiſt the weather for many years. The juice, obtained from the trunk by tapping, mixed and fermented with melaſſes, affords an excellent ſpirit. In order to make arrack from it, the tree muſt be kept from bearing fruit: for this purpoſe, the ſprout which produces the nut, and which ſhoots every month, is cut, and jars faſtened to it to receive the liquor; or the body is bored, and a plug put into the orifice, which is occaſionally taken out when the liquor is wanted: this liquor is ſuffered to ferment, and whilſt it is in this ſtate, it is diſtilled into the ſpirit called arrack, which far excels what is drawn from rice. If this liquor is expoſed to the ſun, it ſoon turns to vinegar; it muſt therefore be carried, immediately after it is collected, into a ſhady place.

Near the baſe of the larger branches or foot-ſtalks, is a web-like *plexus*, compoſed of fibres curiouſly interwoven by the hand of nature, which is the cloathing this tree is ſaid to afford; and is often uſed in this iſland for ſtrainers.

Conſidering this variety of productions, thoſe writers have not been guilty of much exaggeration, who aſſert, that it furniſhes meat, drink, phyſic, cloathing, lodging, and fuel.

36. Palm-Tree, or Oily Palm. — *Palma fructu luteo oleoſo.*

This tree is not ſo frequent in Jamaica as it deſerves, being chiefly cultivated by the Negroes only. The nuts are covered with an oily pulp; when they are roaſted, it taſtes very much like the outſide fat of roaſted mutton. The oil is obtained by boiling the nuts in water, when the oleaginous particles riſe to the ſurface, and are ſkimmed off, and ſtrained for uſe.

The Negroes are fond of this oil, which ſometimes makes an ingredient in their food; but they oftener apply it by way of embrocation, for ſtrains, or to diſcuſs rheumatic aches, for which purpoſes it is very efficacious.

37. Great Macaw Tree. — *Palma ſpinoſa major.*

The fruit of this tree, as well as that of the ſmaller macaw, is full of oil. The Negroes affirm this to be the tree which yields the true palm-oil. They make necklaces of the woody part of the ſeeds, which are black, round, flat, and about the ſize of what is called here the horſe-eye-bean, covered over with a yellow pulp, of which the macaw bird is exceſſively fond.

The outer coat of the body of the tree is remarkable for its ſolidity and toughneſs; which qualities recommended it to the Indians, who uſed to make their bows, and ſeveral other utenſils, with it. The inſide, or heart, is full of a pithy, farinaceous ſubſtance, reſembling that of the cabbage tree.

38. Leſser Palmeto, or Thatch Tree. — *Palma non ſpinoſa minor.*

The body of this tree is much uſed in piling for wharfs or buildings, having been found to ſtand the ſea-water very well, uncorroded by length of time, or the worm, which is not able to penetrate it.

The foot-ſtalks of the leaves are tough and flexible, ſerving, when they are ſplit and pared, to make baſkets, bow-ſtrings, chair-bottoms, and many other conveniencies; and the foliage is thought to afford the beſt,

beſt, and moſt durable, thatch. There are immenſe groves of them in the leeward parts of the iſland.

39. LARGER PALMETO. — *Palma non ſpinoſa major.*

The trunk and foot-ſtalk of the leaves anſwer the like purpoſes with the former, but eſteemed, if any thing, to have ſuperior toughneſs.

40. PALMETO-ROYAL. — *Palma Braſilienſis, caudice ſquamato, folio plicatili ſeu flabelli-forma* — Braſilian Palm, with a plaited or fan-ſhaped leaf, and a ſcaly ſtalk.

This is much larger-bodied and taller than the other palms. It has been ſuſpected, that the Spaniards obtain the gum called *caranna* from the trunk of this ſpecies, which is celebrated as a vulnerary and cephalic. This gum is hard, reſinous, and of a dark olive colour, inclining to green, of a ſweet ſmell, and ſomewhat aromatic flavour. When freſh, it is ductile as pitch; and, kindled, yields a fragrant odour. It is ſold at Carthagena, wrapped in plantain leaves; but the manner of collecting it is carefully kept ſecret.

This tree is frequent in Jamaica, particularly in the ſavannahs of Clarendon. The leaves are circular, and when divided through the middle to the extremity of the ſtalk, which is thick and ligneous, they form two fans, each being of about two feet diameter; theſe, when dried, and ſtained with different colours, are commodious inſtruments in hot countries, and very much uſed in the Spaniſh dominions. The leaves are a good thatch, eſpecially thoſe of the younger plants; and from the larger ones are made hats, ſmall baſkets, and other utenſils. The trunk of this tree is bullet-proof; and, cut into ſtockadoes, makes an excellent incloſure, equal to a ſtone-wall in reſiſting the attacks of an enemy.

41. PRICKLY POLE. — *Palma ſpinoſa minor.*

This tree bears ſmall, round, red berries, containing a ſweet yellowiſh pulp, of a very pleaſant taſte; the wild hogs and pigeons eat them with great avidity. The outward part of the trunk is extremely tough and elaſtic, of the colour of black ebony, and capable of a very high poliſh, reſembling whalebone.

It is uſed for launces and ramrods, and may be converted to various other uſes, ſuch as knife handles, &c. It is ſo hard, that the Indians uſed

uſed to make their arrow heads with it, ſharpened to a fine point, which was almoſt equal to iron. The prickles of this ſpecies, and the macaw, in their native ſtate, are very elegant toothpicks, and require only an eye to ſerve the purpoſe of needles for coarſe work. The Indians formerly are ſaid to have uſed them for a very inhuman purpoſe: after tying their priſoners of war to ſome tree, they took theſe thorns, and wrapping them in little pellets of cotton dipt in oil, ſtuck them into the ſides of the miſerable ſufferers, till they were briſtled like hedge-hogs.

42. Date Tree. — *Palma major*, ſeu *Phœnix dactilyfera*.

This tree has been cultivated in ſome few gardens, and ſeems to agree extremely well both with the ſoil and climate. The fruit is undoubtedly nutritive, as it conſtitutes no inconſiderable part of food among the Aſiatics. In Africa it grows naturally, and from thence probably the ſeeds planted here were obtained. Moſt authors affirm, that, unleſs the female or fruit-bearing trees have the aſſiſtance of the male, they are unprolific. In ſuch places, therefore, where there are no male trees near the female, the inhabitants cut off the bunches of male flowers when they are juſt opened, and, carrying them to the female trees, place them on the branches of the female flowers to impregnate them, which they ſay has the deſired effect, rendering thoſe trees fruitful, that would otherwiſe have been barren. The flowers of the male have ſix ſhort *ſtamina*, with narrow four-cornered ſummits filled with *farina*; the female flowers have no *ſtamina*, but have a roundiſh *germen*, which afterwards becomes an oval berry, with a thick pulp, incloſing a hard oblong ſtone, with a deep furrow running longitudinally. The bunches of fruit are ſometimes very large. Thoſe dates are eſteemed the beſt, which are large, ſoft, yellowiſh, with few or no wrinkles, and full of pulp, either of a good white throughout, or elſe reddiſh towards the ſurface, and white towards the kernel.

They are preſerved in three different ways; ſome preſſed, and dried; others preſſed more moderately; but the beſt are thoſe not preſſed at all; only moiſtened with the juice of other dates, as they are packed up in baſkets or ſkins.

In regard to their medicinal virtues, they are ſaid to ſtrengthen the ſtomach, ſtop looſeneſſes, and corroborate the inteſtines; they are alſo good in diſeaſes of the breaſt, and promote the expectoration of groſs humours;

humours; they are uſed for this intention ſometimes in pectoral decoctions. They are recommended likewiſe in the piles, taken in red wine.

The import duties on this article have no reſpect to what may be produced in our own colonies, but we can ſcarcely hope that it will be ſo extenſively cultivated here, as to become an article of remittance to Great Britain.

There are ſome in a garden at Spaniſh Town, which bear every year; and it is to be regretted, that their fruit is not diſperſed and planted annually in different parts of the iſland, more eſpecially in thoſe where the macaw, and other palms, naturally flouriſh; as the ſoil in ſuch parts is probably beſt ſuited to the date alſo. Without carrying the view ſo far forward, as to its becoming a commodity for export, it is worth cultivating for the ſake of the beauty of the tree, and the poſſeſſion of the freſh fruit for the uſe of the inhabitants.

In Upper Ægypt many families ſubſiſt almoſt entirely upon the fruit. The Ægyptians make a conſerve of the freſh dates, mixing them with ſugar; this has an agreeable taſte. The ſtones or kernels are as hard as horn, and nobody would imagine that any animal could eat them; but the Ægyptians break them, grind them in their hand-mills, and, for want of better food, give them to their camels, which eat them. In Barbary, they turn handſome beads for *Pater noſters* of theſe ſtones. Of the leaves they make baſkets, or rather a kind of ſhort bags, which are uſed in Turkey on journies, and in their houſes. In Ægypt they make fly-flaps of them, and bruſhes to clean their ſophas and cloaths. The hard boughs they uſe for fences about their gardens, and cages to keep their fowls in, which they carry to market. The trunk or ſtem is ſplit and uſed for the ſame purpoſes as the branches; they even uſe it for beams to build houſes, as it is ſtrong enough for ſmall buildings. It is likewiſe uſed for firing, when there is want of better; the wood is ſoft and ſpongy, and burns well. The web-like integument covering the tree between the boughs has threads, which run perpendicularly and horizontally croſſing each other; in the ſame manner as that of the cocoa-nut tree: this is of conſiderable uſe in Ægypt, where they make all their ropes and rigging of the ſmaller veſſels with it. It is eſteemed ſtrong and laſting [*w*].

[*w*] Haſſelquiſt.

43. BARBADOES

43. Barbadoes Cabbage Tree. — *Palma caudice ad infitum turgido.*

44. Jamaica Cabbage Tree, or Mountain Cabbage. — *Palma caudice æquali.*

These trees are in fact, I believe, the same species; and the difference between them in respect to their figure seems to be owing entirely to the situation in which they grow, whether in open ground, or in the midst of woods. In the former case, nothing hinders them from assuming that graceful form peculiar to their nature; in the latter, being inclosed on all sides with other lofty trees, they rise spindling, and often crooked; and seem to be confined in their growth to a continual ascent, preserving an uniformity of bulk in the shaft from the root upwards, until they have overtopped the whole wood.

The Barbadoes cabbage, which is planted here for ornament, is one of the most beautiful trees in the world. No limits seem to be set either to its age or ascent. Ligon mentions some at the first settlement of Barbadoes, above 200 feet in height. And Ray speaks of another of 270 feet, or thereabouts. One hundred feet is a very common height. It is propagated from the seeds. The upper part of the trunk, from whence the foliage springs, resembles a well-turned, finely polished baluster, of a lively green colour, gently swelling from its pedestal, and diminishing gradually to the top, where it expands into the branches, elegantly arranged, and waving like plumes of ostrich feathers. From the center of the summit rises the spatha or sheath, terminating in an acute point. The trunk itself is not less graceful, being a straight, smooth, slightly annulated column, large at the base, and tapering from thence to the insertion of the baluster or cabbage. This tree is so much reverenced for its majestic form, that it is not destroyed like the others for the sake of the cabbage.

The Jamaica mountain cabbage is cut for this purpose; and the cabbage stripped of its outer green coat appears perfectly white, cylindrical, and formed of several concentric *laminæ*. The inner tunicles are sliced, and either eaten raw, with onions, pepper, and vinegar, or boiled, and served up with butter; in which way, it most resembles the European cabbage in flavour; or converted into a pickle, in which state it is sent to Great Britain.

The

The outward texture of the trunk of theſe trees is uſed for laths, and other purpoſes. The ſpathæ are made into mats by the Negroes. The leaf is compoſed of longitudinal filaments, or thread-like fibres, which, being properly ſeparated, are ſpun like hemp, and formed into twine and cordage.

The tunicles are extremely thin, and may eaſily be exfoliated and dried; after being prepared in this manner, they may be wrote upon with a metallic pencil or *ſtylus*; and will retain the characters ſo long as the ſubſtance laſts, which may be as long as vellum, if care is taken to keep it dry; for this property, it ſeems to reſemble the *papyrus* of the ancients. The beſt cabbage is obtained from this tree when it is young, and not above 15 or 16 feet in height. From the real ſummit of the ſtem ſpring two branches full of ſmall flowers; theſe are followed by ſmall round berries, about the ſize of a hazel-nut, which are devoured by the birds, who mute the ſtone or ſeed, by which means there is a continual nurſery of theſe trees, which otherwiſe would ſoon be extirpated; for whenever they are cut down, no freſh ſhoot ariſes again from the root; and whenever robbed of their top or cabbage, they ceaſe from growing. The external coat of the trunk is impenetrable to a muſquet ball, though it is ſcarcely an inch thick. The Spaniards are ſaid to have caſed their buildings in the country parts with this covering, which made them defenſible againſt enemies, and equally proof againſt the aſſaults of earthquakes and hurricanes.

Within this hard integument is a pithy, farinaceous ſubſtance, ſimilar to ſome other of the palm kind.

Dampier, ſpeaking of the trees growing in the iſland Mindanao, one of the Philippines, mentions a ſpecies called by the natives the *libby*. This tree is not unlike the cabbage, the bark and wood hard, and incloſing a white pith. They cut down the tree, and, ſplitting it in the middle, take out the pith, which they beat well in a mortar; then put it into a ſieve made from the ſame tree, and, pouring water upon it, ſtir it about, till the water carries the mealy part through into a trough placed underneath. After it has ſtood till it has ſettled, they pour off the water, and, taking out the ſediment, and drying it, bake it into cakes; this meal they call *ſago* or *ſagu*, which is exported to other parts of the world, dried in ſmall grains like comfits.

In Java it is called *bulum*, and according to Linnæus is made of the pith of the *cycas circinnalis*.

In the Moluccas the tree is called *laudan*, the pith of which furnishes them with this soft meal for bread, as the leaves serve them for the covering of their houses; and the larger veins for rafters, as the lesser make good cordage; while these leaves are young, they are covered with a kind of woolly substance, which affords materials for stuffs. They resemble the cocoa trees.

From these descriptions there is reason to believe that the sago tree is of the palm kind, as it bears affinity to those of the West Indies in most respects.

The ingenious Mr. Robinson, whom I have before mentioned, was of this opinion, and resolved to make some experiments upon this ground.

He took the pith of the mountain cabbage, caused it to be pounded, and the mealy part passed with water through a coarse cloth laid in a sieve. The experiment succeeded to his wish; he obtained a fine white meal in large quantity, which, in the judgement of many persons who tasted it, surpassed in goodness what was imported. It was in the form of an impalpable powder, and in this state boiled to a thickness much sooner than the common sago. That which comes from the East Indies is probably granulated by means of some gum intermixed with it; and the art of bringing it into a granulated form, is all that remains for perfecting the Jamaica manufacture; for Mr. Robinson doubted, whether in powder it might keep so long as in the granulated form, but there is no certainty that it would not.

This is a manufacture which might easily be entered upon, to some extent, in Jamaica, if necessary; and more particularly by settlers in the interior parts, where these trees are so abundant; at least, it may be of service to them to be informed of the means, by which they can furnish their families with so nourishing and restorative an aliment, with very little trouble.

45. Mahoe, or Bark Tree. — *Althæa maritima arborescens.*

This tree is frequent by the sea side, in many parts of the island, particularly about Portland Point, and the coasts of Vere. It bears a yellow flower. The bark is exceedingly tough, and not inferior to hemp or flax in utility and strength. It is naturally white, and of a fine, soft, filamentous texture; which recommends it as very fit for the paper-mill. Ropes are made of it for plantation use, which, if they

were tarred and well twiſted, would be equal to thoſe made from the beſt hemp. All the parts of this tree, eſpecially the flowers, abound with a mucilage, emollient, and laxative.

46. Smaller Mahoe. — *Althæa fruteſcens aquatica.*

This is generally found in marſhy places, and on the banks of rivers. It bears a ſmall yellow flower. The bark is not ſo ſtrong as that of the former, but the Negroes uſe it to tie up their bundles of Scotch graſs, and ſometimes twiſt it into ropes.

47. Mountain Mahoe. — *Hibiſcus arboreus.*

This tree grows to a conſiderable ſize, and is frequent in the woods. It bears a large open yellow flower, not unlike thoſe of the yellow lily. It is generally reckoned an excellent timber tree. All the tender parts of it are mucilaginous, and uſed upon occaſion for the ſame intention as the other medicines of this tribe.

There is another ſpecies, which bears a red flower.

48. Bur-Bark. — *Triumfetta.*

This plant is frequent in the iſland, and riſes to the height of ſix or ſeven feet in a rich moiſt ſoil. The bark is tough and ſtrong, and ſerves for ropes, and other conveniencies of the like kind.

49. Prickly-Bark Tree. — *Hibiſcus arboreus, foliis ſub-rotundo angulatis.*

This is rare in Jamaica. It is found in the woods of St. Anne. The inward bark is very tough, and fit for ropes; but it is coarſer and more fibrous than that of the mahoe.

50. Laghetto, or Lace-Bark Tree. — *Frutex foliis majoribus.*

It has a laurel-like leaf, and therefore called by Sloane *arbor lauri-folia.* It is common in the woods of Vere, Clarendon, and St. Elizabeth. The inner bark is of a fine texture, very tough, and diviſible into a number of thin filamentous *lamina*, which, being ſoaked in water, may be drawn out by the fingers into a *reticulum*, reſembling fine lace ſo nearly as to be ſcarce diſtinguiſhed from it.

The ladies of the iſland are extremely dextrous in making caps, ruffles, and compleat ſuits of lace with it; in order to bleach it, after being drawn

drawn out as much as it will bear, they expose it stretched to the sunshine, and sprinkle it frequently with water.

It bears washing extremely well, with common soap, or the coratoe soap, and acquires a degree of whiteness equal to the best artificial lace.

There is no doubt but very fine cloaths might be made with it, and perhaps paper. The wild Negroes have made apparel with it, of a very durable nature.

The common use to which it is at present applied is rope-making. The Spaniards are said to work it into cables; and the Indians employ it in a variety of different fabrics. It may, perhaps, be of service to Great Britain as a manufacturing nation, that the inhabitants of these colonies are very seldom disposed to improve what nature offers, or apply many productions here to the obvious uses for which they are intended. Necessity, that great spur to such improvement, is wanting to stimulate; or otherwise, they would soon find out methods of turning them to account.

51. Bonace-Bark. — *Arbor cortice fisso, foliis oblongis, &c.* Browne, 372.

This tree is common near Montego Bay, where it grows to a moderate size. The bark makes very good ropes; it spreads or dilates like the Laghetto bark, but neither altogether so free nor regular.

52. White-Bully Tree, or Galimeta Wood. — *Salicis folis-lato arbor, &c.* Slo. Cat. 170. Achras, 8. Browne, 201.

This tree is most usually found in the low-lands, especially about Liguanea and Manchineel. The bark of it answers all the purposes of the Jesuit's bark in robust constitutions, when the disease proceeds from a weakness of the *viscera*, and a gross undigested chyle. It is a safe and convenient medicine to be administered in Great Britain; but thought not so safe nor proper in Jamaica, where those fevers that generally put on the appearance of intermittents, are attended with nervous symptoms, and require more active and stimulant medicines; for which reason the Jesuit's bark is preferred for use in this island. But as the Jamaica bark is found to answer, as a strong astringent, all the purposes of the Jesuit's bark in the British climate; and the latter is a very

very expenſive medicine, being often retailed at half a guinea a pound, the Jamaica bark would form a good ſubſtitute, and be found equally effectual as the other in the intermittents, moſt prevalent in that climate.

After the great fire, which deſtroyed Port Royal in 1703, Jeſuit's bark became ſo ſcarce in Jamaica, that few practitioners could procure any; upon which they had reſource to the galimeta bark, and adminiſtered it with good ſucceſs, but were obliged to encreaſe the doſe to a much larger quantity. Not long after they found out another bark, which anſwered every purpoſe of the Jeſuit's; this was the

53. Locus, *or* Lotus-tree.—*Loti arboris folio anguſtiore, rubro flore, fructu polyſpermo, umbilicato.* Sloane, *Cat.* 162. *Qu? Achras* 4 *of* Browne, *p.* 201. Beef-wood?

It has a very beautiful reddiſh flower, the fruit round, and about the ſize of the American *clammy-cherry*, or *malphigia*; of a yellowiſh colour, and agreeable taſte; and contains a ſtone, or ſeed. The bark, taken from the limbs and ſmaller branches, is of the ſame complexion, in all reſpects, as the *Peruvian quill* bark (which is eſteemed the beſt) and cures intermittent fevers equally as well, as has been often experienced. There is another ſpecies, the flowers of which are more yellow, and the fruit much ſmaller, but of the ſame nature.

54. Black-olive, or Bark-tree—*Buceras.*

This tree is a native of the lower ſwampy lands, and grows to a conſiderable ſize. It is the ſame as the French oak of Antigua. The bark, mixed with that of the mangrove tree, is much eſteemed for tanning leather; and an excellent ſtyptic water may be made from it. The wood of the tree is a very fine timber.

55. Button-tree, or Button-wood—*Conocarpus* 2*dus Br. p.* 159. *Alnifructu laurifolia arbor, Sl. Cat.* 135.

This tree grows luxuriantly in all low ſandy bays and marſhes round the iſland, and may be propagated by ſlips or cuttings; the bark tans leather well; the fruit is drying, binding, and healing.

56. Yaw-

56. YAW-WEED, or upright WOODBIND, or HONEY-SUCKLE, with oval leaves—*Morinda*, an *Periclymenum?*

There are ſeveral ſpecies of this plant; it is common in the low-lands, and frequently found climbing among the buſhes in all the lower hills; one of them, which riſes to the height of twelve feet, and bears ſcarlet flowers, is ſuppoſed to be the *Chili itiu*, or *periclymenum*, uſed by the Indians in dying. The roots of all theſe ſpecies, boiled, colour linens of a dark hue, and probably might be a uſeful ingredient among the dyers; for they will make a tolerable ink: and it is affirmed, that the colour is ſo permanent, it cannot be waſhed out.

The *periclymenum* of Jamaica, with round bunches of flowers at the end of the branches, and oval leaves, growing in whirls, with foot ſtalks, the flowers of a coral-colour, ſeems to approach neareſt in affinity to that of *Chili*. It riſes with a ſhrubby ſtalk, ten or twelve feet high, ſending out many ſlender branches, covered with a light brown bark, and garniſhed with oval leaves, near two inches long, and one inch and a quarter broad; four of them coming out at each joint, in whirls round the ſtalk; they ſtand upon ſhort foot-ſtalks, and have one ſtrong mid-rib, with ſeveral veins running from the mid-rib to the ſides. The flowers appear in round bunches at the end of the branches; they are of a deep coral colour on their outſide, but of a pale red within.

That of Chili agrees in moſt points, except that the bark is greyiſh, the leaves are pointed, and the flowers are ſucceeded by oval berries, the ſize of ſmall olives, and are cut into four ſegments at the top.

Some varieties may happen in plants of the ſame *genus* from ſoil and climate; but as all of this claſs in Jamaica are found to poſſeſs this dyeing quality, in ſome degree, ſo the ſuperiority may be decided by ſkilful experiment; and there is no doubt, but theſe roots may become a valuable addition to the articles proper for export, if, upon trial, they are found not to loſe their quality, by moderate keeping, or in their dry ſtate.

57. SWEET-WOOD, or SHRUBBY SWEET-WOOD—*Amyris*.

Profeſſor *Linnæus*, having obtained a ſpecimen of the balſam of *Mecca* tree, was of opinion, that it was a ſpecies of this *genus*.

Mr.

Mr. *Robinſon*, purſuing this hint, found three ſpecies, differing only from each other in the ſize of the trees, dimenſions of their leaf, and greater or leſs *aroma* of their bark and wood.

They grow in great abundance on the rocky hills of the Southſide coaſt, and other parts more inland; and are remarkably frequent in Healthſhire, in St. Catharine.

Their leaves and bark are impregnated with a fine, balſamic juice, and, if the body was tapped at the proper ſeaſon of the year (ſuppoſed to be Auguſt) might be found to tranſude a thick liquor reſembling that of the Gilead balſam, to which the taſte of this bark, and wood of the ſmaller branches, bears a very exact relation.

The leaves, infuſed in boiling water, after the manner of tea, have a very pleaſant flavour, and odoriferous ſcent, and may be drank with milk and ſugar, inſtead of tea.

This infuſion is highly cephalick, ſtrengthens the nerves, and is particularly reſtorative to weak eyes; inſomuch, that I knew a gentleman, who, by the conſtant uſe of it for ſome weeks by way of breakfaſt, was able to read a ſmall print, and view objects diſtinctly, without the aſſiſtance of ſpectacles, which he had been unable to do for ſome years before.

The leaves, dried thoroughly in the ſhade, might be very ſecurely packed, and exported, for further trial of their virtues, which, in Jamaica, did not ſeem to be impaired by their dryneſs, or length of keeping.

There is then the ſtrongeſt reaſon to believe, that the *amyris* may, by inciſion, produce a balſam, not much inferior to the celebrated balm of *Gilead*, or *opobalſamum*; which, for better information of the inquiſitive reader, I ſhall here deſcribe, from competent authority. It is a liquid reſin, of a very light yellowiſh colour, and a fragrant ſmell, not unlike that of citrons; but the taſte is acrid and aromatic. It is pellucid, tenacious, or glutinous, ſticking to the fingers, and may be drawn into long threads. It ſcarcely ever becomes fluid or liquid, by the heat of the ſun, in the weſterly part of Aſian Turkey, where it is produced.

Its virtues are ſaid to be theſe. It is one of the beſt ſtomachics known, if taken to three grains, to ſtrengthen a weak ſtomach. It is a capital

a capital vulnerary; for, if applied to a freſh wound, it cures it in a very ſhort time.

When freſh, it is ſaid to have a much greater efficacy, than when old.

It is given internally againſt putrefaction of the *viſcera*, and abſceſſes of the lungs, liver, and kidnies. It alſo cleanſes foul ulcers, and heals them very ſoon. But it is difficult to obtain it unſophiſticated; for which, and other reaſons, it well deſerves the experiment of ingenious gentlemen in this iſland, to find if a balſam, or reſin, be obtainable from the *amyris*; ſince the diſcovery would naturally lead to form ſuch a ſubſtitute for the true balſam, which is ſo ſeldom to be got in its genuine ſtate; and there ſeems no weak ground for preſuming, that this ſubſtitute would anſwer ſimilar good purpoſes in medicine.

58. Calibash—*Creſcentia.*

This tree grows univerſally in Jamaica. The wood is very tough, and fitter for the coach-makers uſe than any other ſort of timber known. The ſhell of the fruit reſembles a gourd, is of various ſize and capacity, from an ounce to a gallon; and is uſed by the Negroes to hold water, or rum. It is thin, but of a cloſe, firm texture, and ſerves to boil water, or even broth, as well as an earthen-pot. The thicker and more ſubſtantial parts are frequently ſcooped into button-moulds, in all the Weſt India iſlands. The Negroes ſupply themſelves, from this tree, with very convenient, and not inelegant, cups, ſaucers, bowls, punch, and other ladles, ſpoons, and other utenſils, of various ſhapes and ſizes; upon ſome of which they beſtow the beſt carved work in their power.

They ſteep the ſeeds in water, which makes a tart, cooling beverage. With the pulp they cure burns, applying it in form of a cataplaſm, and renewing it every ſix hours.

The pulp of the green fruit is ſaid to cauſe abortion, and even to make cows and mares caſt their young; for which reaſon they are carefully kept from eating of it in dry ſeaſons; at which times only they are prompted to it, by ſcarcity of other food.

59. WILD-CANE.—*Arundo Indica*, Bambu *ſpecies*.

This grows in all the river courſes throughout the iſland. It is full of pith, and reſembles the oriental *bambu* in every reſpect, but dimenſions. The foliage, when dried, is uſed for thatch. The tender tops of the young plants, gathered after they juſt ſpring out of the ground, are boiled, and made into an agreeable pickle. The ſtem or cane is uſed for wattles or laths, for covering the walls, cieling, and roofs of buildings; and, if ſmoak-dried over a fire, previous to their being employed for theſe purpoſes, will laſt undecayed ſo long as they are kept from rain. When ſplit into ſlips, and cleared of the pith, it makes exceeding good baſket-work. The Negroes manufacture it, and the baſkets uſed on plantations are generally made of it.

An ingenious gentleman of this iſland, Mr. Wallen, has ſome of the oriental *bambu* cane growing upon his eſtate, called Chiſwick St. Thomas in the Eaſt, from which it is hoped this uſeful plant may be propagated in other parts of the iſland [x].

It is well known, that the bambu attains to a prodigious magnitude, and is converted into a variety of utenſils by the Eaſt Indians. The inner-bark of it is made into paper, extremely thin. It is ſaid, when theſe plants are young, the Chineſe draw from them a juice of very agreeable taſte, from which they prepare a delicious ſauce, called *achar*. The leaves are commonly put round the tea-cheſts, imported into Great Britain, faſtened together, ſo as to form a kind of mat.

Some authors relate, that in China this cane grows ſo large, that ſmall canoes or boats are made out of it. It is certain, it may be regarded as a valuable acquiſition to this iſland; and, if it reaches but to moderate bulk here, will be found extremely commodious for huts, and ſmaller buildings, various plantation utenſils, conduit pipes, and other neceſſary uſes.

60. LILAC, or HOOP-TREE, — *Syringa baccifera*.

There are ſeveral ſpecies of the lilac; what has been introduced into this iſland bears a beautiful flower, in which, white, purple, and crimſon, are variouſly intermingled. It grows from the ſeed very rapidly in almoſt every ſoil, but is moſt luxuriant on the banks of rivers, or

[x] I am informed, it was brought from Hiſpaniola; and, having been diſperſed by this gentleman, and Mr. Ellis of Jamaica, ſince its firſt introduction, it is now flouriſhing in many different parts of our iſland; where, its growth is aſtoniſhingly rapid.

running ſtreams. By the falling of the berries, and their diſperſion in the currents of water, near which they grow, as well as by the induſtry of birds, it has been very extenſively multiplied. To prepare the tree for *hoops*, the ſide-twigs and branches ſhould be regularly trimmed and lopped cloſe to the ſtem, as it proceeds in growth; it is fit for uſe in two years from the planting the ſeed. It may then be cut, and the ſtem ſplit longitudinally into pieces of proper length and thickneſs, and after being duly ſhaved, the hoops are ſmoak-dried on a barbicue (formed by four forked ſtakes, placed ſo as make the angles of a ſquare, and croſs bars laid to bear upon the fork or crutch) over a fire made with wood or traſh, till they appear well ſeaſoned and fit for uſe. They will prove ſufficiently durable for ſugar hogſheads, coffee caſks, and ſuch like.

Theſe trees are ſubject to be bored by a beetle of the *ſcarabæus* ſpecies, which it is not eaſy to deſtroy; but, perhaps, a compoſition of tar and aloes might defend them from it.

The bark makes good *ropes*, for ordinary purpoſes.

61. Logwood, — *Hæmatoxylum.*

It ſeeds in April. The ſeed is very periſhable, ſoon loſing its vegetative principle. The ſeaſon for ſowing it ſhould not be too wet, otherwiſe it will rot in the ground. In the neighbourhood of Savannah la Mar are ſuch quantities of it growing wild, as to incommode the land-holders extremely; occupying that diſtrict, as the opopinax and caſhaw have the Southern parts of Middleſex county; but the logwood is ſo luxuriant and hardy after it comes up, that it will overrun the other two, and ſtarve their growth. It was firſt propagated in this iſland in the year 1715, from ſome ſeed brought from the Bay of Campeche, with deſign to eſtabliſh it as an article of export, and prevent the neceſſity of forming ſettlements upon the bays of the Spaniſh Main, where the cutters were liable to great riſques, by working up to their knees in water, and conſtantly harraſſed by the ſtings of innumerable muſquito gnats, and the aſſaults of the Spaniards; but, although the event did not fully correſpond with the benevolent intentions of thoſe who firſt cultivated it here, it has anſwered many uſeful purpoſes.

Excluſive of its merit as a dye, it poſſeſſes other good qualities; it makes an excellent and beautiful fence, which, if kept properly trimmed, grows ſo ſtrong and thick, that nothing can break through.

The

The ſmaller ſtems, if of good length, are made into hoops, where better materials are wanting. The wood gives a purple tincture by infuſion, which is eaſily changed or heightened, by acid or alcalious mixtures. The bark and gum are gentle ſubaſtringents; but the laſt excels, and adds a ſweetneſs to its virtue, which renders it more agreeable to the palate. It is found very efficacious in looſeneſs; for if two ounces of the chips are boiled in a quart of milk, and a quart of water, to one quart, and a tea-cup full of this decoction be given every three hours, it ſeldom fails to cure a common diarrhœa.

The growth of this tree is ſo quick, that it will riſe, in proper ſoils, to the height of ten feet in three years. If an advantage is propoſed to be made by the wood, the ſeeds ought to be ſown in ſwampy lands, ſuch as thoſe about Black River, and all the branches permitted to remain, which will be of great uſe, in augmenting the bulk of their ſtems.

In preparing it for market, the wood is cut into junks or logs, of about three feet length, and cleared of the rind or bark; this is called chipt logwood. It is choſen in the largeſt thickeſt pieces, ſound, and of a deep red colour. The current price is from 3*l.* 15*s.* to 4*l.* 4*s.* ſterling, at the Britiſh market.

62. Fringrigo, or Cockspur. — *Piſonea Aculeata.* Browne, *p.* 358. *Paliuro affinis arbor ſpinoſa.* Slo. cat. *p.* 137.

The ſeeds are glutinous and burry, ſticking ſo faſt ſometimes to the ground-doves, and pea-doves (which feed upon them), as to prevent their making uſe of their wings. The ſtem is often uſed for hoops. The root is a ſpecific among the Negroes, for the cure of the *gonnorrhœa ſimplex.* The leaves, chopped and mixed with corn, are given to horſes, to free them from bots and worms.

63. Hoopwithe. — *Rivinia ſcandens.*

This plant is very common in the lowlands, and ſtretches a great way among the neighbouring ſhrubs and buſhes. The berries make the principal part of the food of the nightingale, while they are in ſeaſon. They contain a very oily ſeed, and after that bird has ſwallowed a good many of them, it flies to the next pepper buſh, and picks a few of theſe warm berries alſo, by way of promoting digeſtion.

The ſtalk is very tough and flexile, and often made into *hoops*; but they are not in eſteem for long voyages, as being not ſo ſtrong nor durable as ſome others.

64. Horse-wood, or Hoop-wood. — *Zygia.*

This ſhrub is common at the North-ſide, it grows generally in low, moiſt lands; but is likewiſe found in the mountains: the wood is pretty tough, and ſometimes cut for *hoops*.

65. Birch-tree. — *Terebinthus*, vel *Piſtaciæ ſpecies.*

This is very common in all the Southern hills and lowlands. The wood makes excellent cattle yoaks. The bark is thick, and tranſudes a clear tranſparent reſin, very odoriferous, and reſembling *maſtic*; but it yields a conſiderable quantity of a more fluid reſin, by inciſion; which has much of the ſmell and appearance of *turpentine*, and may be uſed for the ſame purpoſes.

The bark of the root, has been conjectured to be the *ſima rouba* of the ſhops, the moſt effectual remedy hitherto known in bloody fluxes, given in decoction of one or two drachms to a quart of water. It is certain they are very ſimilar in appearance.

The *ſimi rouba* grows in Guiana, but has not yet been ſufficiently deſcribed, ſo as to determine the analogy with more exactneſs.

66. Fern-tree. — *Adianthum maximum, ramoſum, arboreſcens.*

There are near 100 varieties of the fern and maidenhair, ſcattered over this iſland, which are endued with the like qualities as thoſe of Europe.

In many parts of England it is common to burn them, and make balls of the aſhes for bucking or cleanſing coarſe linen; before they are uſed, they are made red hot in the fire, and readily fall into powder when thrown into water. The root of the female ferns, which are diſtinguiſhed by the black colour of the lower part of the ſtalk, powdered and mixed with honey, has been given to a drachm or upwards with great ſucceſs for deſtroying the *tænia*, or tape worm.

The trunk of the fern tree is hard, and ligneous, often riſing to the height of ſix or eight feet; it is extremely durable, reſiſts all weathers, and is frequently uſed for hog-ſtie poſts, and other incloſures.

64. Brancdhe

67. Branched Horse-tail. — *Equiſetum ramoſum.*

This plant is commonly found about the river courſes of the North ſide.

When dried, it is uſed by the *cabinet-makers*, to give a poliſh or finiſhing to their work; for the ſurface of it is like a fine file, furniſhed with ſhort delicate denticles, which rub off the ſmall protuberances of the wood by ſlow degrees, and cauſe it to become ſmooth and ſhining.

Dried and powdered, it is eſteemed a ſpecific for ſtopping internal or external hæmorrhages of blood; and healing ulcers and excoriations, ſtrewed upon the part affected.

It is likewiſe recommended in coughs, and cattarrhs.

68. Trumpet-tree, or Snakewood. — *Coilotapalus.*

This tree grows in moſt of the woody parts and gullies; but particularly at the North ſide, where it riſes to a conſiderable height.

The leaves and flowers are eaten by the Negroes in their broths. The fruits or berries reſemble the raſpberry and ſtrawberry, in taſte and flavour, for which reaſon they are very agreeable to European ſtomachs. The bark is ſtrong, and frequently uſed for all ſorts of cordage. The leaves are good fodder for cattle. The trunk is very light and hollow. This tree is probably a ſpecies of the balza, mentioned by Ulloa, of which the Indians of Guiaquil form convenient rafts, by placing nine or ten pieces of about 36 feet long each, ſide by ſide, and bracing them cloſe with croſs pieces well laſhed, on which they tranſport all ſort of merchandize.

Similar floats are likewiſe made with the trumpet-tree in Braſil, called *jangaras*; with which they croſs rivers. The Indian name for the balza-float is (according to Ulloa) *jangada*; which ſimilitude confirms the opinion that the ſpecies are alike, though the trees of the continent may probably be of much greater bulk than what are found in this iſland.

The juice of the tender tops are ſubaſtringent and medicinal in immoderate fluxes. The leaves, bruiſed and made into a poultice, are an admirable vulnerary. The dry wood ſoon kindles into a blaze, by friction with a piece of harder wood. The Negroes, who have recourſe to it for this purpoſe, make a ſmall hole, with the

the point of a knife, in a dry piece of the trumpet-tree; then fix it between their feet, and, ſharpening the harder wood to fit the hole, twirl it rapidly with the palms of both hands till the fire is kindled.

The trunk and branches yield a great quantity of fixed ſalt, much heavier than any other wood-aſhes, and making a far ſtronger *lixivium:* for this property, it has formerly been adminiſtered with ſucceſs in dropſical habits. But the French planters have applied it to a much better uſe: they mix a quantity of it in their coppers, to deſpumate and granulate their ſugars, when the juices are ſo viſcid, that the alkaline ſalts of the lime will not procure this effect.

The cane-liquor, either by the foulneſs of the ground, or the plants being too old, bruiſed, or rat-eaten, will often acquire an uncommon degree of ſharpneſs, not inferior to the acid of lemons, which renders it black and ſyrupy. In this caſe, as well as when the liquor is obtained from canes growing in rank, freſh ſoils, the trumpet-tree aſhes promiſe to bring on the granulation beyond any other ingredient that can be uſed. Its operation may be aſſiſted by additions of lime-water, where a ſourneſs prevails; or of clear water, where the liquor is too viſcid. The acid principle, by theſe infuſions, may be gradually abſorbed, and neutralized; and, in order to depurate it from thoſe particles which by intermixture often darken its complexion, about four ounces of finely-powdered allum to every one hundred gallons of liquor, may be thrown into the ſecond tache; which will precipitate ſuch feculencies. Before the liquor is caſt from the firſt tache, it ſhould be ſuffered to ſtand undiſturbed by the ladle for a ſhort time, and then paſſed through a good ſtrainer; and, if the laſt ladle-full or two appear dirty, they may be given to the ſtill-houſe.

The great rankneſs of the North-ſide canes, owing to the freſh and rich quality of the ſoil, occaſions their liquor to be very commonly in the ſtate before-deſcribed. In theſe places, the trumpet-trees are always found in greateſt abundance; nature having furniſhed the planter with this remedy ever at hand, if he is diſpoſed to make uſe of it.

69. Indian

69. Indian Arrow-root. — *Maranta.*

The origin of the name is ſaid to be this. An Indian, being taken priſoner after he had wounded an European with a poiſoned arrow, was put to the torture, till he promiſed to cure him; and performed it effectually with the root of this plant, applying it bruiſed in form of a poultice, and giving the juice inwardly.

It has a ſtalk and leaf exactly like the plant called Indian ſhot; but the flower differs; that of the latter being a beautiful ſcarlet; and that of the former, milk-white.

The leaves fall in December, and the root is fit to dig in January.

A gentlewoman of the iſland, having been bitten on one of her fingers by a black ſpider, the part became inflamed, and her whole arm was ſwelled quite to the ſhoulder; the pain of which threw her into a fever, and ſymptoms of fits, in leſs than an hour. But ſome of this root being procured, and applied bruiſed, ſhe was greatly relieved in half an hour's time. In two hours, a freſh poultice of the ſame ſort was put on; which ſtill brought more eaſe, abated the fever, and in twenty-four hours ſhe was perfectly well again. I have mentioned, in another place, the powerful effects of this root, in counter-working the poiſon of the dog's-bane, or *nerium*.

It has been adminiſtered alſo with very good effect in malignant fevers, when all other remedies failed. It is given in decoction, but moſt approved in powder, in a doſe of one to two drachms. It has no ill taſte or ſmell, operates chiefly by ſweat and urine, and yet is a very ſingular cordial; ſo that, if it was to be candied like the eringo-root, it would form an agreeable preſerve, and poſſeſs the like prolific virtues. The root is mealy; but may be kept perfectly ſound for many years, as no inſect will meddle with it. Waſhed, dried, and reduced to an impalpable powder, it makes an excellent ſtarch; and has been uſed as a *ſuccedaneum* for the common ſort.

70. Stiptic, or Velvet-bur. — *Verbena.* 5 Browne, p. 116.

This plant is applied to bleeding wounds, and thought ſo powerful a ſtyptic, as to ſtop an hæmorrhage even when ſome of the principal arteries are cut. It is likewiſe an excellent application in all manner of ſores in relaxed habits.

71. Velvet-

71. Velvet-leaf. — *Clematis baccifera*, &c. Sl. Hist. p. 200.

This plant grows in great plenty commonly amongst ebony-trees, climbing about them. Its leaves are as soft as velvet, rounding, of a yellowish-green colour. It is a great vulnerary, applying only one of the leaves to the wound; and heals ulcers in the lungs, a syrup being made with the leaves and roots; which has performed very extraordinary cures in consumptive cases.

72. Vervain. — *Verbena, folio subrotundo, serrato, flore cæruleo.*

This differs not in appearance from the English vervain in leaf, flower, or seed, except that the leaf is somewhat rounder, and it is green here all the year round. It is esteemed a very powerful remedy in worm-cases. The death of most children in America is occasioned by these reptiles, which are propagated (it has been supposed) by too great indulgence in fruits. The juice of the vervain-leaves, joined with the contrayerva, and made into infusion with Madeira wine, expels them, and checks the fever consequent to these disorders.

73. Hogweed. — *Boerhavia.* Browne, p. 123.

This is thought to be a species of valerian. The leaves are gathered for the hogs, who devour them very greedily; and they are looked upon as a fattening and wholesome food for them.

74. Broad-leafed Commelina. — *Commelina, foliis ovato-lanceolatis, acutis, caule procumbente glabro.*

This plant is an annual; has oval, spear-shaped, pointed leaves, and a smooth, trailing stalk, near two feet long: these put out roots at the joints, which strike into the ground. At each joint is one oval, spear-shaped leaf, ending in a point. The flowers come out from the bosom of the leaves, inclosed in a spatha, which is compressed and shut up. It is an excellent fodder for most kinds of cattle.

75. Rush. — *Scirpus.*

There are six species, growing in moist places and ditches, observable in this island. The smaller are proper for candles; the larger for mats and chair-bottoms.

76. Reed-

76. Reed-mace, or Cat's-tail. — *Typha.*

This is commonly found in all the lagoons. The leaves are long and enſiformed. They make excellent mats. The ſeeds have a ſtupifying quality; and, when pounded and mixed with butter, or other proper ſubſtance, deſtroy mice.

An unguent is prepared of them, with hog's lard, for burns, or ſcalds. The ſeeds are eſculent, roaſted.

77. Scotch-grass. — *Panicum majus.*

This graſs obtained its name from a part of Barbadoes, called Scotland; from whence it was originally brought. It thrives luxuriantly in all low, marſhy places, and in the brackiſh rivers. It is propagated by the joints, ſet in holes, placed about two feet and an half aſunder. In ſix months, from the time of planting, it is fit to cut; and continues to be cut every month, or ſix weeks, after, if the ſeaſons are favourable, and the land cleared of weeds. An acre of proper ſoil, well-ſtocked with this plant, near the towns, has been computed to yield, in ſeaſonable years, a profit of above 120 *l.*; which is ſuperior to the yielding of the ſugar-cane, or almoſt any other vegetable production that is cultivated here.

When once planted, it holds for many years; but young joints muſt be occaſionally ſet, in the room of the old, ſtubbed, and hard ſtalks. It is a hearty fodder for horſes, or cattle.

78. { Guiney Corn. — *Panicum erectum maximum, paniculâ ſingulari.*
Guiney Wheat. — *Panicum erectum maximum, paniculis plurimis.* }

The former of theſe is more univerſally cultivated, and thrives well in the ſavannah lands. The grain of both ſpecies is ſimilar in appearance, and of the millet-kind. It yields a fine, white flour, very nouriſhing, and conſtitutes a principal part of the food of the Negroes. It is likewiſe the proper grain for poultry; and ſometimes is given to horſes and hogs, but to very little purpoſe, being ſo ſmall, that it paſſes through them entire. The ſtalks are an excellent fodder, and, when dried, may be laid up in a rick, for the

uſe of labouring cattle in dry years. It ripens in three months from the time of planting.

79. Barbary Corn, or Millet. — *Panicum Mauritanum.*

I have ſeen this growing extremely well in a gentleman's garden on the South-ſide. The grain reſembled the Guiney corn, except that it appeared ſomewhat larger. It is perfectly adapted to the ſoil and climate of this iſland, and will therefore become without doubt more generally cultivated. The ſeed was brought from Mogadore, a ſea-port town on the coaſt of Morocco.

80. Great Corn, or Indian Maize. —*Zea.* With yellow Grains.

This is univerſally cultivated throughout the iſland; but thrives moſt luxuriantly, and bears the largeſt grain, in the richer ſoils, and where the ſeaſons are favourable. It is a hearty, wholeſome food among the Negroes, who make it into various meſſes, according to their fancy. It is given to horſes and mules, inſtead of oats, and to ſheep and poultry, in order to fatten them.

It was probably brought from Guiney, where it is ſaid to require a hilly, good ſoil, not ſubject to be over-flown; whereas the rice and millet thrive beſt in low, moiſt grounds.

It is generally planted here a little before the uſual periods of the rainy ſeaſons, though ſome plant it indifferently at any time, and frequently fail; but it is uſual to get two crops in the year.

It is laid in rows, at the depth of three or four inches. As ſoon as it appears ſix inches above the ſurface, it is weeded; and, when grown to a tolerable height, the earth is moulded up about the roots.

The ears have from two hundred to two hundred and forty grains; and, allowing three ſpikes to each ſtem, and three ſtems to one ſeed, the produce from each ſingle grain is two thouſand for one. They are often gathered before they are thoroughly ripe; and, being roaſted, form a diſh known here by the name of *mutton.* The ſtalks are full of a ſaccharine juice, from which a ſyrup may be made, as ſweet as ſugar. Theſe ſtalks are an excellent, hearty fodder for cattle, and may be ſtacked like thoſe of the Guiney corn, for proviſion in times of drought. This plant is thought to impoveriſh

verifh land; and, confidering the rich juices of the ftalk, and greatnefs of yielding, it undoubtedly requires as good and ftrong a foil as the fugar-cane: for this reafon, thofe planters are much blamed who cultivate it on the banks between their young canes; for, the ufe of thefe banks being to be drawn down, and apply nourifhment to the canes in the courfe of their growth, they are too much exhaufted by the maize, which feems to abforb and extract nutriment from the fame vegetable principles as the fugar-cane; and it muft confequently rob them of great part of that food of which they are in want, efpecially in the poorer, well-worked lands; though the objection is fo far from lying againft rich, frefh foils, that it may be very ferviceable in fuch, and affift to drain away that fuperfluity of the vegetative principles which throws up too rank and luxuriant a cane.

This opinion is ftrengthened by a common obfervation, that the maize-corn will not thrive well in foils where the fugar-cane will not thrive. But I have feen fine corn produced in a very poor, exhaufted piece of ground, by laying manure with every feed, or grain. And in North-America, near the fea-coaft, the Indians ufed to put two or three dead fifhes under or adjacent to each corn-hill; and by this means gained double the crop they would otherwife have got. The Englifh there learned the fame hufbandry, near the fifhing-ftages, where they could procure the heads and garbage of cod-fifh, in abundance, at no charge but the fetching.

In that continent, the feed is regularly planted after the plough; and the ears, when gathered, are threfhed with a flail; but, as this method breaks and bruifes them, a better way has been recommended; which is, to rub the ears hard againft the edge of a flat piece of iron; this feparates the grains from the hufk without hurting them. The hufks, as well as the ftalks, are good fodder for cattle. In Jamaica, the Negroes rub one ear againft another; and the callofity of their hands, added to this method, anfwers the purpofe of iron. When this corn has been well-dried in the fun, it will keep feveral years, if the weevil does not attack it; but it is remarked, that this infect is more apt to fall upon it while it is left in the ear, than when the grain is feparated, the fweet juice of the ftalk, perhaps, attracting them more than the corn itfelf. When it

is laid up in a granary, care is taken to keep it from dampneſs, and turn it occaſionally.

This corn does not make a good bread by itſelf; but, if the flour of it is mixed in the proportion of one pint to three pints of wheat-flour, it will anſwer for common uſe. The dough made with it is very heavy, and fermented with difficulty.

The Negroes parch and grind it into powder, ſometimes mixing a little ſugar with it. They eſteem it a dainty, and particularly convenient on a long journey.

But the more common way of uſing it is in puddings, after it has been well pounded in a wooden mortar.

All creatures fed with this corn have firm, fat fleſh. The pork of corn-fed hogs is eſteemed the fineſt in the world for flavour and goodneſs; the horſes, cattle, and mules, foddered on the leaves and huſks, are hardy, and enabled to go through the greateſt degree of labour; and the people, who make the grain a principal part of their diet, are healthy, ſtrong, and active.

The ears of it, while it is growing, are ſaid to be greatly hurt by cutting off the panicles, or beards, too late. They ought to be cut before the hoods, or huſks, open; and, by leaving a plant with its male ears at every twenty feet diſtance, all the female plants will be impregnated.

The meaſure, uſed here for ſale of this corn in the grain, is the common Wincheſter buſhel, of eight gallons. The price ſeldom varies much, being generally from 5*s.* to 6*s.* 3*d.* currency, or ſterling 3*s.* 6½*d.* to 4*s.* 5*d.*, *per* buſhel. What is imported from North-America is chiefly of the white, large, flat grain; which is ſold cheaper, but is reckoned far inferior in ſubſtance and goodneſs to the Jamaica product. In times of great ſcarcity, it has riſen to 10*s.* *per* buſhel; which ſerves to ſhew the advantage to be derived from a more extenſive cultivation of it in the iſland, as the failure of importation from North-America always cauſes a ſcarcity, or gives an opening for an impoſition, the inhabitants not raiſing much above half enough for their own conſumption. In the midland parts, where the ſoil is rich, the ſeaſons regular, and canes would grow too luxuriantly, it may be cultivated with the greateſt ſucceſs.

81. WILD

81. Wild Oats. — *Pharus.* Browne, 344.

This plant is frequent in all the woody hills, and eſteemed an hearty, wholeſome food for all ſorts of cattle, being generally gathered for them in times of drought.

82. Larger Millet-Reed. — *Arundo ſylveſtris ramoſa.* Browne, 138.

This plant is very common in the woods, and makes an hearty, agreeable fodder, like the laſt-mentioned.

83. Mountain-Grass. — *Andropogon erectum montanum.* Browne, 365.

There are ſeveral varieties of this and other graſſes; and their multitude ſo great, that to inſert the liſt of them would be inconſiſtent with my plan. I therefore refer to Sir Hans Sloane's work, where the major part are enumerated; and ſhall only ſpeak of a few, that are eſteemed the moſt uſeful. The Dutch, burr, croſs, ſpeckled, and manna graſſes are among the beſt for fodder in the lower ſituations.

84. Sour-Grass. — *Andropogon avenaceum aſſurgens.* Browne, 365.

This plant is found, in great abundance, growing in fences, and at the feet of walls, and the banks of gullies, ſhoots luxuriantly, and retains its verdure in the drieſt ſeaſons. The cattle will not meddle with it whilſt it is green; but, after it has been cut, and dried in the ſun, it makes an hearty fodder for them; and has the merit of being vigorous and uſeful when other graſſes are ſcorched and periſhed for want of rain. In the time of great drought therefore, during crop, it may be cut and cured for the road-cattle.

The roots and leaves, pounded and applied externally, are obſerved to cure ſores and ulcers, of all ſorts, with more certainty than moſt other things uſed for that purpoſe. It is a ſtrong deterſive and agglutinant, and would probably make an excellent ingredient in vulnerary apozems and infuſions. Simples of this kind, thoſe eſpecially which are of a ſtimulating nature, have been always obſerved to anſwer much better in this climate than ointments and regular dreſſings.

All

All unctuous ſubſtances, imported from Europe, ſoon loſe their mildneſs after croſſing the Line, and turn acrid; by which degeneration of quality, they impart to ulcers a putrefactive tendency, and, ſo far from healing, often render them incurable: an evident and very cogent reaſon, to prove the expediency of uniting a knowledge of botany to chirurgical practice in this iſland, and of preferring the freſh-gathered vegetables, indigenous in it, to the ſtale and corrupted medicaments imported from Europe.

85. Worm-grass. — *Anthelmenthia.*

This plant is now cultivated in many gardens in the iſland. It was brought originally from the Spaniſh Main, and takes its name from the extraordinary virtues it poſſeſſes in deſtroying worms in the human body.

Two moderate handfuls of this plant, either green or dry, are boiled over a gentle fire, in two quarts of water, till they are reduced to one quart. The decoction is then ſtrained off, and a little ſugar and lemon-juice added, to make it more palatable. Sometimes the decoction is made into a ſyrup with ſugar; and in this form may be given to children. Half a pint, at the hour of going to reſt, is the doſe for a full-grown perſon, and proportionably to weaker perſons and children. This is repeated once in every twenty-four hours, for three or four days ſucceſſively. But, leſt this doſe ſhould prove too large, it will be a ſafer practice to begin with about a third of a pint for a grown perſon; and ſo in proportion for others; repeating it in a ſtill ſmaller quantity at every interval of ſix hours between each doſe, if its anodyne quality will permit. But in weaker conſtitutions, and for infants, it may be repeated only at the diſtance of twelve hours. This is continued for thirty-ſix or forty-eight hours; at the expiration of which, the double doſe may be again adminiſtered. After this takes effect, it is to be worked off with gentle purgatives, as the infuſion of ſenna, or rhubarb, with manna, and the like. It procures ſleep almoſt as certainly as opium, removes the fever and convulſions, and expels the worms in great quantities. When a few only are brought away, and many are ſuſpected ſtill to remain, the doſe muſt be repeated, and will rarely or ever fail. It is ſuppoſed rather

prejudicial

prejudicial to weak eyes, and is therefore cautiouſly given to very young children.

86. Grassy-Cyperus, or Sedge. — *Cyperus.*

There are a great many varieties of this plant in the iſland. The roots of all are eſteemed ſpecifics in peſtilential fevers.

87. Guiney Grass. — *Holcus major aſſurgens.*

This plant, like the Scotch graſs, is univerſally cultivated in the iſland for paſture and the ſtable. It is planted by the root, or the joint, when the earth is well-moiſtened with rain. It does not require ſo much moiſture as the Scotch graſs; and is juſtly eſteemed a more hearty and nouriſhing fodder. After it is planted, particular care is taken to keep the ground well-hoed, and clean about the roots, till they are well-eſtabliſhed.

When it firſt ſeeds, it is uſual, at the time of maturity, to turn in cattle to graze, that, by ſhaking the plants, the ſeed may be diſperſed, and their vegetation accelerated by the dung. When the ſtocks are old, the roots appear extended into very large tufts, and the leaves ſhort and ſlender, intermixed with dry, hard ſtems; theſe are burnt off, without injury to the root, a little before the ſetting-in of the rains; and, the root being divided, a new plant is made on ſome detached piece. Upon the firſt fall of rain, the old roots recover their former verdure, and ſhoot up ſurprizingly quick. In the drier lowlands, it may be cultivated to the beſt advantage in trenches; but in the mountains and more inland parts it thrives beſt, and in ſome places runs into a ſod. When planted in the intervals of cane-pieces, it occupies no ground that is convertible to any other uſe; but ſerves as fodder for the mules, horſes, and working cattle; affords a valuable addition to the ſtock of manure; and proves a ſafeguard to the canes againſt the ſpreading of accidental fires. It is alſo planted in the gullies and other waſte parts.

The uſual time of planting it on the South-ſide is in September or October. Where it is in ſufficient quantity, it may be cut, ſun-dried, and put in ricks, for the working cattle in crop-time; and makes a very nouriſhing hay.

88. Rice.

88. Rice. — *Oryza.*

This plant thrives extremely well in moiſt bottoms between the mountains. It ought only to be cultivated in places where the ground can be flooded with water. The marſhy grounds therefore in this iſland, ſuch as thoſe at the Ferry in St. Andrew's, the Eaſt end of St. Thomas in the Eaſt, the lands about Black River in St. Elizabeth's, Negril in Weſtmoreland, and other ſimilar parts, appear naturally adapted to this grain, if it ſhould be thought worth while to cultivate it, as an additional ſupply of food for the Negroes.

A gentleman having planted ſome out of ſeaſon, it grew very rank, but did not bear. Upon which, he cut it down cloſe to the root, and fed his horſes with it. But it afterwards ſprung up again, and, in the proper time of bearing, yielded an extraordinary quantity of grain. I mention this for the ſake of experimentors, who, deceived by the apparent ſterility on a firſt trial, if they ſhould happen not to have hit upon the proper time of putting the ſeed in the ground, may learn from this example in what manner to rectify their miſtake, ſo as not to be diſappointed of gathering a crop in the end.

89. Ramoon. — *Trophis.*

This tree is well known among the planters. The tops and leaves of it are ſucculent, and make an agreeable wholeſome fodder for all ſorts of cattle. For this purpoſe the branches are lopped and thrown to them in dry weather, or when other fodder is ſcarce; and they are always obſerved to thrive and grow fat upon this aliment. The berries are about the ſize of large grapes, and of a pleaſant flavour.

90. Bread-nut. — *Alicaſtrum arboreum.*

The leaves and younger branches of theſe well-known trees are a hearty fodder for cattle, horſes, and ſheep. They are propagated by the birds and rats from the ſeed; and ſometimes they have been planted in the dryer paſture-lands of the South-ſides. I have obſerved that every old fence in ſuch places is a nurſery for theſe and other valuable trees; which obſervation may furniſh a good hint

hint for the ſucceſsful planting them, the ſhade of the fence generally keeping the ground beneath much more cool and moiſt than it is in the open paſture: the ſoil is alſo richer, from the mould of decayed leaves and vegetables. Hogs are extremely fond of this fruit; and, when boiled with ſalt-fiſh, pork, beef, or the pickle of ſalt-meat, it has often furniſhed a nouriſhing repaſt for the Negroes in times of ſcarcity. When roaſted, it taſtes ſomewhat like the cheſnut. The bread-nut of St. Anne is an excellent timber, and much eſteemed for cabinet-ware.

91. Arum.

There are a great number of this claſs in the iſland, of which I ſhall mention only thoſe moſt in uſe.

Dumb-Cane.—*Arum cannæ Indicæ foliis.*

It is found in almoſt all the river courſes among the mountains, and delights in moiſt, cool, ſhady ſituations. It takes its name from the property it has, upon being chewed, of benumbing the tongue and dilating it, ſo as to obſtruct the ſpeech entirely, cauſing at the ſame time a great efflux of the *ſaliva*.

It riſes in joints, and reſembles a green ſugar-cane: The greeneſt and moſt ſucculent, pounded into a pulp, and mixed with hog's or turtle's fat, and agitated together for ſeveral days, heated and ſtrained through a coarſe cloth, are then boiled up to a conſiſtence and kept for uſe. This ointment is applied warm, and chafed upon the ſwollen parts in dropſical caſes, and a cataplaſm of the ſame laid over the *ſcrotum*; and it is ſaid to diſcuſs the watery humour collected in thoſe parts.

The crude juice of the ſtalk, thrown into the tache, is uſed by ſome to bring ſugar to granulation, when the ſyrup is ſo viſcid, as not to grain with lime-water alone.

The acrimony of this plant is much greater in October, than in the ſpring; being probably fuller of ſap, after the autumnal rains, which cauſes a ferment.

92. Purple Coco and Tannier.—*Arum acaule purpureum.*

This uſeful plant is cultivated from the ſeed, and generally in uſe among the Negroes, who boil the roots in their broths, and find them a hearty aliment.

The tops are called tanniers, and uſed for feeding hogs.

After they appear above ground, they continue their vegetation without any further trouble of hoeing, moulding, or weeding.

93. WHITE COCO and TYRE.—*Arum acaule maximum.*

The tops of this plant ſometimes ſupply the table with greens, but are reckoned inferior to the Indian kale. The young roots are wholeſome, dry, and nouriſhing, and uſed in broths. Thoſe which ſhoot round the top of the old roots are called *tyres.*

94. SCRATCH COCO and EDDYES or EDDOES. *Arum acaule maximum, radice leniter mordicante.*

The roots of this ſpecies are uſed like thoſe of the others, but not ſo commonly cultivated. The old roots, though boiled for a long time, ſtill retain a degree of pungency, which affects the throat. The young ones, which ſhoot round the top, are called *eddyes.*

95. BABOON or HOG COCO.—*Arum acaule ſubcœruleum maximum.*

The root of this ſpecies grows to a monſtrous ſize, is very coarſe, and of an eaſy growth. It is planted chiefly as food for hogs, which it fattens well.

The roots of every ſpecies, more eſpecially the ſpotted ones, poſſeſs an extraordinary acrimony; but after being dried and kept for ſome time, they loſe all this quality, and become inſipid to the taſte.

The dried root, pulverized and mixed with honey, expectorates tough phlegm, and is reckoned excellent in aſthmatic complaints. Mixed with flour of brimſtone, it is a ſpecific in conſumptions. The freſh roots and leaves, diſtilled with a little milk, form an approved coſmetic lotion. And the juice expreſſed from the leaves is recommended for cleanſing and healing foul ulcers.

96. INDIAN KALE.—*Arum acaule, medium, radice minori carnosâ.*

The leaves boiled are a wholeſome palatable green. They are tender, mucilaginous, with a ſlight pungency, and agreeable to moſt palates. It is cultivated in moſt parts of the iſland, and a ſmall bed of it is ſufficient to ſupply one or two families all the year,

year, for it grows very luxuriant and quick, and the oftener it is cut, the better it thrives; but it ought to be tranſplanted from time to time into freſh ſoil, to prevent its dwindling.

97. BRANCHED CALALUE. { *Solanum humilius diffuſum*, *Br.* 174. *Solanum ſomniferum*, *Theſ. Zey.*

It is remarked of this plant, that it is equally common in Europe, and though of a heavy ſtrong ſmell, and very narcotic quality in cold climates, it is void of both in Jamaica, when dreſſed by fire. It is in daily uſe here for food, and the leaves found by long experience to be a pleaſant wholeſome green. The *ſmooth red calalue*, or *atriplex*, has the ſame uſe and good quality when boiled.

98. PRICKLY CALALUE.—*Amaranthus aculeatus rufeſcens.*

This is frequent in the mountains and lower hills, and uſed as a green, being univerſally eſteemed a wholeſome agreeable vegetable.

99. SPANISH CALALUE.—*Phytolacca erecta ſimplex.*

This is cultivated in moſt of the kitchen-gardens; and in conſtant uſe as a palatable wholeſome green. The tender ſtalks are no bad *ſuccedanea* for aſparagus.

100. MOUNTAIN CALALUE, POKEWEED, SURINAM or JUCKATA CALALUE.—*Phytolacca aſſurgens ramoſa.*

It is indigenous to this iſland, and found in all the cooler hills and mountains, where it grows very luxuriantly. It riſes generally to the height of four or five feet, divided towards the top. It is called either *red* or *white*, from the colour of the flower-ſtalks, for all the branches terminate in long and tender ſpikes of thoſe colours. The leaves and tender ſhoots are frequently uſed for greens.

The inſpiſſated juice has been thought a ſpecific, or at leaſt a very powerful remedy, in open cancers, applied in form of a plaiſter.

The root, pounded when freſh, and applied as a poultice to the ulcers of pocky mules and horſes, performs a certain cure. The dreſſing muſt be renewed every day, and, previous to the application, the parts affected are waſhed clean with a mixture of ſalt and lime-juice in warm water; and a drench of flour of brimſtone in gruel,

 ſweetened

ſweetened with melaſſes, may be given at the ſame time, to aſſiſt the diſcharge. The poultice has been found no leſs effectual in healing ſores on the human body. This plant is the ſame as the *red weed* or *poke* of Virginia and New-England, from which the Indians prepare a red dye for ſtaining their baſkets, ſkins, and ſeveral other manufactures.

Some dyers there, are ſaid to gather the roots, and make a fine red tint of them; but I incline rather to think they make uſe of the flower, berries, and ſtalk for this purpoſe, as they are all of a beautiful red; whereas the roots are very white. When the juice of the berries is put upon paper, or the like, it ſtrikes it with a high purple colour, which is as fine as any in the world, but requires ſomething to fix it, and prevent its fading.

A ſpoonful or two of the juice of the freſh root purges ſtrongly, but when it is dry it loſes this quality. The young tender leaves have very little of it; but thoſe which are old, large, and thick, are ſaid to operate violently; nevertheleſs I have known them boiled and eaten, in order to open the body in the dry belly-ache, and with great advantage and ſafety.

101. THORNY, TUFTED SOLANUM.—*Solanum ſpinoſum & villoſum.*

The pounded leaves are ſucceſsfully applied to kill the maggots which infeſt large ſores on cattle; the juice keeps them clean, and deſtroys moſt ſorts of vermin.

102. BROWNJOLLY, VALINGHANNA, or MAD APPLE.—*Solanum pomiferum.*

This plant was firſt imported into Jamaica by the Jews, and is cultivated by many perſons. It bears a number of large berries, which ſhoot and ripen very gradually; theſe ſliced, pickled for a few hours, and boiled to a tenderneſs, are uſed inſtead of greens.

Some parboil them, take off the ſkin, which is a little bitteriſh, then fry them in oil or butter.

103. LOVE APPLE or COCK-ROACH APPLE.—*Solanum villoſum, ſpinoſum, fructu majori, mucrunato luteo.*

This is a native of Jamaica, and bears its fruit on ſingle foot ſtalks; the ſmell of the fruit or apple is ſaid to kill cock-roches.

TURKEY

104. TURKEY BERRIES.—*Solanum assurgens trichotomum foliis ovatis, fructibus minoribus.*

This and the other plant of the like name are common in the lowlands. They bear pretty thick; the berries are generally of the size of the European cherries, and serve to feed turkies.

There are several other species of the solanum, whose roots are possessed of great medicinal virtue, answerable to different intentions, some being hot, and others cooling.

105. TOMATO. *Lycopersicum calicibus septem partis, fructu rotundo, glabro.*

These berries are very large, compressed at both ends, and deeply furrowed all over the sides, filled with a pulpy juice, which has somewhat the taste of gravy, for which reason they are often used in soups and sauces, and impart a very grateful flavour; they are likewise fried, and served up with eggs.

The Spaniards esteem them *aphrodisiacs*.

The juice is cooling, and of service in defluxions on the eyes, and all inflammatory indispositions.

106. WINTER CHERRY. *Physalis.*

The berries are yellow when ripe. They are looked upon as diuretic, and serviceable in over-heated or febrile habits; they have a gentle subacid taste, joined with a light bitter, which renders them agreeable to the palate in such cases.

The fume of the plant in its succulent state, burnt with wax, and received into the mouth, has been observed to kill the worms in and about the teeth, and ease the tooth-ach. Where the berries are required as a diuretic, they are bruised and steeped in Rhenish wine, or the juice thickened to the consistence of an extract. The juice of the leaves and fruit mixed with Indian pepper is said to give immediate relief in the colic, provoke urine, and open obstructions.

IRISH

107. IRISH POTATOE.—*Lycopersicon radice tuberosa.*

108. SWEET or BERMUDAS POTATOE.—*Convolvulus repens, radice crasso, carnoso*, albo.

109. POTATOE SLIP.—*Convolvulus repens, radice crasso, carnoso luteo.*

These several sorts are cultivated extensively in the island. The first is thought to degenerate. It grows what is commonly called *waxy*, and acquires in time a more saccharine taste than those which are imported from Europe.

The second and third differ from each other only in the colour of their roots, those of the former being white, and of the latter yellow.

These two rise from slips, and are cultivated by laying a few short junks of the stem, or the larger branches in shallow trenches, with inter-spaces, and covering them with mould from the banks. The roots come to maturity in three or four months, and the propagation is continued by covering the stems, bits, and smaller protuberances with mould, as they dig up the more perfect roots for use. The leaves are good fodder for horses, sheep, goats, hogs, or rabbits. The roots pounded are often made into a kind of pudding, called here a *pone*, which is baked, and, with the addition of a few ring-tailed pigeons, justly esteemed a nourishing and relishing dish. Boiled, mashed, and fermented, they make a pleasant cool drink, called *mobby*. They will also make an excellent bread mixed with flour; for this purpose they are boiled till they begin to crack, or that the skin peels off readily; they are then peeled and bruised (while they are hot) in a mortar, till not a lump remains in them. This operation is performed in the evening before the bread is to be baked. The next operation is, to dilute them well with as much boiling water as is necessary to give them the consistence of dough. Then, after mixing them well with the leaven and flour, the whole is well kneaded together as quick as possible, and the dough covered with a cloth in a warm place, till it rises. The water that is used ought to be boiling hot, or it will not answer sufficiently, and is poured upon the potatoe mass before the flour is added.

The

The heat of the oven is to be the ſame as for other bread, except that it muſt be rather ſlackened to prevent this bread from taking too much colour; and it is in the higheſt perfection when thoroughly baked.

The proportion of flour varies according to fancy or neceſſity; there muſt be at leaſt one third part flour to make it eatable; but that which is made with an equal quantity, or a little more, is beſt. It will then be well taſted, wholeſome, very nouriſhing, eaſy of digeſtion, and will retain its moiſture many days longer than other bread; a circumſtance which recommends it particularly to common uſe in this climate.

It might be worth the trial, whether putting a ſmall piece of chawſtick, *viz.* about one or two inches length, into the water juſt before it begins to boil, might not ſo impregnate it with air, as to cauſe the dough to riſe better, and render the bread much lighter; or a ſpoonful of water in which the ſtick has been infuſed for ſeveral hours, might be added after the boiling water is poured on.

110. OKRO or OCHRA.—*Hibiſcus ramoſus, hirſutus, foliis lobatis, &c.* Browne, 285.

The pods of this very common plant are a cuſtomary ingredient in moſt ſoups here; and that celebrated and deſireable hotchpotch called *pepperpot*, cannot be compleat without them. They are ſometimes boiled ſeparately, and ſerved up with butter.

The fruit when grown is cut tranſverſely with its ſeeds, and when dried, is packed in well-ſtopped bottles or canniſters, and ſent to Great-Britain to be uſed in rich ſoups. This was formerly an article of commerce, and ſold in England at ten ſhillings *per* pound.

It is cooling, emollient, highly nutrimental, and very proper for diſeaſes of the breaſt; it provokes urine, and has been found beneficial in the ſtone and gravel.

But it is chiefly efficacious in conſumptive caſes, attended with a depraved appetite, hectic heats, and loſs of fleſh; and for ſuch caſes, the ſeeds are equally remedial, as the other parts of the fruit. They are eaſily dried, and may be ſent in this ſtate to any part of the world, packed in tight kegs or caſks. When uſed, they are beaten very fine,

fine, and the flour ſeparated from the huſk. A ſmall quantity of this flour may be put into broth, or ſoup; and, when taken daily in this manner, it has been known to recover many perſons, from the very brink of the grave, to a robuſt ſtate of health.

111. Musk-Okro. — *Hibiſcus hiſpidus, ſemine muſcato.*

The ſeeds of this plant, when grown to full maturity, have a ſtrong and perfect ſmell of muſk, a few grains being ſufficient to perfume a whole room. It is uſed with great propriety in powders, pomatums, eſſences, and the like, as well as in medical preparations; and might be a valuable article of export.

112. Jamaica Salop. — *Satyrium, foliis liratis longiſſimis, &c.* Browne, p. 325.

The leaves of this plant, which is found only in the cooler parts of the mountains, reſemble thoſe of a young cocoa-nut. The root, as it dries, acquires a great deal both of the colour and taſte of rhubarb; but it ſhould be ſliced, and kept a long time in the open air, to be properly cured. It is uſed as a ſtomachic, and is obſerved to thicken the *ſaliva* when chewed, and thought to abate the acrimony of the humours by its mucilaginous quality. Browne deſcribes fifteen ſpecies of the *ſatyrium*. Sloane mentions ſeveral, under the name of *orchis*; and, among the reſt, "*orchis elatior, lati-*"*folia, aſphodeli radice, ſpicâ ſtrigoſâ.*" Cat. p. 119. This has double tuberous roots, much like thoſe in England, and was thought a ſpecific to help impotency; the eſſence, juice, or extract, being taken twice a day in a glaſs of wine. Mr. Moult lately communicated a very ſimple method of preparing the roots. They are firſt deprived of their thin ſkin, then kept in the heat of a bread-oven eight or ten minutes, where they acquire a tranſparency like that of horn; and are afterwards removed into a common room, in which they grow dry, and harden in a few days.

113. Wild Cassada. — *Jatropha humilior, ſetis ramoſis, foliis tri vel quinque lobis, leviter denticulatis.*

This is very common about Kingſton, Spaniſh Town, and moſt parts of the iſland, where the ſoil is dry, and ſituation warm. It grows

grows luxuriantly where the ground has been manured with dung. It is a very beneficial plant in every ſettlement where poultry is bred; for moſt ſorts of birds, and eſpecially thoſe of the crawed kind, feed heartily on its ſeeds.

In the months of March and April is found, in the inſide pith of the foot-ſtalk, an hard, knotty ſubſtance, of an oval form, and yellowiſh colour. This, powdered and applied to the noſe, excites a ſtronger ſneezing than white hellebore.

The young tops of this plant, boiled and buttered, have ſometimes been given in the belly-ache. One or two of the ſeeds, powdered, and added to any other purging medicine, add conſiderably to its operation, and have therefore been compounded, by ſome practitioners, with the *pilul. ex duobus*, to quicken their effect, and keep them moiſt.

114. CASSADA. — *Iatropha foliis palmatis, carne ſublacteâ, &c.* Browne, p. 349.

This plant, which furniſhes the Braſilians with great part of their ſuſtenance, is much cultivated in this iſland. It thrives beſt in a free, mixed ſoil, and is propagated by the bud, or germ, in the following manner. The ground is firſt cleared, and hoed into ſhallow holes, of about ten inches or a foot ſquare, and ſeldom above three or four inches in depth, and without much regularity. A number of the full-grown plants being provided, they are cut into junks, of about ſix or ſeven inches in length, as far as they are found to be tough and woody, and well-furniſhed with ſwelling, full-grown, hardy buds. Of theſe, one or two are laid in every hole, and covered over with mould from the adjoining bank. The ground muſt be kept clean till the plants riſe to a ſufficient height; the plants moulded up; and the growth of weeds prevented. They come to perfection in about eight months; but the roots will remain in the ground for a conſiderable time uninjured, if the want of freſh plants, or bad weather, ſhould make it neceſſary to cut the ſtalks. When the leaves wither, and the plant bloſſoms, the roots are fit to dig. They are then (in good land) nearly as thick as a man's thigh. They are taken out for uſe, as occaſion requires, and then prepared, viz. after being well-waſhed and ſcraped, and then rubbed into a kind of pulpy meal with an iron grater, they are put into ſtrong

linen bags, and placed in convenient preſſes. The common method of preſſing is as effectual as any. One or more large flat ſtones are placed to a proper height upon the ground, near the root of ſome old tree, in the ſide of which a hole, or notch, has been cut equal to the elevation of the ſtones. Into this hole is fixed the extremity of a ſtrong plank, or beam, which ſtretches over the ſtones by way of a lever, preſſing with all its weight upon the caſſada-bag, which is laid upon the uppermoſt ſtone. Several heavy loads are fixed at the other end of this lever, or as many as it will bear. And in this ſtate the bag remains until the juice is thoroughly ſqueezed out. After this operation, the meal is ſpread in the ſun for ſome time; then pounded in a large, wooden mortar, paſſed through a coarſe ſieve, and baked on flat, circular, iron plates, fixed in a ſtove. The particles of the meal are united by the heat, and, when thoroughly baked in this manner, form cakes, which are ſold at the markets, and univerſally eſteemed a wholeſome kind of bread [*y*]. Toaſted and buttered, they are very reliſhing, and uſed by moſt families. They are alſo made into very delicious puddings. The juice of the root is of a poiſonous nature; but, when boiled, it throws up a ſcum, which being taken off, the remainder is found, by long experience, to be an inoffenſive and agreeable drink, much reſembling whey in taſte and quality.

But, however noxious the juice may be in its crude ſtate, unmixed with any corrective, it is well known that hogs eat the freſh roots with great avidity, and ſuffer no inconvenience: either, therefore, their ſtomachs and inteſtines are formed to aſſimilate it into wholeſome nouriſhment, or they correct its bad qualities by the ſurrounding mould ſwallowed with it, or by ſome antidote which inſtinct prompts them to eat after it.

The Negroes boil and eat the leaves as a green. It is ſuppoſed, that the action of the fire carries off its malignant qualities.

What is not a little extraordinary, the meal, not yet diſcharged of its juice, makes an excellent ſalve, and ſeldom fails to heal the worſt ſores; and, to improve its effect, it is ſometimes mixed for

[*y*] The Spaniards, when they firſt diſcovered the Weſt-Indies, found it in general uſe among the native Indians, who called it *Cazábbi*, and by whom it was preferred to every other kind of bread, on account of its eaſy digeſtion, the facility with which it was cultivated, and its prodigious increaſe.

this

this intention with the freſh leaves of tobacco pounded. Several accidents having happened to Negroes newly-come to the iſland, who have ate of the root roaſted without expreſſing the juice, I ſhall mention what remedies have been propoſed.

The ſymptoms, conſequential to ſwallowing the poiſon, are, firſt, a pain and ſickneſs at the ſtomach, a tenſion and ſwelling of the whole abdomen; then violent vomiting and purging, giddineſs of the head, a cold ſenſation and ſhivering, dimneſs of ſight, ſwoonings, and death, in a few hours, if no relief is given.

The expreſſed juice is very ſweet to the taſte. It ſoon putrefies, and breeds worms, called by the Indians *topura*, which undoubtedly draw their nouriſhment from thoſe particles that are ſo baneful to mankind; and, when dried and pulverized, they have formerly been applied to the moſt miſchievous purpoſes by the Indians and Negroes; who, having conveyed ſome of this powder under their thumb-nail, preſented a cup, or other veſſel, of drink to the perſon they intended deſtroying; contriving, at the ſame time, to ſuſpend the tip of their thumb in the liquor, in order to impregnate it; for which reaſon, whenever a Negroe was ſeen to let the nail of his thumb grow to an extraordinary length, he was always ſuſpected of having ſome bad deſign of this ſort in agitation. The common remedy in Braſil is, firſt, to adminiſter a vomit of *ipecachuana*; and then the juice, or powder, of nhambu. The nhambu is a plant, deſcribed by Piſo, p. 228, and 310. It has a fibrous root, from which riſes a moderately thick, hard ſtalk, knotty, rough, and hairy; ſo are the branches. The leaf is broad, green, and ſucculent, largely indented, or divided. From between the leaves come the flowers, on a long foot-ſtalk, which are ſingle and monopetalous. Then follows the fruit, round, about the ſize of a ſmall cherry, covered over with a cheſnut-like, rough coat, in ſhape like that of the *ricinus*, and containing flat, oval ſeeds, of a ſhining, yellowiſh, brown colour. Every part of this plant has a hot, ſpicy, pungent taſte, with an aromatic flavour. The bark, leaves, and fruit, are the parts generally uſed.

Bluet, in his account of Guiney, mentions, that a cow, having drank a hearty draught of the juice, went and fed on a ſhrub which grows common in Africa, called *ſenſitive plant*, and received not the leaſt hurt.

It ſeems probable, that the ſenſitive plant of Guiney is the nhambu of Braſil, or, at leaſt, that the nhambu is a ſpecies of ſenſitive, and agrees ſomewhat in deſcription with a ſpecies found growing naturally at Campeachy by Dr. Houſton, which is thus deſcribed, *mimoſa, foliis ſubdigitatis, pinnatis, caule aculeato hiſpido*; "ſenſitive plant, with winged, handed leaves, and a prickly, hairy "ſtalk." The flowers are white, and ſucceeded by prickly pods. It has alſo ſome affinity to the black-bead ſhrub, or large-leafed mimoſa, of Jamaica; a ſhrubby ſenſitive, and called, by ſome, the *humble plant*, which has a declining, prickly ſtalk, with pods growing in cluſters, with prickly coverings. It deſerves experiment, whether ſtrong decoctions of the leaves and ſeeds of theſe ſpecies, or an extract made from them; or the crude juice of the leaves, with powder of the ſeeds, might not counteract the effects of this poiſon, tried on dogs and cats, or on fowls.

Dr. Browne adviſes the following remedy, to prevent any miſchievous effect.

"℞ a little mint-water, and *ſal abſynth.* (or ſalt of wormwood), "and mix."

If the poiſon has not been ſwallowed any conſiderable time, he aſſerts, that this eaſy preparation will calm the moſt violent ſymptoms.

The virtue of the fixed ſalt of wormwood conſiſts in its being a good febrifuge, and very ſucceſsful in removing tertian agues, poſſibly by promoting the circulation of the blood, and attenuating it when it is agglutinated and ſluggiſh.

The effects of the nhambu are ſimilar; for it undoubtedly acts by its heat and pungency, ſtimulating the fibres to action, warming the ſtomach, and aſſiſting the blood's circulation.

The poiſon is of what is called the cold kind; and hence the beſt antidote to it muſt be a medicine of a warm, active, and attenuating quality. The Indians, therefore, of Guiana give a mixture of red pepper bruiſed in rum.

The leaves of the *minoſa Jamaicenſis*, Jamaica ſenſitive, without prickles, have been ranked among vegetable poiſons; but the root is ſaid to be an antidote to the effect of the leaves.

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The caſſada-bread, mixed with milk and a little ſweet-oil, makes an admirable poultice for ripening and breaking tumors.

115. SWEET CASSADA. — *Iatropha, foliis palmatis, carne niveâ, &c.* Browne, p. 350.

This reſembles the former plant, and is cultivated after the ſame manner; but the root is free from any of the ill quality obſerved in the juices of the other ſort. It is roaſted or boiled for uſe: but the latter is thought the beſt method of dreſſing it; for, in this ſtate, the outward part is commonly brought almoſt to the ſtate of a jelly, and is extremely delicate and agreeable. A fine flour is made from it. This ſpecies bears a large berry.

116. { NEGROE-YAM. — *Dioſcorea, radice tuberoſâ luteâ.*
WHITE-YAM. — *Dioſcorea, radice albâ aut purpureâ.*

Both theſe plants are cultivated here univerſally for food; but the former, which is of a yellowiſh colour, is coarſe, frequently ſtringy, and not ſo much in eſteem as the ſecond, vulgarly called, by the Negroes, *bochara-yam*.

The roots grow to a conſiderable bulk, and above a foot in length; are mealy, eaſy of digeſtion, palatable, and nutritious.

Both plants are propagated by a ſlice from the root, ſo cut as to have a little of the ſkin upon it, by which alone they germinate; for the roots have no apparent germs, but caſt out their weakly ſtems from every part of the ſurface alike. They are put into convenient holes (two or three in each), generally dug pretty regular, and about a foot and an half, or two feet, ſquare. Theſe are afterwards filled from the adjoining banks; and the whole piece covered with cane, or other traſh, which ſerves to keep the ground cool and freſh, and to prevent the growth of weeds, from which theſe plants muſt be carefully preſerved, until they grow ſufficiently to cover the mould themſelves. They may be planted about January and February, and will be fit to dig about Chriſtmas, or in Auguſt, in order to come in about May following.

When the root is dug up, care is taken not to wound it, or as little as poſſible; for ſuch as are cut throw out ſprouts very early, and are ſeldom fit for any thing, except planting, if they hold out even till the proper ſeaſon comes round. After they are taken up, and cleared from the mould, they are rubbed over with wood-aſhes,

and piled on hurdles raiſed above the floor in a dry room, admitting the air to paſs between them, and prevent their ſweating, which would ſoon rot them, when any quantity happens to be laid in an heap. Twelve months are generally allotted for their coming to maturity from the time of their being planted; but in ſome parts, where well-ſupplied with moiſture, and brought forward with a hot ſun, they will ripen earlier than in others.

117. PLANTANE-TREE. — *Muſa, fructu majori triquetro.*

This is cultivated in every inland ſettlement, or wherever the ſoil and ſeaſons are propitious to it, with great care, as the fruit ſupplies a principal part of ſuſtenance to the inhabitants, black and white. It thrives beſt in a cool, rich, and moiſt ſoil, and is commonly planted in regular walks, or avenues. It is propagated by the ſuckers, which ſpring up from the roots, ſet at the diſtance of ſix or eight to ten or twelve feet apart, and the latter more commonly, as the root throws up, every year, a number of young ſprouts, and conſequently require a conſiderable ſpace to be allowed for their extenſion.

When the bunch, or cluſter, of fruit is gathered, the ſtem gradually decays; to prevent, therefore, the young ſuckers from being injured, the ſtem is always cut down cloſe to the ground when the fruit is wanted, in order to aſſiſt the growth of the new plants.

The fruit is generally uſed when it is full-grown; but, before it ripens, this is known by the colour, which turns yellow, as ſoon as it begins to grow ripe. It is peeled, and either roaſted in embers, or boiled; and thus ſerved up at table, inſtead of other bread. Many white perſons, after being accuſtomed to it for ſome time, actually prefer it to bread, eſpecially when young and tender. The Negroes commonly boil it in their meſſes of ſalt-fiſh, beef, or pork-broth, and find it a very ſtrengthening wholeſome food. When the fruit is ripe, it becomes luſciouſly ſweet: it may then be made uſe of for tarts, or ſliced and fried in butter. The Spaniards dry and preſerve it as a ſweetmeat; and, perhaps, it is wholeſomer than many other ſorts of confectionary that are more in vogue. The ripe fruit and maize together are the beſt food for hogs

hogs put up to fatten; and give their flesh and fat a most exquisite flavour and firmness.

The leaves are dried, and made into mats, and stuffing for matrasses, pads, &c. The fresh leaves are superior to melilot for dressing blisters, and generally in use for this purpose. Upon thrusting a knife into the body of one of these trees, there issues out a large quantity of a limpid water, of a restringent quality, which has been given, with the greatest success, to persons subject to a spitting of blood, and in other fluxes.

118. BANANA. — *Musa, fructu breviori oblongo.*

The fruit is generally used when ripe; it resembles the plantane, but has rather a softer, mellower taste, and more proper for tarts and fritters. The leaves of this tree are supposed to have furnished our first parents with the modesty-pieces, or aprons, mentioned in scripture. A very excellent drink is made from the juice of the ripe fruit fermented, most resembling the best South Ham cyder. A marmalade is likewise made with it, esteemed an excellent pectoral, good for coughs and hoarseness, lenifying the sharpness of the catarrhal humours, cooling, and refreshing.

The Spaniards conceit, that, on cutting this fruit athwart, there appears the form of a cross in the middle, and, out of the superstitious reverence they bear to this figure, they never cut, but break it.

The fruit of these two species may be regarded among the greatest blessings bestowed upon the inhabitants of this climate. Three dozen plantanes are allowed sufficient to serve one man for a week, in lieu of other bread, and will support him much better.

The green leaves of both species are an excellent fodder for horses; and, as their juice is somewhat restringent, preserve them from scowering too much after grazing on sour or salt-marsh grass.

The banana fruit, ripe, has been noted for its efficacy in correcting those sharp humours which generate, or accompany, the fluxes, to which Europeans are often subject on their first coming into the West-Indies. It is somewhat surprising, that captains of ships in this trade do not lay in a quantity of the roasted-fruit of these trees, or plants, for their sea-store, especially as it might be kept

kept for a long time, packed in the dried leaves, and ſtowed in tight caſks, and requires only a freſh roaſting, or heating, when wanted for uſe. It is a cheap, hearty food, and would furniſh the ſailors with a wholeſome and agreeable change, after a tedious repetition of ſalt-meat, and not only keep them free from ſcorbutic foulneſſes, but ſerve the purpoſe of other vegetable aliment not ſo eaſily to be had at ſea, and certainly much better for them than mouldy biſcuit, full of weevils and dirt.

119. WILD PLANTANE. — *Muſa, ſpadice erecto, &c.*

This beautiful plant grows wild in moſt of the cooler mountains and gullies of Jamaica. In growth and leaves it perfectly reſembles the other ſpecies, but differs widely in the more eſſential parts, and produces no fruit. The ſtem, or body, of it is ſomewhat ſmaller, but equally ſucculent.

I have ſeen, in this iſland, very large tracts of land, which once were conſiderable ſugar-plantations, but, in length of time, became ſo exhauſted, as not to make any proportionable return to the labour beſtowed on them, and have therefore been thrown up, and deſerted. Where this has happened from a change of ſeaſons, and the want of ſhowers, the diſaſter is incurable; and ſuch land cannot be reſtored to fertility, except by the return of favourable weather, or by artificial waterings; the firſt is ſcarcely to be hoped for; the ſecond is not always practicable. But there are other lands, which have been worn out with inceſſant cultivation, and not ſo deſtitute of ſhowers. In many places, it is uſual to let them lie fallow for two or three years, neglecting what is abſolutely requiſite during this interval of time; which is, to hoe-plough them, once a year at leaſt, before the weeds ſeed and ripen; ſo that the rains and dews, falling upon them, have only aſſiſted the growth and multiplication of weeds in ſuch a manner, that they cannot afterwards be exterminated. It has been demonſtrated, that water (more particularly rain) is the principal ſupport and *pabulum* of all vegetables. In their ſtate of diſſolution, the more rarefied particles of the fluid, they have imbibed, re-aſcend into the atmoſphere; but much of the remainder becomes earth, affording a ſolid and actual ſuſtentation and addition to the ſurface on which it falls. For this

reaſon

reaſon, probably, in the modern, improved ſtate of huſbandry in England, turnips are applied as an excellent manure for impoveriſhed lands. In Jamaica, the ſame root is not equally fit for the purpoſe, becauſe it does not grow here to any conſiderable bulk, nor is it ſo ſucculent as in England. I would propoſe, therefore, to ſubſtitute, in its room, the wild plantane-tree, wherever it can be brought to grow. This plant is, in truth, a vegetable *ſyphon*, full of water; and as it never fructifies, ſo it cannot probably exhauſt any ſoil. A walk of theſe ſuckers might be planted on impoveriſhed land in a ſeaſonable year, and ſuffered to ſtand for three years; and the ground hoed only till the plants appear to have ſtruck root, and to riſe with vigour. In the third year they might be cut down, and left to rot upon the ſurface. To ſupport them in the early part of their growth, it is neceſſary to keep the ground clear of weeds about them. Hoeing performs this, and looſens the earth; which facilitates the penetration of rains and dews through the ſurface. When they are tolerably well grown, their broad, expanding leaves will ſhade and cool the ground in ſuch a manner, as to preſerve it always moiſt and open, and ſuppreſs the aſcent of weeds: from this period, therefore, hoeing will not be ſo neceſſary. I ſhould not recommend the fruit-bearing plantane for this deſign, as it certainly exhauſts land very much, and therefore would add to the evil, inſtead of removing it.

The ſtems, or trunks, of any of theſe ſpecies, cut in long junks, are the beſt proviſion that can be laid aboard the homeward-bound ſhips, for ſupport of the live-ſtock. Sheep, goats, cattle, hogs, and poultry, are all fond of it; and, as the ſtems preſerve their ſucculence for a long ſpace of time, the ſtock fed with it require little or no water. For the ſmaller animals the junks are chopped into ſmall pieces.

They are ſtowed behind the mizzen-chains, where they do not in the leaſt incumber the ſhip.

122. BONAVISTE-BEAN. — *Phaſeolus maximus perennis, &c.* Sloane's Cat. 67.

This is cultivated in moſt parts of the country, and thrives well in almoſt every ſoil. The bean is a wholeſome palatable food, and in general uſe.

123. KIDNEY-BEAN. — *Phaſeolus*. 5. Browne, p. 291.

This is likewiſe every where cultivated; and the ſeed, or bean, left to dry; then gathered, and kept for uſe, chiefly as an ingredient in pepper-pots.

124. LIMA BEAN. — *Phaſeolus perennis*. 6. Browne, p. 292.

This is eſteemed the moſt delicious bean in the world. It requires a rich ſoil, and continues bearing four or five years ſucceſſively.

125. CALAVANCES, or RED BEAN.—*Phaſeolus*. 7. Browne, p. 293.

This is ſown at any time after rains; and, in ſix weeks time, the fruit is large enough to eat green. It is a hardy plant, very much cultivated, thrives in every ſoil; and the bean is eſteemed a wholeſome, ſtrengthening food. The Chineſe have a white ſort, called *tao*. They plant it on dry hills. The Europeans buy, of this ſort, great quantities for ſea-ſtore on their return from China. The Eaſt-India ſoye is prepared in the following manner [z]. Take a certain meaſure; for inſtance, a gallon of calavances; let them be boiled till they are ſoft: alſo a gallon of bruiſed wheat, and a gallon of common ſalt. Let the boiled calavances be mixed with the bruiſed wheat, and be kept covered cloſe a day and a night in a warm place, that it may ferment. Then put the mixture of calavances and wheat, together with the ſalt, into an earthen veſſel, with two gallons and an half of common water; and cover it up very cloſe. The next day ſtir it about well with a battering ſtick, or a churn (the barrel-churn, which is made with ſlips of board, placed perpendicular to the ſides within, about three inches in breadth, and running the length of the barrel, mounted on an axis at each end placed on a frame, and turned with a windlaſs-handle, would anſwer beſt for this purpoſe), and for ſeveral days, twice or thrice a day, in order to blend it more thoroughly together. This work muſt be continued for two or three months; then ſtrain off and preſs out the liquor, and keep it for uſe in kegs, or ſmall barrels. The older it is, the clearer it will be, and of a proportionably higher value. After it is preſſed out, you may pour more

[z] Ellis.

water

water on the remaining mafs, then ftir it about violently; and, in fome days after, you may prefs out more foye.

126. Black-eyed Pea. — *Phaseolus.* 8. Browne, p. 293.

This is much like the foregoing, and thought by fome to be rather more palatable.

127. Cuckold's Increase. — *Phaseolus.* 9. Browne, p. 293.

This refembles the calavances in fize and manner of growth. It is a profitable pulfe, and much cultivated.

128. Sugar-bean. — *Phaseolus.* 10. Browne, p. 293.

This is generally cultivated, and ferved up at every table. It is of eafy growth, and continues to bear a confiderable part of the year.

129. Broad-bean. — *Phaseolus perennis.* 12. Browne, p. 294.

This is cultivated more for the fake of its fhade than its fruit; though the latter is equally wholefome and palatable, and frequently feen at the beft tables.

There are fome other varieties, as the great Angola, the clay-coloured, &c. Sir Hans Sloane reckons above twenty-one forts.

130. The Pigeon, or Angola Pea. — *Cytisus fructicosus, ramosus, triphyllus.* Browne, p. 296.

This fhrub is chiefly cultivated by the Negroes in their gardens and grounds, becaufe it is a perennial, and does not require much care. It bears a great number of pods. The feeds, or peas, are a hearty wholefome food, and generally in ufe, green or dried. The leaves are very good fodder for cattle.

131. English Beans and Peas.

The various forts of thefe, brought in feed, are cultivated here, but thrive beft in the mountains, particularly the beans: but I have feen exceedingly fine peas in the lowlands, which generally come to maturity in two months. They thrive well in brick-mould, and in the hills near Spanifh Town, the Liguanea mountains, and all the

the other inland mountainous parts. The large marrow-fat pea, which came from Cuba, is the moſt in eſteem, and anſwers well in moſt parts of the iſland.

132. CORAL, or RED-BEAN-TREE.—*Erythrina arborea, ſpinoſa et non ſpinoſa*, &c.

This grows in many parts of the iſland. It is propagated by the ſlips or cuttings, or by the ſeed; it bloſſoms in three years from the ſeed, and has young pods about the middle of February; and by the latter end of March the ſeed is full grown, and of a beautiful red colour. The prickly ſpecies make good fences. They riſe to the height of ſixteen or eighteen feet. They were probably both introduced by the Spaniards formerly, to be planted among their cacao walks, where they lay moſt expoſed to the weather, to break the impetuoſity of the wind; and hence their common appellation of *madre de cacao*, or mother of cacao.

A ſeed of the bean-tree, being planted by a gentleman in his garden, for experiment-ſake, it was found, in two years nine months, to have grown to the height of ſeven feet, meaſured from the baſe or root to the branches. The quickneſs of its aſcent, and ſturdineſs, prove it admirably well adapted to be the protector of the young tender cacao plants.

133. PINDALS, or GROUND-NUTS—*Arachis*.

The plant, which produces theſe nuts, was firſt brought from Africa.

They reſemble a filbert in colour, ſhape, and ſize. They are found in the earth, environed with a thin ciſta, which contains two or three kernels, and ſeveral of theſe bags are ſeen adhering to the roots of one plant. When ripe, and fit to dig, the covering, in which they are contained, appears dry, like a withered leaf; this being taken off, the kernels, or nuts, are immediately diſcloſed to view, reddiſh on their outſide, and very white within. They have ſomewhat of the almond flavour, but more of the cheſnut; ſome think them equal to the piſtachia. They are nouriſhing, and often given as food to Negroes on voyages from Guiney, where they paſs under the name of *gubagubs*.

They

They may be eaten raw, roasted, or boiled. The plant thrives best in a free soil, and warm situation. In Southern climes vast crops of these nuts are said to be produced from light, sandy, and indifferent soils. Doctor *Brownrigg*, of *North Carolina*, transmitted some account of the value of these nuts to the Royal Society. From a quantity of them, first bruised, and put into canvas bags, he expressed a pure, clear, well-tasted oil, useful for the same purposes, as the oils of olives or almonds.

From specimens both of the seeds and oil, produced before the Society, it appeared, that neither of them were subject to turn rancid by keeping. The oil in particular, which had been sent from Carolina eight months before, without any extraordinary care, and had undergone the heats of the summer, remained perfectly sweet and good. A bushel of them yielded (in Carolina) without heat, one gallon of oil, and with heat, a much larger quantity, *but of inferior quality*. It has been justly supposed, that, from a successful prosecution of this manufacture, the colonies may not only be able to supply their own consumption, in lieu of the olive oil annually imported from Europe; but even make it a considerable article of their export.

The nuts bruised, and applied in form of a poultice, take away inflammations, caused by the venomous stings of bees, scorpions, wasps, *&c.*

134. CERASEE—1. *Smooth-leafed*; *and*, 2. *Hairy*——1. *Momordica glabra*. 2. *Id. hirsuta*.

Both these plants are cultivated in many parts of the island, and especially in the town-gardens. The internal part of the fruit is of a very elegant red colour, and filled with several large red seeds, in size and form resembling those of the tamarind. If the point of the smallest pin or needle is stuck into any part of the fruit, it will immediately fly open in divisions, turning, as it were, inside out, as if by a kind of magic touch. The plants make very beautiful arbours. The leaves and fruit, externally applied, are esteemed great vulneraries. The leaves boiled, or a decoction of them, is taken to promote the lochiæ and in obstructions of the liver and mesentery. The root powdered, and given with cream of tartar, from a scruple to forty grains, is answerable to the like intention; and a distilled water is made from the

the leaves and fruit, mixed with ſalt of nitre, recommended as a lotion for the St. Anthony's fire, and pimples in the face. The pulp of the fruit is purgative, and an oil may be obtained from it, which cures burns, and takes away ſcars.

135. CLAMMY-CHERRY—*Malphigia arbor baccifera.*

This beautiful tree grows to a conſiderable ſize in the lowlands.

The berries come out in cluſters of a fine red colour, about as big as a middling cherry, having a ſoft, ſweetiſh, clammy pulp, inveloping a number of ſmall ſeeds.

It bloſſoms in February, and has ripe fruit in April. The turkies, and other poultry, nay even hogs and dogs, are extremely fond of the berries, and are thought to fatten upon them. The fruit of the baſtard cherry ſerves likewiſe for poultry.

136. BARBADOES CHERRY—*Malphigia, punici mali facie.*

This ſhrubby tree has much the appearance of the pomegranate plant.

The fruit is of the ſame ſize and form as the common Engliſh cherries, of a light-red colour, a pleaſant ſubacid taſte, and very ſucculent; it makes very agreeable tarts, and excellent jellies.

137. SEA-SIDE-GRAPE—*Coccolobis uvifera littorea.*

This tree is very frequent on all the low ſandy ſhores. It is eaſily propagated in other parts of the country by ſlips or cuttings. It grows to a large ſize, and is then looked upon as a beautiful wood for *cabinet ware.*

The berries are about the ſize of common grapes, and, when ripe, have an agreeable flavour, but the juice is reſtringent; and for this quality it is remedial in fluxes, particularly ſuch as may enſue from drinking the brackiſh water, common to the places where they grow adjacent to the ſea. There are ſome other varieties of the *coccolobis*, whoſe fruit poſſeſſes the like quality.

138. JAMAICA GRAPE-VINE—*Vitis ſylveſtris.*

This grows ſpontaneouſly in the woods; the fruit appears in bunches, reſembling the Engliſh elder, of the ſame bigneſs and complexion,

but endued with a pleasant, vinous flavour. It used to furnish the hunters with refreshment, and is no less grateful to the animals pursued. It is also known by the name of *water-withe*; for the vine is so full of juice, that a junk of three feet length will yield near a pint of clear, tasteless water, which has saved the lives of many who have wandered long in the woods, without any other liquid for their support. For this reason it deserves to be cultivated in all those parts which are destitute of springs, as it is a natural reservoir, collecting and keeping a pure and salutary water in the driest, hottest seasons; and has been observed to thrive exceedingly well in the Red Hills, and other rocky, mountainous districts, where springs of water are most deficient.

The vine produces a large quantity of small black grapes, of a rough taste, which would undoubtedly make an excellent red wine, under proper management.

139. Grape vine. — *Vitis*.

The white and red grape vines, particularly the muscadine, have been introduced here from Europe and Madeira, and seem to thrive extremely well. The bunches grow to an extraordinary magnitude, and the pulp is more fleshy, and less watery, than in the South of France; a difference to be naturally expected from the greater heat of climate, and richness of soil. The muscadine answers better in the lower sites than any of the other species, ripens all its berries near at a time, and with due care might be brought to the utmost perfection. The clusters are very large in the lowlands, the grapes mellow, and might doubtless produce a fine mellow wine, if cultivated in any sufficient extent, and by persons of competent skill. The hills of Healthshire, of Liguanea, the Long Mountains, the Red Hills near Spanish Town, seem all well accommodated to some or other of these vines, selecting the cooler and higher ascents for such as are indigenous to Europe; but the muscadine would probably succeed best in the lower hills of Liguanea, which have a South aspect, and a friable, gravely surface.

The method in which the grape vines are usually cultivated here, is very absurd. The tendrils are generally carried over frames, or arbours,

arbours, eight or ten feet above the ground, by which means the fruit is deprived of all reflected heat, which is neceſſary to mature it.

In Madeira, the beſt vines are moſtly growing on ſlopes, in a South aſpect, and trailed within two feet of the earth. The bunches uſually ſold at the Jamaica markets are ripe only on one ſide, reſembling a joint of meat on a motionleſs ſpit, the one half roaſted, the other raw. I have ſeen branches of eight pounds weight, having only the ſide that faced the ſun thorougly ripened, whilſt the other, being conſtantly ſhaded from his rays, and elevated too high to receive much impreſſion from the warm vapours of the ſoil beneath them, remained perfectly green. No perſon here has attempted hitherto to make wine, it being a buſineſs with which our countrymen are very little acquainted; nor perhaps, is it worth while to attempt it, except for domeſtic conſumption; ſince the French Proteſtant families ſettled in the province of South Carolina are entering ſo largely into this branch, that it is highly probable, they will be able, in a few years, to ſupply the Weſt India iſlands, and even Great Britain, with excellent wines, at a much cheaper rate than they are now purchaſed from foreigners.

140. Pine Apple. — *Ananas.*

There are ſeveral varieties of this delicious fruit; ſome of which, may have been obtained from ſeeds; and it is thought that if the ſeeds were ſown frequently, there might be as great a variety procured of this fruit, as there is of apples and pears in Europe. Some of the ſorts obſervable here, are,

The bog-walk pine, of a compreſſed form, and deep green coat, white fleſh.

The ſame, with a yellow coat.

The pyramidical, or ſugar loaf, with yellowiſh fleſh, and deep green coat.

The ſame, with a yellow coat.

The ſmooth-leaved, or king pine.

The queen pine, with leaves ſmooth, or ſometimes ſpiked.

The ſmaller green or yellow pyramidal, or Montſerrat.

Of

Of theſe the ſugar loaf is moſt eſteemed; it is propagated by the crown ariſing from the ſummit of its pyramid, or by the ſuckers ſpringing from the roots; but the latter come quicker to maturity. They all thrive beſt in a brick mould, and warm ſituation. Some perſons cultivate them on the top of ſmall ridges or banks, raiſed about 18 inches, and diſpoſed in ſtraight rows; they grow moſt luxuriantly when they are thus aſſociated together, like the penguin, and the ſuckers from them are ſtronger and finer than when the plants are ſeparated to a diſtance from each other, and their roots are likewiſe kept cooler and moiſter. They are ſubject, eſpecially in a very dry ſeaſon, to be attacked with a ſmall white inſect, which, if not deſtroyed, will overſpead the leaves quite to the root, ſtop the growth of the plants, and conſume their juice.

This is ſuſpected to be the ſame which frequently does ſuch miſchief in long droughts, to the cane pieces, and is called the blaſt. In order to kill them, it has been recommended to ſteep the freſh leaves and ſtems of tobacco, for twelve hours in water, and ſprinkle all the plants every day with this water, by means of the common garden pot, till the inſects diſappear; the water ſo impregnated is ſaid to kill theſe animalcules, without doing the ſmalleſt injury to the plants. Some uſe a ſponge; but this is too laborious and dilatory a method, where the plants are numerous, and all or moſt of them affected. Perhaps a ſtrong decoction of the tobacco leaves, uſed when perfectly cool, might be found ſtill more effectual; the experiment might likewiſe be practiſed on cane pieces, by means of a water engine, with a *roſe-head* fixed upon the diſcharging pipe.

The bog-walk pine is not ſo ſweet or agreeable as the others; and next to the ſugar loaf, the Montſerrat pine is reckoned moſt eligible; there is, however, a variety in their flavour, accommodated to different palates, ſome being more acid, or more rich and cloying than others.

The fermented juice of the ſweeter ſorts has been made into a very pleaſant wine, and is ſometimes mixed in the ciſterns that contain the liquor for rum, in order to communicate a more agreeable zeſt. They are a profitable commodity in this iſland, either for ſale in the towns, or to the ſhipping; and ſome of the fruit is ex-

ported by way of preſent, preſerved in ſyrup, as they form a very elegant appearance with their crowns, at a deſert.

They are now ſo well known in Europe, that more need not be ſaid of them.

141. WILD-PINE. — *Tillandſia maxima.*

The plants of this claſs were formerly ranged under the head of the viſcus, or paraſitical; which, inſtead of rooting in the earth like other plants, fix themſelves, and take root on the bodies and branches of trees.

There is an infinite number of them in Jamaica, ſome of which may be made to grow upon a broom, or a mop ſtick, fixed upright in the ground; which proves that they derive their ſupport and growth principally by abſorption of moiſture from the atmoſphere.

The wild pines, are by much the largeſt of this claſs, and very frequent in this iſland, in the thick woods of the interior mountains; where they are ſeen growing in abundance between the forks, and on the larger branches of the bigger trees; and by the eaſy bend, and hollow baſe of the leaves, become natural reſervoirs, which catch water from every ſhower that falls upon them, ſufficient to laſt during the longeſt continued drougths, and at hand to ſupply the thirſty hunter, or to refreſh other animals. Nothing can be more ſignal than the benevolent and wiſe proviſion which the Deity has made in the example of the vine before mentioned, and this plant, for remedying thoſe ill effects which the inclemency of weather may occaſion in this climate to the inhabitants. In the deep receſſes of the foreſt, and where the ſoil is rich, and the trees of great magnitude, the wild-pine preſents its cooling beverage at every turn; in the more ſterile rocky ſituations, where the trees are ſtunted, and the pine cannot vegetate ſo luxuriantly, we find its place ſupplied with the wild-vine; there is no end to our admiration of the Divine benignity, nor ought we to fix any to our gratitude.

142. LIME. — *Citrus fructu ovato, minori, acido.*
Id. *Fructu rotundo.*

This bushy tree does not grow to any considerable height or bulk; it is commonly used in fences. The fruit is well known, as a principal ingredient in punch. If intended for exportation, it should be gathered when a yellowish tinge first begins to appear on some part of the rind, and will keep well, hung up in an airy part of the ship in nets; or, where a quantity is sent, it may be packed up in dry corn husks, and stowed in a cask which has some air-holes made in it. If a method could be fallen upon of drying the ripe fruit in Jamaica, until the coat grew perfectly hard and tough, it would bear the voyage much better so preserved, and go in excellent condition for use; and this, I apprehend, may be done by exposing it, spread out on a platform, to the hot sun, after the manner of pimento, for a week or two before it is packed for exportation. The unconcocted juice of the green fruit is generally injurious to weak bowels.

This fruit, as well as the following, makes an excellent sweetmeat, cleared of the pulp, and prepared with the best clarified syrup.

The bark and fibres of the root are excellent strengthening aperitives, and found frequently effectual in obstinate febrile cases, as well as in weaknesses and obstructions of the bowels. The leaves are generally used in discutient baths; and the fruit in a variety of cases. The crude juice, mixed with salt of wormwood, is given in the state of ebullition in fevers, and commonly used in the composition of saline draughts. The fruit is roasted, and the pulp applied to cleanse ulcers. It answers all those intentions where a livelier sub-acid than that of the lemon is required.

The Negroes take the young fruit soon after it is formed, or when it is about the size of a small hazel-nut, pare off the rind, which they beat into a fine pulp, and with a hair pencil apply it carefully to the lids of sore eyes, for a cure. It is supposed, this rawness of the eye-lid, accompanied with a humour, is generally caused by worms, which lodge in it, and that this application destroys them. This hint is worth a further attention, since the animalcules, if they really lodge there, may be discoverable by proper glasses; and hence the knowledge obtained, whether the application would be proper, or otherwise.

There are varieties of this fruit. — The ſmall round lime; the large oval; the bergamot; the ſweet lime.

Next follow the lemons.

143. THE COMMON, or LISBON LEMON. — *Citrus vel Limo arbor.*

Theſe differ little, except in the roughneſs, or ſmoothneſs, and diameter of their coat.

144. ST. HELENA LEMON. — *Citrus fructu majori, acido ovato.*

This is cultivated for the largeneſs of the fruit, one of which will yield above half a pint of juice; and ſeems to be a milder ſub-acid than the common lemon.

The efficacy of lemon juice in preventing the ſea ſcurvy, has been commended by all modern writers on the ſubject, and was not unknown in the earlier times of our navigation. Sir James Lancaſter, in his voyage where he was general in the Eaſt Indies, in the year 1601, carried with him ſeveral bottles of lemon juice; and by giving three ſpoonfuls to each ſailor in the morning, who then faſted till noon, kept them entirely free from, or cured them of, this terrible diſorder.

The juice of limes and lemons depurated, and mixed with good rum, makes the liquor called *ſhrub,* which may be conſidered as an article of export.

145. SOUR ORANGE, or SEVILLE. — *Aurantium foliis, ovato-lanceolatis, fructu acido.*

146. SWEET, or CHINA ORANGE. — *Aurantium foliis lanceolatis, acutis, fructu dulci.*

147. SHADDOCK. — *Aurantium foliis, ovato-lanceolatis, craſſis, fructu maximo.*

Theſe are ſo well known, as to require no deſcription. The firſt grows wild in many parts of the woods, and is but little regarded. The ſecond varies much in flavour, and appearance of the coat, occaſioned probably by the difference of ſoil and ſituation. I am perſuaded, that if pains were taken, theſe fruits might be brought here to the utmoſt pitch of perfection.

They

They thrive beſt in a brick-mould ſoil; I have ſeen the China orange, produced from a tree growing in ſuch a ſoil, ſo exquiſitely ſweet, that when the fruit was ripe, the whole rind was covered with a *ſaccharine farina*.

The ſhaddocks, in general, are but indifferent; moſt of them inclining to a white pulp or fleſh, and a watery bitteriſh juice, greatly inferior to the Eaſt India fruit. Mr. Miller accounts for this by remarking, that by conſtantly raiſing theſe trees from the ſeeds, the fruit degenerates continually; whereas, if the inhabitants would only *bud* or inoculate from the good ſort, they might have it in as great plenty as they pleaſed: but that they reſign the whole to nature, ſeldom giving themſelves any further trouble, than to put the ſeeds in the ground, and leave them to grow as nature ſhall incline. This obſervation of his is perfectly true; and, perhaps, their practice is not ſo much the effect of careleſſneſs, as the want of knowing how to perform the *inoculation*; for which reaſon, I ſhall give the method recommended by that ingenious writer, which is very practicable in Jamaica, and where we may hope to ſee it adopted; ſince it is ſurely ſome ſatisfaction to poſſeſs ſo favourite a fruit in its moſt perfect and delicious ſtate, whether for conſumption within the iſland, or for exportation. I am the rather induced to this, upon finding that oranges are an article of export from ſome of the Northern colonies, where they certainly cannot be brought to the ſame degree of goodneſs, of which they are capable, with moderate culture, in this iſland; for, in fact, the fineſt China orange I ever ate in England, was not comparable to the worſt I have taſted in Jamaica.

The exports from Charles Town, South Carolina, in the year 1747, comprehended 296,000 oranges; in 1761, 161,000. Whence it appears, that this fruit is as much an eſtabliſhed commodity for their export, as it is at Liſbon, or Seville, and may, with propriety, be made ſuch at Jamaica.

The manner of performing the inoculation is as follows: you muſt be provided with a ſharp penknife, having a flat haft (the uſe of which is to raiſe the bark of the ſtock to admit the bud), and ſome ſound mat, which ſhould be ſoaked in water to increaſe its ſtrength; the various barks uſed for making ropes in this iſland, will anſwer this purpoſe full as well. Then having taken off the cuttings, or young ſhoots, from the trees you would propagate, you ſhould chooſe a ſmooth part of the ſtock,

ſtock, about five or ſix inches above the ſurface of the ground, if deſigned for dwarfs; but if for ſtandards, they ſhould be budded ſix feet above ground: then with your knife make an horizontal cut croſs the rind of the ſtock, and from the middle of that cut make a ſlit downwards, about two inches in length, ſo that it may be in the form of a T; but you muſt be careful not to cut too deep, leſt you wound the ſtock; then having cut off the leaf from the bud, leaving the foot-ſtalk remaining, you ſhould make a croſs cut about half an inch below the eye, and with your knife ſlit off the bud, with part of the wood to it, in form of an eſcutcheon. This done, you muſt, with your knife, pull off that part of the wood which was taken with the bud, obſerving whether the eye of the bud be left to it, or not (for all thoſe buds that loſe their eyes in ſtripping ſhould be thrown away, being good for nothing); then, having gently raiſed the bark of the ſtock where the T inciſion was made, with the flat haft of your knife, clear to the wood, you ſhould thruſt the bud therein, obſerving to place it ſmooth between the rind and the wood of the ſtock, cutting off any part of the rind belonging to the bud, which may be too long for the ſlit made in the ſtock; and ſo having exactly fitted the bud to the ſtock, you muſt tie them cloſely round, beginning at the lower part of the ſlit, and proceeding to the top, taking care that you do not bind round the eye of the bud, which ſhould be left open. When the buds have been inoculated two or three weeks, thoſe which remain plump and freſh, you may depend are joined; and at this time the bandage muſt be looſened, which if not done in time, will pinch the ſtock, and greatly injure, if not deſtroy, the bud.

The directions I ſhall inſert hereafter, with regard to the tranſportation of plants and fruits from one climate to another, may furniſh hints for the method of packing the fruits of this claſs, when deſigned for export.

The rinds of the orange, and citron which likewiſe flouriſhes here, have many medical virtues; and, when preſerved, are applied to a variety of culinary uſes; however, the high duties on ſuch confectionary diſcourage their exportation in this form. But the diſtilled water obtained from their flowers might be made here in large quantity, and great perfection, for export, and would anſwer in point of profit. A perſon ſkilled in this manufacture might, by variouſly blending the

different flowers of the ſeveral ſpecies, increaſe the value and demand for it at home. The citron water conſtitutes a ſeparate, and no mean article, for commerce. The ſmaller ſhaddock, or *forbidden fruit*, is preferred by ſome palates to the larger, for its ſuperior ſweetneſs.

The ſeeds of all the ſpecies have a bitteriſh, but pleaſant taſte, and, doubtleſs, would make very good emulſions, which might be ſucceſsfully uſed, when the ſtomach is weak and languid, and cannot bear the ſtronger bitters; nor is it improbable, but they may prove an excellent mixture with milk in conſumptive caſes. They are very ſucceſsfully adminiſtered in dry belly-aches, and convulſive ſpaſms; and one of the moſt effectual remedies that can be uſed to reſtore weakly limbs to their former vigour; but it ſhould be continued for ſome time, aided by regularity and other aſſiſtants, and uſed before the parts are emaciated.

The ſhaddock is generally in perfection in December; the orange and lemon ſpecies are to be had all the year round.

148. WATER LEMON. — *Paſſiflora* (4) *foliis cordatis productis, &c.* Br. p. 328.

This grows frequent in the woods, and ſupplies the wild hogs with a great part of their food in the ſeaſon. It bears a beautiful flower; the fruit is a pleaſant ſub-acid, cooling, and highly refreſhing in fevers; it is a climber, and makes very fine arbours.

149. LIQUORICE WEED, or SWEET-BROOM WEED. — *Scoparia erecta ramoſa, &c.*

150. WILD LIQUORICE, or RED-BEAD VINE. — *Glycine foliolis pinnatis, ſpicis nodoſis axillaribus.*

The firſt grows, by a branched ſtalk, to the height of 18 or 20 inches. The whole plant, eſpecially the ſlender ſhoots at the top, is frequently uſed in diluting and pectoral infuſions, and may deſervedly be conſidered as an excellent vulnerary.

The European liquorice grows well in this iſland, but it is inferior in virtue to the ſecond plant above-mentioned, which climbs in all the hedges on the South ſide, and winds itſelf about any ſhrub in its neighbourhood.

The ſtalks are about the ſize of a gooſe-quill, ſet with ſmall winged leaves, equal in number on each ſide, and ranged oppoſite to one another,

ther, which poſſeſs the exact liquorice taſte. The pods contain three or four ſcarlet peas, with a black ſpot, which in the Eaſt Indies and Africa are ſtrung for necklaces. A ſtrong decoction of the leaves, boiled afterwards into a thick ſyrup with ſugar, is frequently given for a cough, and generally found to be a certain remedy. An infuſion is likewiſe made from the leaves and tops for the ſame intention. It opens both the body and the ſkin very mildly, and helps expectoration.

The ſeeds are of a very deleterious nature; and, when bruiſed, cannot be taken inwardly without great danger; when ſwallowed *whole*, they commonly paſs intire, and are rarely attended with any of thoſe violent ſymptoms that accompany the powder, which operates furiouſly wards and downwards.

An extract may be made from the roots, no ways inferior to what is obtained from the roots of liquorice.

151. Melon. — *Melo.*

There are ſeveral varieties of the melon kind here, where they thrive exceedingly well, and with little trouble or attention.

The varieties conſiſt in the ſhape, whether round, oval, compreſſed, or long; the roughneſs or ſmoothneſs of coat; the colour of the fleſh, whether white, red, greeniſh, or yellowiſh; and in ſweetneſs and flavour. A gentleman here, the moſt curious in their cultivation, uſed to prepare ſome fine mould in ſmall baſkets, in which the ſeed was ſown; theſe baſkets were ſet in little hillocks of earth, and ſuffered to decay. I know not the particular reaſons for this method, but his fruit was of a ſuperior quality to moſt. The muſk and cantelupe are higheſt in eſteem, grow to a large ſize here, and arrive at the utmoſt perfection, particularly the latter kind with a greeniſh fleſh, which (contrary to Mr. Miller's obſervation in regard to thoſe raiſed in England) is by far the richeſt, fineſt flavoured, and diſſolves in the mouth. The muſk has no net work about it here as in England, and turns very yellow.

152. Water Melon. — *Anguria foliis multi partitis.*

This fruit grows here to a monſtrous ſize; the ſort which has the red pulp, is preferred to the other. It is more recommended by its good effect in cooling the blood, than by its flavour, which much reſembles that of water, ſlightly ſweetened with ſugar.

Dr.

Dr. Haſſelquiſt cautions, that this fruit ſhould be eaten with circumſpection; for if taken liberally in the heat of the day, when the body is very warm, bad conſequences often enſue; and it may occaſion colics, looſeneſſes, fluxes, a foul ſtomach, &c. It will ſometimes chill the ſtomach like ice, and a too free indulgence in it is thought to nouriſh and multiply the gourd and tape worms.

The like caution is requiſite in regard to all the melon and cucumber tribe, which ought to be eaten ſparingly in this climate, and not without ſome corrective, ſuch as ſugar, Madeira wine, or pepper and ſalt.

The French in the iſlands uſe ſugar, and ſometimes an addition of a little lime juice, with moſt of their fruits.

153. Wild Cucumber. — *Cucumis ſubhirſutus, minor, ſylveſtris.*

This grows wild in the woods in great abundance; and the fruit is eſteemed a wholeſome, agreeable ingredient in ſoups; it makes a good pickle. The European cucumbers thrive ſo well here, that they may almoſt be reckoned indigenous. The tribe of gourds is very numerous; I ſhall only notice the more uſeful.

154. Small Gourd. — *Cucurbita villoſa, fructu pyriformi minori.*

The ſhells are generally made uſe of by the Negroes for bottles and water-cups; a decoction of the leaves is given in purgative clyſters; and the pulp is often employed in reſolutive poultices.

155. Slender-winding Gourd, or Sweet Gourd. — *Cucurbita fructu longiſſimo, bipedali, incurvo, obtuſo.*

This is cultivated for the ſake of its fruit, which, when boiled, is wholeſome and nouriſhing, frequently made into puddings, and particularly reliſhing with ſalt meat.

156. Large Gourd. — *Cucurbita fructu maximo ſubrotundo.*

This is cultivated chiefly for the ſake of its ſhell, which grows frequently ſo large as to contain between 30 and 40 quarts. Dr. Barham ſpeaks of one preſented to him which held 36 quarts; and adds, that he carried two to England, which were perfectly globular, exactly of a ſize, and contained 24 quarts each. Where the *aloes* is manufactured for export, it is commonly preſerved in theſe ſhells, of middling bulk.

They are generally uſed here by the Negroes inſtead of large jars, for holding water, ſalt, rice, corn, &c.

The Negroes prepare them in the following manner: they make a hole at one end, into which they pour hot water in order to diſſolve the pulp; after this they extract the pulp with a ſtick, and rinſe the whole inſide thoroughly with ſand and water, in order to looſen the fibres that remain, and clear them away. After they are thus cleanſed, they are ſuffered to dry, and are then fit for uſe. The pumkin and ſquaſh are no leſs generally cultivated, and the boiled fruit in univerſal eſteem at every table.

157. Chocho. — *Sechium.*

This vine is cultivated in moſt parts of the iſland, and grows luxuriantly. It makes good arbours. The fruit, boiled, is ſerved up by way of a green, and eſteemed agreeable and wholeſome. It is likewiſe uſed for fattening hogs. With the addition of ſugar and lemon juice, it is no bad *ſuccedaneum* for apples, when ſuch a ſauce is wanted for pork or gooſe. The root, boiled or roaſted, is extremely palatable and nouriſhing.

158. Papaw. — *Carica mas et fœmina.*

The male and female trees may be propagated by layers. They grow wild in moſt parts of the iſland. The flowers, buds, and tender foot-ſtalks of the female tree are preſerved as a ſweetmeat, and the long mango papaw or fruit as a pickle, which is very little inferior to the Eaſt India mango. The rounder fruit when ripe is boiled, and eaten with any kind of fleſh meat, and is looked upon as perfectly wholeſome; but eaten raw, it contains an acrid juice, very injurious to the inteſtines; and ſo penetrating is this fluid in the green unripe fruit, that, boiled with the hardeſt ſalt meat, it will render it perfectly ſoft and tender. It is ſaid to cauſe the like effect on hogs, who, if fed with it for any conſiderable time, are ſubject to have their guts excoriated with its acrimony. The flowers of the male tree are white, and thoſe of the female yellowiſh, and much larger; but the ſex is plainly diſtinguiſhable to the moſt common obſerver, by the former never producing fruit.

The

The green fruit, thoroughly boiled, ſqueezed, and dulcified with a little ſugar and lemon juice, is frequently uſed as a ſubſtitute for apples in ſauce and tarts, and reſembles them ſo exactly in taſte, as ſcarcely to be diſtinguiſhed.

The milky liquor, obtained from the raw fruit, is ſaid to take away warts, and deſtroy the ring-worm.

The Negroes are poſſeſſed with an opinion of the good or bad qualities of particular trees, when planted near any habitation, as to the effects their neighbourhood may occaſion to the inhabitants. This opinion ſeems to be well founded; for as trees (eſpecially in this climate) have a very extenſive atmoſphere, and diffuſe a fragrant or diſagreeable odour to a great diſtance around them, ſo it is highly probable, that theſe *effluvia* are impregnated with ſome of the more eſſential properties of the tree, from which they are reſpired; and thus may have a conſequence to health, ſimilar to the breath of a diſeaſed perſon, or the vapour of a perfumed ſubſtance. There may alſo be ſalutary or noxious qualities in the atmoſphere of ſome, when the particles are ſo ſubtile as not to be diſtinguiſhed by the olfactory ſenſe. The ſmell of the manchioneel fruit has ſomething in it which induces a ſenſation of faintneſs and languor. The ſcent emitted from the opopinax wood, and roots freſh cut, is exquiſitely cadaverous and loathſome. The ſecret agency of theſe *effluvia* of trees and plants may have a more powerful influence upon human health, than many are aware of.

The Negroes ſuppoſe that the papaw trees are very conducive to render the air healthy, and therefore plant them near their houſes. The bloſſoms are extremely odoriferous, and the trunks ſo ſucculent, and growth ſo quick, that they poſſibly aſſiſt to drain the ſoil, where they are planted, of ſuperfluous moiſture. Theſe properties, excluſive of any other, may ſerve to correct the air, in certain ſituations. The full-grown papaws, as well as the plantain trees, ſeem to be good natural conductors of lightning, from the redundancy of aqueous ſap which they contain.

159. Guava. — *Pſidium fructicoſum.*

The fruit of this tree, which is common every where in the iſland, is juſtly eſteemed very agreeable, eſpecially the preſerve or marmalade made from it, which might form an article of export to the North American colonies. The wood is extremely tough, and generally

uſed for cattle *bows* and mule crooks. The ſeeds of the fruit are eſteemed an excellent reſtringent medicine in ſome fluxes.

160. Seven-year VINE, Spaniſh Arbour VINE, or Spaniſh WOODBIND. *Ipomea heptadactyla major ſcandens, flore majori campanulato.*

This plant is a climber; and, from the thickneſs of its foliage, and largeneſs of the flowers, it is extremely pleaſing to the eye; it is chiefly planted for arbours, and ſpreads to ſuch extent, that it may be carried over an arbour of 300 feet length, from one root. Every part of this plant is purgative, and it was Barham's opinion, that a *ſcammony* might be made from the milky juice of the root.

161. The GRANADILLA—*Paſſiflora foliis amplioribus cordatis,* is planted for the ſame intention, grows well from the ſlip, and bears a moſt agreeable fruit, which contains a white pulpy fluid, intermixed with the ſeeds, of a mild ſubacid taſte, and delightful flavour, cooling and medicinal in feveriſh heats.

162. The Climbing, or VINE-SORREL—*Rumex ſylveſtris ſcandens, foliis cordato angulatis.*

This plant is very common in the woods, and raiſes itſelf to a conſiderable height with the help of the neighbouring ſhrubs. With its clavicles it lays hold of any thing that is near; and ſo thick in foliage, that it covers pales or walls intirely. The leaf is thick and ſucculent, and preſerves its verdure throughout the year; it is of an irregular heart-form, increaſing more on one ſide of the middle vein or rib than on the other; and has a very ſharp ſour taſte like ſorrel; when it grows in a free open air, the flowers have an agreeable flavour, and are ſometimes uſed in making of whey, where wine cannot be admitted, and other acids are thought too active and irritating to the ſtomach.

It bears a round berry, firſt green, but turning black when it comes to maturity; this is ſometimes inveloped with a large matted bunch, like dodder, as big as a man's head; and, at the ſeaſon of the year when this bunch appears dryiſh and withering, if it is ſqueezed, there iſſues a light ſubſtance like lamp-black, which will adhere ſo cloſely to the fingers as not to be eaſily waſhed off. It is

conjectured, this emanation might be of uſe for ſtaining, colouring, or dying, if the properties of it were accurately examined.

163. Red Sorrel—*Hibiſcus rufeſcens, acetoſus foliis trilobus.*

164. White Sorrel—*Hibiſcus luteus.*

The flowers, cups, and capſulæ of theſe two plants, freed from the ſeeds, are the only parts that are uſeful. They differ but little in taſte and quality from the common ſorrel, except that their acid is ſtronger, and of a livelier, pleaſanter flavour. The acid of the white (or rather yellow flowered) is ſomewhat fainter than the other. Both are cultivated in moſt gardens. The flowers are made, with the help of ſugar, into very agreeable tarts and jellies; or fermented into a cooling beverage, very cordial in fevers; they alſo make a very excellent vinegar. They bloſſom about the month of October.

The ſyrup prepared with them is thought to exceed that of the Engliſh ſorrel. The beſt way of making it is to take the *capſules* or flower-leaves which are moſt juicy, and, adding twice their weight of double-refined ſugar, put them without any water into a glaſs veſſel, and place it in a ſand-heat; the digeſtion is carried on with a moderate heat, till the leaves are all diſſolved, which ſoon happens, as they are ſoft and ſucculent; the red ſort yields a beautiful ſyrup, which will keep much longer than that which is made with water.

The bark of theſe ſhrubs is ſtrong and tough, and has the appearance of being adapted to the ſame manufacture as hemp.

165. Artichoke—*Cynara.*

There ſeem to be three varieties of the artichoke in this iſland; the firſt ſort is the common ſmall French; the ſecond the chardon; the third the large French. They are cultivated here, and propagated by ſlips or ſuckers, taken from the old roots. The third ſpecies has not been long introduced from Hiſpaniola, and is generally diſtinguiſhed by the name of the Hiſpaniola artichoke; it is much ſuperior to the others. I have ſeen the bottoms of ſome near twenty inches in circumference. As yet they are chiefly cultivated in the Liguanea mountains, but might undoubtedly ſucceed as well in all the other cooler mountainous parts, and probably at the North ſide.

The

The French pickle or preſerve them in ſalt; but, in this ſtate, they are not near ſo reliſhing as when they are freſh.

The ground where they are planted ſhould be well dug, freed from weeds, and ſo thrown up, as to prevent water from lodging about the roots.

It is beſt to leave only one ſhoot and head to each root; by which means the artichokes will be much the finer and larger. They are profitable articles for the town markets.

166. Samphires.

There are varieties here of the ſamphire. The firſt is the *crithmum vulgare*, or common ſamphire, which grows in all the ſalt-grounds by the ſea ſide, is ſimilar to the Britiſh herb, and makes an equally good pickle. The ſecond is the *portulaca azoides maritima procumbens*, or aizoon, with a purple flower, thick, ſucculent, ſaline leaf, reſembling purſlane, and is proper alſo for pickling. This is called by ſome the larger turnſole, or heliotrope. The third is the ſupine, aſh-coloured turnſole, or *heliotropium*, of ſome authors, with a white flower. But the moſt valuable is the *ſalſola* fruteſcens, or *kali* fruticoſum coniferum of Sloane, with a white flower, which is common in all the ſalinas on the South-ſide of the iſland. It abounds with alkalious ſalts, and might be prepared for the Britiſh manufactories of ſoap and glaſs: Browne thinks that the azoides, will anſwer the ſame purpoſe; this is very frequent about Paſſage Fort.

The manner of making the *kali* for glaſs is as follows:

Having dug a a trench near the ſea, laths are laid acroſs it, upon which are placed the herbs in heaps; and a fire being made below, the liquor which runs out of them drops to the bottom, which, at length thickening, becomes the *ſal alkali*; partly of a black, and partly of an aſh colour, ſharp, corroſive, and of a ſaltiſh taſte. This when thoroughly hardened, is like a ſtone in conſiſtence, and is fit in this ſtate for exportation.

167. West India tea. — *Capraria, erecta ramoſa*, &c.

This plant is very common every where in the ſavannahs, and about the towns. What Barham ſays of it may not be thought unentertaining. A Frenchman (ſays he), captain of a ſhip, affirmed

to

to me, as we were walking about our town of St. Jago de la Vega, and obſerving this plant growing ſo plentifully, that it was the ſame as the tea plant of China; that he had lived in that part of the world many years, had ſeen large fields of it, and the manner of cultivating it, and all the difference was, that the Chineſe plant was larger, which he aſcribed to their care, and culture of it; and had no doubt, but the Jamaica plant, if it was ſet in rich ground, and attended with equal care, would grow to a much greater ſize, than in its wild ſtate.

Father Labat was led into the ſame miſtake, who, finding the *capraria* at Martinico, aſſerted it to be the real tea-plant.

The difference between them will appear better by compariſon.

Capraria.	*Chineſe Tea-plant.*
Stalk.	*Stalk.*
Riſes to the height of three or four feet, woody, ramoſe, covered with a ſmooth clay-coloured bark. The branches diſpoſed in no regular order, and very thick-ſet with leaves.	Riſes to the height of five or ſix feet, woody, ramoſe, covered with an aſh-coloured bark, reddiſh towards the top. The branches alternate, in no regular order.
Leaves.	*Leaves.*
From one to two inches long, half an inch broad in the wideſt part, tapering to a ſharp point, of a deep-green colour, ſmooth, thin, ſerrated at the edges, no footſtalks, or at moſt very ſhort.	From two ½ to three inches long, and near one in breadth in the wideſt part, elliptical, obtuſe at the extremity, and not ſharp, as *Kæmfer* ſuppoſes; of a deep-green colour, ſmooth, thin, gloſſy, ſerrated, the footſtalks very ſhort.
Flowers.	*Flowers.*
Come out between the leaves and ſtalk, ſtanding on a ſhort footſtalk, very ſmall, white, ſeeming to conſiſt of five petals, but are only deeply divided into five parts, capſule green.	Come out between the leaves and ſtalk, ſtanding on a ſhort footſtalk, large, white, conſiſting of ſix petals, or varying in number; but when they conſiſt of ſix, two are leſs and exterior, greeniſh, incloſing the flower before it is fully blown,

blown, and four interior, and divided, the capſule green.

Seed.

The *pericarpium* oblong, cylindrical, four-cornered, very ſmall, when dry is of a light-brown colour, contains a number of ſmall brown ſeeds.

Seed.

The *pericarpium*, in form of three globular bodies united, has three cells, and three ſeeds, lodged ſingle, globous, angulate on the interior ſide, of a reddiſh-brown colour.

The difference between theſe two plants is obvious, more particularly in the flowers, ſeed veſſels, and ſeeds, even from this general deſcription of each; and the diſtinctions would probably multiply, on comparing the ſexual parts of their flowers. Barham himſelf was ſatisfied they were not the ſame, but he ſeemed to think the *capraria* a ſynonym: for he adds his opinion, that it may poſſibly have the ſame virtue, and mentions a gentleman of his acquaintance, who never drank any other than the Weſt Indian tea; and that, although he could not coil up the leaves ſo dextrouſly as they do in China, yet he performed this operation tolerably well; and every perſon, whom he regaled with it, extolled it as the very beſt green tea they ever drank in their lives.

It is certainly unknown to what perfection it might be brought, if reclaimed from its wild ſtate, and cultivated in the rich ſoil of gardens; and it well deſerves the experiment of the curious.

The decoction of the leaves, is recommended as an excellent febrifuge.

168. Avocado Pear. — *Perſea.*

This tree grows to the ſize of the largeſt European apple tree. The pulp of the fruit is in univerſal eſteem in the iſland; and diſtinguiſhed by ſome with the name of *vegetable marrow*; it is generally eaten with ſugar and lime juice, or pepper and ſalt; it has a delicate rich flavour, and is extremely nouriſhing. There are two ſpecies of the fruit, the green, and the red; the latter is preferred, having a firmer, better-taſted fleſh than the other; but I have obſerved that the goodneſs of both depends entirely upon the place of growth; for the fruit produced in a wild ſtate is ſmall, and often bitter;

bitter; the fineſt come from the Red Hills near Spaniſh Town, the Liguanea Mountains, and the inland parts. They are a favourite food with the Negroes, and often conſtitute the ſole ſupport of many of the lazier, who have neglected to ſtock their grounds with other proviſion. They are thought great provocatives; and, for this reaſon it is ſaid, the Spaniards do not like to ſee their wives indulge too much in them. It is extraordinary, that moſt creatures are obſerved to eat this fruit with pleaſure; it is equally agreeable to the horſe, the ox, the dog, cat, and birds in general. It is in perfection from May to September. The Negroes are ſometimes apt to eat it immediately after the May rains, or when it is crude and watery, in which ſtate it occaſions fluxes and diarrhœas. The ſeed is contained in the center, and rattles or ſhakes when the pear is ripe, and fit to eat. This ſeed is hard, wrinkled, and heart-formed. On writing upon a white wall with one of them, the letters turn to a red colour, and will not fade, until the wall is waſhed, and even then with difficulty. So, if a table-cloth, or rather white linen, is laid upon the ſeed, and a letter or figure pricked out with a pin, the cloth will be imprinted with the form in a dark yellowiſh colour, or ſtain, which cannot eaſily be got out.

It is ſeen by the experiment on the wall, that the alkali of the lime or plaiſter on the ſurface fixes the juices of this ſeed to a red colour: experiments therefore may be tried, by macerating a quantity of them with lime-water, to diſcover whether they might not produce a tincture proper for giving ſuch a dye to linens, or other ſubſtances?

There are ſeveral other eſculent fruits; but I ſhall, for brevity ſake, range them hereafter in a general liſt, with ſome of the preceding, and mention their particular or remarkable qualities by way of note.

169. VANGLO, WONGALA, or OIL-PLANT—*Seſamum Orientale.*

Two ſpecies of this plant are cultivated in this iſland. They are ſaid to have been firſt introduced by the Jews. The ſeeds are frequently uſed in broths. They are in great eſteem among the Oriental nations, who look upon them as a hearty wholeſome article of diet, and expreſs an oil from them, not unlike or inferior to the oil of almonds. They are cultivated in Carolina with great ſucceſs; and it has been computed there, that nine pounds of ſeed will yield upwards of two pounds

nett wt. of oil, which grows more mellow and agreeable with age, and continues without any rancid ſmell or taſte for many years. The warm taſte of the ſeed which is in the oil, when firſt drawn, wears off in about two years, and it may then be uſed as ſallad oil, and for all the purpoſes of ſweet oil.

The Negroes grind the ſeeds between two ſtones, parch them, and mix with other ingredients. The Jews uſe the oil in cakes, inſtead of butter. In Æthiopia and Ægypt it is uſed for the ſame purpoſes as we do the olive oil. In Greece it is liberally eaten in their cakes and bread; and in China it is equally eſteemed.

The vanglo plant requires a rich warm ſoil; and there are few which more deſerve to be extenſively cultivated in this iſland; ſince it might, with the greateſt propriety, be admitted into general domeſtic uſe, in the room of that abominable rancid butter imported hither from Europe. Nothing but the groſſeſt prejudice, in favour of old habits, can influence the inhabitants to perſevere in the importation of that unwholeſome, nauſeous ſtuff, and to ſwallow it every day with their food, when they may ſupply themſelves with ſo fine, nouriſhing, and wholeſome an oil, as the ſeſamum, for an ingredient in their paſtry; nor are they leſs blameable, for continuing to import the olive oil, which is generally rancid before it arrives, and fitter for perukes than ſallads.

170. Jack-in-a-box.—*Hernandia arborea nuce oleoſa.*

This tree is common in the Windward Iſles, and is ſaid to be frequent in the woods of Portland pariſh. The cups that ſuſtain the nuts are large, and the wind, blowing into the cavity, cauſes a ſonorous, whiſtling noiſe, very often alarming to travelers. The ſeeds are very full of oil, and may be applicable probably to a variety of neceſſary uſes.

171. Anchovy Pear, or West India Mango, Calophyllum—*Palmis affinis malus Perſica maxima*, Slo. Cat. 179.

This beautiful tree is frequent in the mountains, as well as in low moiſt bottoms. The ſeeds grow very readily. The fruit is about the ſize of an alligator's egg, and much like it in ſhape, only a little more

acute at one end, and of a brown, ruſſet colour; when pickled, it exactly reſembles the *Eaſt India Mango*, and by ſome conjectured to be the ſame, or at leaſt to have the neareſt affinity to it. The fruit is ripe in Auguſt.

172. RED MANGROVE—*Rhizophera*, Br. 211. *Mangle pirifolia*, Slo. Cat. 155.

This tree is generally obſerved on the borders of the ſea, in the ſmaller creeks, and on the banks of the maritime rivers. The roots throw out a multitude of fibres, arched, and fixing themſelves in the mud, or ground, intermingled in different directions, which not only ſerve as props to the parent tree, but form by degrees an extenſive range of baſket-work, ſpreading acroſs rivers, or along the ſhore, and protecting its bank againſt the ſurge of the ocean.

The Jamaica oyſters adhere cloſely to theſe fibres, after they have penetrated below the ſurface of the water, and cannot be got off, without cutting ſome of the bark with them, which firſt gave riſe to the fabulous account of their growing upon trees in this part of America.

The wood is very tough and hard, bears water well, and is much uſed for knees and ribs in long-boats, wherries, and other ſmall-craft; for which the angular form of the limbs moſt naturally adapts it.

The bark is moſt excellent for tanning leather; it performs this operation more perfectly in ſix weeks than the oak bark will do in ten; and the leather tanned with it is the moſt durable and firm of any for ſoles.

The decoction of it is a very powerful reſtringent. Barham mentions his having a ſon afflicted with the confluent ſmall-pox to ſuch a virulent degree, that the callous part of his feet ſeparated, and came off intirely, leaving them raw, and ſo tender, that he was unable to ſet them upon the ground; upon which the Doctor ſent for ſome of the tan-vat, or liquor of this bark, from a tanner's; and, adding a little alum, made a ſtrong decoction, in which he bathed his ſon's feet every day; and, in about a week's time, rendered them ſo firm, that he was able to walk about, without any inconvenience.

I have often wondered, conſidering the powerful effects of theſe reſtringent barks upon animal ſubſtances, and that by numberleſs

experiments, their ſtronger infuſions have been found to recover from a ſtate of abſolute putridity, that ſome trials are not made, how far perſons in the latter ſtage of putrid and malignant fevers, when livid *petechiæ* make their appearance, when the blood is nearly diſſolved, and the diſeaſe ſeems deſperate, might not be recoverable, by being plunged into a warm bath made with bark decoctions; the finer virtues of the bark, abſorbed into all the pores ſpread over the ſurface of the body, muſt (it is reaſonable to imagine) have an immediate effect upon the fibres, in ſome meaſure reſtore their tone and ſpringyneſs, and by their antiſeptic quality re-unite the globules of the blood, and correct their diſpoſition to putreſcency. I am perſuaded, from more than one obſervation, that the Jeſuits bark may be adminiſtered to infants in this manner when they are incapable of taking it by the mouth, and with the happieſt effects. Such experiments are deemed *bold*, becauſe they are out of the common track; but ſurely what is called a deſperate caſe would always juſtify the attempt, and eſpecially when it is at leaſt probable that it may ſucceed.

The quantity of fluid which may be carried into the human body by abſorption in a bath is amazing; and upon this principle the ingenious Dr. Hales ſuggeſts a means by which perſons at ſea, when ready to periſh with thirſt from want of freſh water, may obtain a recruit; which is, by immerſing their naked bodies frequently in a tub of ſea-water; they will imbibe the water at every pore freed of its ſalt, which is too large to enter with it, and remains condenſed upon the ſurface of their ſkin [*a*]. But in the caſe of the bark decoction, much of its antiſeptic principles are ſucked in with the water.

173. Poponax or Acacee. { *Mimoſa* 1. Br. 251. / *Acacia Americana*, *Slo. Cat. p.* 152.

It is ſaid, a certain perſon brought the ſeed of it to Jamaica and planted it, affirming that if he lived to ſee it grow, he ſhould get an eſtate by it; but by what means, remains a myſtery. It was certainly the worſt evil he could have introduced; as it became

[*a*] When *Columbus* diſpatched an expreſs from this iſland to the commander at Hiſpaniola, the Indians who were employed in navigating the canoe, plunged themſelves into the ſea every now and then, when almoſt ſpent with the fatigue of rowing, and parched with heat and thirſt; for they had found by experience, that this practice revived their ſpirits, and enabled them to renew their labour.

propa-

propagated, the planters made fences with it in the Southern low-lands and ſavannahs, but its ſeeds diſperſing about, it ſoon ſprouted ſpontaneouſly, and now it over-runs vaſt tracts of land, and maintains its ground ſo firmly, that ſo long as the leaſt particle of the root remains, it never ceaſes throwing up its thorny plants; whence it is next to impoſſible to eradicate it entirely from a piece of land in which it has once flouriſhed. The pods are richly impregnated with a ſticky aſtringent gum, eaſily to be extracted. When they are half ripe, this juice may be made uſe of for cementing broken China. The trunk, when wounded, emits a tranſparent gum, like *gum-Arabic*. This gum is produced from the *acacia vera*, or Ægyptian thorn, which very much reſembles the Jamaica plant, and is found in ſeveral parts of America. The Ægyptians call the true plant, *Charad*, and it is known to botaniſts by another name, *mimoſa Nilotica*, which relates to the place of its growth near the Nile. The huſk of the pods of the Jamaica tree being ſoaked all night in water, and a little allum added, may be boiled to a due thickneſs, and makes a good *black ink*, which never fades nor turns yellow like the copperas ink. Dr. Barham, having carried ſome of the pods with him to England in 1717, gave them to a dyer, who tried them, and reported that they exceeded galls for dying linen, and would be far preferable if they could be procured at a cheap rate. They are liable to be deſtroyed by a worm, but they might probably be preſerved by ſteeping a little while in lime-water, by fumigation with brimſtone juſt before they are packed, or by putting a ſmall bag or box of camphor into the package.

The roots, when bruiſed, yield a very offenſive ſmell; and a decoction made from them is ſaid to be mortally poiſonous.

But ſince this plant is now grown ſo common and even troubleſome, might it not be worth while to try if ſome benefit could be made of it in trade? The perſon who firſt gave it introduction probably miſtook it for the true *acacia*, which yields the medicinal gum and *ſuccus* of the ſhops; experiments are required to determine, whether the gum obtainable from the trunk of theſe trees is not of ſimilar uſe and efficacy in medicine? and whether the gummy juice of the pods may not be extracted, and prepared in a proper form, for a remittance to Europe? Thirdly, whether they cannot be

be brought into demand and consumption among the dyers, as they yield so fine and strong a black tint, which is much wanted for linens.

It is evident from the affinity of these plants, that the Ægyptian might, if it was introduced into this island, be propagated with equal facility.

174. Silk-Grass. *Aloe Species? Aloe Yucca foliis, Slo. Cat.* 118.

This I take to be the aloe "with leaves embracing the stalks, "which are reflexed and indented at their edges. The flowers "growing cylindrical and stalk shrubby." "*Aloe Africana, cau-"lescens, foliis glaucis caulem amplectantibus.*" The "*African sword-"aloe.*" The flowers growing in a pyrimidal spike, tubulous, and of a bright-red colour.

The leaf is not so thick nor juicy as the *semper-vive*, but much longer; some extending five or six feet, and narrow: but not so narrow as the pinguin leaf. The edges of the leaf are set with small prickles, and it rises tapering from the base to the point which is sharp.

The chief use of this plant is for making a kind of vegetable silk, which is manufactured by the Indians into hammocks, ropes, fishing-nets, and many other conveniencies.

For this purpose they lay the blade or leaf upon a flat piece of wood, and, holding it fast at one end, scrape off the outward green substance with a wooden knife, till the silk or fibres appear in straight threads, extending the whole length. After both sides are scraped, it is thrown into clean water, cleansed from the remaining skin and pulp, and, being dried in the sun, is then fit for use. There is no doubt but with a little improvement it might be made capable of being worked up into very fine stuffs and merchandize. Some of these plants, I have been informed, are growing at *Wreck-bay* near the Healthshire hills. They might easily be procured, either from Africa, or some of the greenhouses near London.

175. Jalap, or Four o'Clock Flower.—*Mirabilis.*

This plant is cultivated here chiefly for the beauty of its flowers, which generally open with the cooler hours; and thence it has obtained its name.

The

The root, ſliced and preſerved, opens the body. It has ſometimes been dried, powdered, and adminiſtered for jalap; it purges moderately, but requires to be given in too large a quantity. The root ſcarcely differs from that of the true jalap in appearance; one pound weight of it yields about half an ounce of reſin; but the ſame quantity of the true jalap root gives from an ounce and an half to two ounces; and as the purgative quality lies in the reſinous part, the difference between the two roots in their operation may be eaſily accounted for.

The *true jalap* is a convolvulus plant, climbing upon trees, has a milky, knotted, multangular, reddiſh ſtalk; with here and there ſolitary leaves, which are tender, very green, and heart-formed. The flowers monopetalous, with four indentations; the outſide of a pale roſe-colour, but purple on the inſide towards the bottom, and ſtanding in a capſule; after the flowers follow the ſeeds, about the ſize of peas a little compreſſed, and contained in an umbilical *ciſta*. The outſide of the root is rugoſe, brown, of an oblong form and large. Dr. Houſton carried two or three of theſe plants from the Spaniſh Weſt-Indies to Jamaica, where he ſet them in a garden; but they were afterwards rooted up and deſtroyed by hogs.

They are eaſily procureable from the Spaniſh Main, and might be propagated in this iſland, by a ſmall degree of care and attention given to ſuch as may be introduced for trial.

The *Aſclepias* (4th) of *Browne*, p. 183. "Scandens villoſa "major, foliis et capſulis majoribus ovatis."

"*Climbing Aſclepias with large pods.*"

And the 5th of the ſame, "minor ſcandens foliis rariſſimis, floribus "paucioribus racemoſis racemis ſparſis."

"*Smaller climbing Aſclepias,*" which are both claſſed by him under the Ipecacuanha tribe, ſeem to approach neareſt.

The former was found in Portland and St. Thomas in the Eaſt; the latter is more frequent in the lower ſwampy lands.

176. Barbadoes Pride, or Flower Fence.—*Poinciana.*

This ſhrub frequently riſes to the height of ſix or ſeven feet, and bears an elegant flower. Sir H. Sloane calls it *ſena* ſpuria, arborea, ſpinoſa, or baſtard ſena, and it comes very near to the *Alexandrine*

ſena;

ſena; for the leaves, when dried and kept for ſome time, are with difficulty to be diſtinguiſhed from that of the ſhops, and poſſeſs the ſame virtues. The flowers make a delicate red ſyrup of a purgative quality, and the root affords a *ſcarlet dye.*

The pod likewiſe reſembles the Alexandrine. This plant is fulleſt of flowers in the months of November and December, and the ſeed ripens in January.

177. BASTARD SAFFRON.—*Carthamus.*

This plant was introduced by the Jews, from the Spaniſh Main.

The flowers are uſed by the Spaniards in all their broths, to give them a yellow colour. They are alſo of uſe in *dying.*

The ſeed, or rather kernel within the ſeed, is what is chiefly applied to medical preparations; it is pounded, and the emulſion taken in water ſweetened with honey, or in chicken-broth as a purge.

178. WILD SAGE.—*Salvia Sylveſtris, arboreſcens.*

There are varieties of this ſhrub, which grows very common in all the lowlands and hills near the coaſt. The leaves are extremely odoriferous, and ſeem impregnated with a reſinous or balſamic juice. They make an excellent ſtomachic and febrifuge tea, which promotes diaphoreſis, and relieves the head. When bruiſed and applied by way of poultice, they will cleanſe and heal the worſt ulcers; they are likewiſe an admirable vulnerary; and a decoction made with them ſtrengthens weak limbs or joints: the flavour of the tea reſembles what is made with the garden ſage, except that it is more aromatic.

179. SPIKENARD. { *Meſoſphærum hirſutum, &c.* Br. p. 257.
Mentaſtrum maximum, Slo. Cat. 64.

The leaf reſembles that of baum, but is much larger; the ſtalk large, ſquare and rough, with a globoſe head, full of ſmall blue flowers. It grows in great abundance in the low gravelly lands about Kingſton and Old Harbour, riſing to the height of two or three feet. If the tops are ſqueezed, a clammy or oleaginous ſubſtance exſudes, of a ſtrong odoriferous ſcent, like the beſt oil of

ſpike

ſpike or nard. It is an annual, and in greateſt perfection about Chriſtmas, ſoon after which none of it is to be ſeen.

It is a powerful provoker of urine, and diſſolvent of the ſtone. Barham mentions an extraordinary caſe of a patient of his, who was relieved under the laſt mentioned diſorder, by drinking a ſherbet, in which a little ſpirit of vitriol, and an oily ſpirit extracted from this plant, were infuſed; which produced a large evacuation of gravel and ſtones, "as many (he ſays) as would fill the hollow "of the hand;" the conſequence of which was, a perfect exemption from the like complaint ever after.

In urinary obſtructions it is a certain ſpecific, and is ſometimes adminiſtered to drive out the ſmall-pox.

It is one of the moſt grateful cephalics and alexipharmics of this claſs, and may be uſed in moſt diſorders of the nerves and bowels, where ſuch warm medicines are required.

180. WILD ROSEMARY.—*Croton Ricino affinis, odorifera, fruticoſa.*
181. WILD TANSEY.—*Ambroſia erecta, ramoſa.*
182. WILD WORMWOOD.—*Parthenium ſubhirſutum, ramoſum.*
183. JAMAICA RUES.—*Rutæ murariæ.*

Theſe ſeveral plants and their varieties poſſeſs the ſeveral virtues and properties in medicinal uſe, ſuch as baths and fomentations, that are remarked in European plants of ſimilar denomination; except that the roſemary of this iſland is more aromatic and odoriferous.

184. WILD or BASTARD IPECACUANHA. { *Aſclepias* 2. Br. p. 183. with a ſaffron-coloured or white flower. *Apocynum erectum folio oblongo Sl. Cat.* 89.

185. LESSER BASTARD CLIMBING IPECACUANHA. { *Aſclepias* 3. Br. p. 183. with a ſlender ſtalk. *Apocynum fruticoſum ſcandens, Sl. Cat.* 89.

The roots of theſe two ſorts were formerly remitted to Europe for the true ipecacuanha; but they are attended with bad effects on the bowels, adminiſtered too liberally. The roots are of a dark brown colour, or rather yellowiſh caſt; the fiſſures, wrinkles, or corrugations, few; the back ſmooth.

The roots of the true ipecacuanha are brought from Peru and Brafil. The Peruvian have an afh-coloured or light brown bark; many circular rings, wrinkles, or corrugations, furrounding a ftring or nerve in the middle, and feveral fiffures or cracks on the outward bark, reaching quite to the nerve. The mealy parts of the bark and nerve are whitifh. They are brittle, refinous, and have but little fmell.

The Brafilian are of a brownifh colour, crooked and rough, having rings like the former, but more rugged. The infide white, and of a bitterifh tafte.

Sir H. Sloane fufpects the firft of the fpurious plants abovementioned to have bad qualities, but condemns the root and juices of the fecond or *leffer Afclepias*, as abfolutely poifonous.

Although this may ferve by way of caution againft a carelefs ufe of them, yet they probably contain very exalted virtues: as among mankind we often meet with fhining qualities and great abilities, joined to great vices; fo in the vegetable kingdom, we find the moft exalted medicinal principles lodged in plants which are vulgarly thought to be poifonous; fmall dofes well prepared from them, poffeffing in abftract the moft falutary powers in combating with many diftempers; on this account fome of thefe plants, when their nature has come to be fully developed and well underftood, have ranked amongft the nobleft of the *Materia Medica*; becaufe they contain more efficacy within a fmall compafs, than a multifarious compofition, made out of many fimples efteemed more innocent.

Thofe plants therefore ufually fuppofed poifonous, or violent in the operation of their juices or parts, are proper fubjects for a further critical examination and analyfis.

The wild or fpurious ipecacuanha, firft mentioned, has been medicinally given in this ifland ever fince it became known.

The juice of the plant, made into fyrup with fugar, has been obferved to kill and bring away worms in a very effectual manner, even when moft other vermifuges have failed; it is given to children from a tea to a table fpoonful. The juice and pounded plant are applied to ftop the blood in frefh wounds, and it is faid to be

a very powerful aſtringent in ſuch caſes. The root dried, and reduced to powder, is frequently uſed among the Negroes as a vomit. The doſe from one to two ſcruples. To weaken the operation of the root, it may be gently infuſed in warm water, which poured off is mildly purgative; and the root, being afterwards dried and pulverized, will form a more ſuitable and lenient cathartic for infirm or delicate habits.

186. Bastard-Cabbage. — *Spigelia Fœminea.*

This grows to a conſiderable ſize. It is reckoned among the beſt timber-trees in the iſland; for which purpoſe, it is frequently cut down in all parts of the country. The bark of the female tree is eſteemed a very powerful *anthelmintic*, or deſtroyer of worms, and adminiſtered either in the powder or decoction; but the latter method is preferred, in general, among the white inhabitants, and is thus prepared:

Take four ounces of the bark, bruiſe it well in a mortar, and put it in a proper veſſel, with two quarts of water, which muſt be reduced by boiling to one quart; then take it off, and let it ſtand till it is cool. Strain and bottle it for uſe. It will keep only three or four days. The doſe is, two table-ſpoonfuls to children of about two years old, given on an empty ſtomach, either three mornings ſucceſſively, or three alternate mornings, according to the child's ſtrength; and proportionally for younger, or the more advanced, only not exceeding three ſuch ſpoonfuls for children under ſeven years of age.

With a due attention to the age and habit of the patient, this medicine may be very ſafely adminiſtered, and will be found to anſwer the intention moſt effectually. The female tree is not generally known to the Negroes; but there are ſeveral among them who are well acquainted with it, and make a profitable buſineſs of gathering and ſelling the bark, which might be added to the articles of export, and probably find its way into the practice of the faculty in Great-Britain, upon their having trial of its virtues.

187. Bitter-Wood. — *Xylopicron.*

This tree grows in the mountains to a conſiderable ſize, and riſing to the height of fifty or ſixty feet. The wood, bark, and berries, have

have an agreeably bitter taſte, not unlike that of the orange-ſeed, and would probably be found excellent medicines, if they were brought into uſe. The wild pigeons feed on the berries, and owe all that delicate, ſlightly-bitteriſh flavour, ſo peculiar to them in the ſeaſon, wholly to this part of their food. Freſh gathered, they are agreeable to the palate, and ſit well on the ſtomach. The bark is alſo richly impregnated with the ſame juice as well as the wood; and both yield a very pleaſant bitter in the mouth, while freſh.

The facility, with which this quality is communicated, is very ſurprizing. An handful of the ſhavings, but juſt immerſed in water, and inſtantly taken out again, will render it of a very bitter taſte. A trough happening to be made of the wood, for watering hogs, it was obſerved thoſe animals refuſed to drink at it.

This effect was firſt diſcovered in Jamaica by a ſingular accident. A planter, ignorant of the property of the wood, but imagining it to be very convenient for his purpoſe, cauſed a number of hogſhead-ſtaves to be made from one, and remitted his ſugars to England packed in the caſks. Some time afterwards, he received advice from his correſpondent, that his ſugars were ſo intolerably bitter, no perſon would buy them. At firſt, he thought this piece of intelligence a meer banter; but, upon further confirmation of the fact, he applied himſelf to diſcover the cauſe, and upon diligent enquiry found it out.

Bedſteads and preſſes, made of this wood, are proof againſt the invaſion of cockroaches, and all other inſects; none of whom will venture near it. The *effluvia*, emitted from it, are extremely volatile. Carpenters and others, who are employed to work the wood, perceive a bitteriſh taſte in their mouths and throats. I have been very ſenſible of the ſame effect only from ſitting a little while in a room that was floored with it. The decoction is ſaid to be of ſervice in colics, and to create appetite. The leaves of this tree reſemble thoſe of the Engliſh aſh. Browne claſſes it among the *polyandria*.

188. Quassi. — *Quaſſia arbor. An Citharexylon ſpecies?*

The quaſſi, quaſhee, or Surinam bitter-wood, was firſt noticed at Demarara, the Dutch ſettlement on the South-American continent;

tinent; but, after its virtues came to be publiſhed, it was likewiſe diſcovered to be indigenous to the iſland of St. Chriſtopher, and ſome of the other Caribbees. It is deſcribed as about the ſize of an apple-tree, of the pentandria monogynia claſs. The ſtyle grows out of the *apex* of two diſtinct *germina*; the berries are bilocular; the plant itſelf in every part firm; the root and leaves are of a very bitter taſte, without *aroma*; the bark by much the bitterest part; if any thing, the leaves are of a ſlightly-aromatic taſte. It grows in the mountains, and near the ſides of rivulets. It is vulgarly called, by the Negroes, the *bitter aſh*, and is uſed by them to promote abortion. But it is likewiſe proved, ſince the white inhabitants brought it into uſe, to be a great ſpecific in dropſical caſes. The wood is extremely light, yet firm; of a pale-yellowiſh caſt, without ſmell, and of a bitter ſharp taſte. It is more bitter than the Jeſuits Bark, and does not ſeem more diſagreeable: it is ſomewhat leſs aſtringent in operation; and preferred to it by Tiſſot, for the intention of ſtrengthening a weak ſtomach, recovering the digeſtion, diſſipating flatulencies, and relieving coſtiveneſs proceeding from debility; ſtill better in all febrile, gangrenous, purulent, worm, and convulſive caſes.

The following is the method of adminiſtering it in practice at the Windward Iſlands. Boil four ounces of the bark in two quarts of water until reduced to one; rack it off; then add a gill of beſt Coniac brandy, which will preſerve it from turning ſour; and bottle for uſe. A wine-glaſs is the doſe for a grown perſon, to be taken twice a day for ſwellings, and dropſical caſes. When it is applied in fevers, the wood is pulverized, and the powder given from eighteen to twenty grains, as frequently as the Jeſuits Bark is uſually exhibited for the like intention; or a decoction is made of the wood, and given in as large a quantity as the patient can bear. It is ſo inoffenſive and mild in its nature, that no extraordinary reſtrictions are neceſſary in regard to diet.

It is uncertain as yet, whether or not we have the ſame tree in this iſland; but the *citharexylon*, or *old woman's bitter*, ſeems to have a very near affinity to it in ſeveral circumſtances. Firſt, as to the claſs, the old woman's bitter may not with much impropriety be ranked among the *pentandria monogynia*. It has one ſtyle, four

four perfect *ſtamina*, and one imperfect. The root, wood, and leaves, are very bitter; but the root has chiefly been adminiſtered here in decoction, to promote the *lochiæ*, and bring away the after-birth, for which it is thought to be exceedingly powerful, and conſequently may alſo occaſion abortion, and may have been uſed for this inhuman purpoſe by many of the female Negroes. The decoction is of a fine, reddiſh colour, like new Madeira, or rather Azores wine. It grows in the South-ſide hills and mountains, and riſes to the height of fourteen or fifteen feet; in ſome places perhaps more. The bloſſoms of this tree require a more attentive examination, and fuller deſcription of their parts, as well as of the fruit, in order to determine their affinity with a greater degree of preciſion. There ſeems, at preſent, ſome ground for believing that the qualities of both are very near alike. However this may be, it is certain the Caribean tree might eaſily be propagated here; and it is therefore to be wiſhed, that ſome gentleman of the iſland would procure and plant ſeeds, or ſlips, in order to eſtabliſh a nurſery, from which the inhabitants in general may, in courſe of a few years, obtain a ſupply, and cultivate it extenſively, as its properties ſeem incomparably better adapted than moſt other vegetable remedies, hitherto diſcovered in the Weſt-Indies, for the cure of dropſies, and putrid, nervous fevers, which may juſtly be called the endemial maladies of the climate.

189. Old Man's Beard. — *Renealmia fili-formis, paraſitica.*

This ſlender plant is found upon the trees in many parts of the iſland, particularly on the ebonies in the lowland ſavannahs. The fibres, when ſtripped of the outward membrane, or bark, ſo much reſemble black horſe-hair, that the difference can ſcarcely be perceived without a cloſe inſpection. It is uſed, like horſe-hair, by ſadlers and coach-makers, to ſtuff their pannels, cuſhions, &c. It is ſunk in water till the outward membrane rots; then taken up, boiled, and waſhed until the fibres are perfectly cleared; and, when dry, it is fit for uſe.

In ſome parts of North-America it grows far more luxuriant, and furniſhes an article of exportation.

190. Soap-

190. SOAP-TREE, or SOAP-BERRY. — *Sapindus.*

This tree is common in the South-ſide hills. It very much reſembles the common Engliſh aſh in ſize, colour of the bark, and ſhape of the leaf; but much differing in fruit, which is a black, round berry, contained in a ſkin appearing like a piece of dried bladder, and very tough. It does not adhere to the berry, but is ſeparated by a ſmall interval. Theſe ſkins, ſoaked in water, and rubbed with the hands, form a lather, and ſcour any ſubſtance like ſoap. They are frequently uſed inſtead of it; and a few of them will cleanſe more than ſixty times their weight of common ſoap. But they are obſerved to corrode and hurt linen; and therefore, unleſs they could be blended with a ſuitable corrective, they are not ſo proper for this uſe as the curatoe juice. It is ſaid, that the aſhes of this tree will ſpoil a great quantity of pot-aſh, and make it unfit for uſe. This, if true, is a very extraordinary circumſtance, and difficult to be accounted for. The ſeeds of the fruit are round, black, and have a fine poliſh. They are frequently converted into buttons and beads by the Spaniards; and formerly ſerved the like purpoſes in England. The ſeed-capſules, leaves, and bark, pounded and ſteeped in ponds, or the deep holes of rivers, are obſerved to intoxicate and kill the fiſh. The medicinal virtues, if the tree or its parts poſſeſs any, are not as yet diſcovered.

191. SURINAM POISON. — *Cytiſus minor villoſus.*

This plant was introduced from the South-American continent, and is cultivated here for the ſake of its qualities. The leaves and branches, being pounded and thrown into a pond, or into a river (where the current is very gentle), are ſtirred about, and take almoſt immediate effect. All the fiſh are preſently intoxicated, and riſe to the ſurface; where they float with the belly upwards, as if they were dead, and are eaſily taken. The larger ones ſoon recover from their trance; but great part of the ſmaller fry periſh on theſe occaſions. It ſeems therefore to be a very pernicious mode of fiſhery; and, indeed, is not much practiſed, except in the holes of the mountain rivers, which abound with excellent mullets, but are ſo deep, that the fiſh cannot well be caught by any other means.

192. DOG-

192. Dogwood. — *Icthyomethia.*

This tree is common in the iſland, particularly the lowlands, where it riſes to the height of about thirty feet, or upwards. It is one of the beſt and moſt durable timbers in America, and laſts almoſt equally well in or out of water. It is reckoned not inferior to the Engliſh oak, and reſembles it much in the ſhape of the leaf. It flowers about May or June, and throws out all its bloſſoms before the leaſt appearance of any foliage. The flowers, which grow in bunches, cover all the branches in ſuch a manner, as to make a very beautiful ſhow. The wood is of a lightiſh-brown colour, coarſe, croſs-grained, heavy, firm, and reſinous; and makes excellent piles for wharfs. This tree may be propagated from ſlips, or cuttings; and the ſtakes ſoon form a good live-fence. The bark of the root, pounded, is uſed for the ſame purpoſe, and with the ſame effect, as the Surinam poiſon. It has a very ſtrong, rank ſmell. The bark of the trunk is very reſtringent: a decoction made with it ſtops the immoderate diſcharge of ulcers, eſpecially when it is combined with the mangrove bark; cures the mange in dogs; and would probably anſwer well with the other reſtringent barks for tanning leather.

The mountain dog-wood tree differs but very little. It grows to a more conſiderable ſize, inſomuch that it may be had, of almoſt any dimenſions, for plantation uſe. Its timber is of a rather darker complexion, but eſteemed not inferior in durability.

193. Yellow Nickar. — *Guilandia inermis, ſeminibus flaveſcentibus.*
194. Grey Nickar. — *Guilandia ſpinoſa, ſeminibus cinereis.*

The ſeeds, bark, and roots of both theſe ſpecies, which are extremely common near the coaſt, are thought to be aſtringent, and are ſometimes adminiſtered in gleets. The Indians and Negroes chiefly apply them to this intention; affirming, that they purge off the diſorder, and likewiſe reſtore and ſtrengthen the parts.

Theſe plants are common alſo to the Eaſtern regions; and the ſeeds are ſaid to be made uſe of by the women in Egypt and Alexandria, by way of amulet, ſtrung in necklaces, and hung about their children, to guard them from ſorcery.

The grey nickar makes a good fence.

195. Canker-

195. CANKER-BERRY. — *Solanum erectum, bacciferum, caule tereti aculeatissimo.*

The berries of this plant are bitterish, and esteemed very serviceable in sore throats.

196. BASTARD LIGNUM-VITÆ. — *Polygala.* 3. Browne, p. 287.

There are several species of the *polygala*; but I take this, which was examined by Mr. Robinson, to be the bastard *lignum-vitæ*, found in the Red Hills, near Spanish Town, whose seeds are impregnated with a fine aromatic oil, endued probably with great medicinal virtues: but it requires a further investigation. If it is what is here supposed, the wood resembles the gum-guiac in taste, and is applied to the same purposes.

197. COWITCH, or COWHAGE. — *Strizolobium.*

Sir Hans Sloane tribes this species among the *phaseoli.* Browne mentions three species; the third of which is the *tragia*, with hairy leaves, causing a violent itching when handled. The two first are well known, both in Great-Britain and America, for the like effect produced by the villous coat on their beans or pods. A syrup, prepared with this hairy covering, is very effectual in destroying worms; and a vinous infusion of the pods (twelve in a quart) is affirmed to be a powerful remedy in dropsies. The roots of all the species are an excellent aperient and diuretic; and, boiled in oil, they are said to give relief (externally applied) in gouty inflammations, and the St. Anthony's fire. In worm-cases, the cowitch is sometimes administered with melasses, and the clarified juice of worm-grass.

198. BULL-HOOF, or DUTCHMAN'S LAUDANUM. — *Passiflora, foliis tenuioribus, trinerviis, bicornibus, lunatis, seu anteriori obtuso.*

The syrup and decoction of this plant are used instead of, and found to answer all the purposes for which, syrup of poppies and liquid laudanum are usually administered. The flowers are applied to the same intention, infused in, or pounded and mixed immediately with, wine or spirits; and this composition is esteemed an effectual, easy narcotic.

199. Rose-Wood. — *Rodium.*

The rose-wood is found in St. Ann's, and most hilly parts on the South-coast, grows to a considerable size, and is considered as one of the most valuable timber-trees in the island. The wood is white, of a curled grain when young, but grows of a dirty, clouded ash-colour with age, bears a fine polish, and has a most agreeable smell. The younger trees are frequently cut down for fire-wood. They are full of resin, burn very freely, and with a delightful fragrancy. The wood is heavy, and much valued by the cabinet-makers. The berries are of an oblong form, and have much of the taste of balsam-copaiba. I shall beg to refer to what has been said of the amyris; and to recommend these trees to further experiment. The Negroes, in those parts where they abound, may give satisfactory information of the tree, known to them by the name of *oil-tree*, as well as the season of the year, and manner of extracting the balsam.

200. Prickly Brabila, with smooth, oval leaves. — *Brabila fruticosa, spinosa; foliis ovatis, &c.* Browne, p. 370.

This shrub was found near Port Antonio, in Portland. The fruit has all the flavour, and much of the appearance, of the European plum. It is roundish, succulent, unilocular, of the size of a walnut, but the kernel larger, and covered with a ligneous, shining nut-shell, perfectly smooth; the pulp and skin of the fruit, of a pale-red colour; the leaves and foot-stalks, all of a pale green. The plant rises to the height of nine feet, or upwards.

PLUM-TREES.

The plums, commonly so called in this island, are very inferior in goodness to those of Europe: most of them consist only of the seed and skin, with very little pulp or juice between. I shall mention the most noted.

201. Spanish Plum. — *Spondias, vel myrobalanus minor, fructu luteo.*

This is one of the most esteemed, and is tolerably pleasant.

202. Top.

202. Top-knot Plum. — *Myrobalanus minor, fructu purpureo.*

203. Maiden Plum. — *Comscladia.*

The fruit is eatable, though not inviting. The wood is hard, of a fine grain, and reddish colour, but adapted only to the smaller pieces of workmanship, being only three or four inches diameter. The fruit is about the size of the black-cherry; it turns black when it is ripe, and has a sweetish and not unpleasant taste.

204. Damson Plum. — *Chrysophyllum, fructu minori glabro.*

The fruit is full of milk, and retains it even in its most perfect state; but although it is rough and astringent before the fruit ripens, yet, when it comes to full maturity, it is sweet, gelatinous, with an agreeable clamminess, and is very much esteemed. The juice of the fruit (a little before it is perfectly ripe), being mixed with a small quantity of orange-juice, binds the body in a very extraordinary manner, and doubtless would make a powerful remedy on many occasions. But Browne doubts, whether, if it was inspissated by fire, the native austerity of it might not be greatly diminished.

205. Cocco Plum. — *Chrysobalanus frutcosus.*

This is very common in Portland and Carpenter's Mountains, and seems to thrive best in a cool, moist soil. It grows to the height of six or seven feet, and bears a fruit not unlike the English plum in size and shape. Of these some are red, some white, and others black, without any essential difference in the shrubs of either sort. The fruit is perfectly insipid, but contains a large nut, inclosing a kernel of very delicious flavour, which makes up abundantly for the insipidity of the pulp. The fruit of the several complexions mentioned have been preserved with sugar, and sent by way of present to Europe; but the red and black kinds are generally preferred.

206. Yellow, or Jamaica Plum. — *Spondias, foliis pinnatis, ovatis, cortice rubenti.*

207. Hog-Plum. — *Spondias, foliis paucioribus, nitidis.*

It is not easy to determine, whether these two trees are variations only, or different species, they so nearly resemble each other. They rise

rise to a very considerable height, whether they are planted in the lowlands or mountains.

They produce a large, yellow fruit, of a rankish smell, but very pleasant, tart taste. Hogs and sheep devour very greedily all that fall ripe upon the ground. Dr. Barham mentions, that, after a violent fever, an inflammation and swelling fell upon both his legs, attended with a pitting, as in the dropsy. A Negroe undertook to cure him, when several of his own applications had failed; and immediately brought him the bark of the first-mentioned species, with some of the leaves; with which he made a bath; they imparted a strong tincture to the hot water, giving it the colour of claret. The doctor kept his legs immerged in it as long as he was able, covering them with a blanket; had them rubbed very well afterwards with warm napkins, and carefully wrapped up; and, by repeating the operation five or six times, he became perfectly recovered, and found his legs restored to their full strength and use.

208. Prickly Yellow Wood. — *Zanthoxylum, caudice spinosâ, ligno subcroceo.*

This is common in most parts of the island. It has a leaf like the English ash. The outside bark is brownish, set full of protuberances, about an inch or two inches in length, and as thick as a man's finger, at the extremity of which is a short, sharp prickle. The wood is extremely yellow, and reckoned a good timber.

209. Prickly White Wood. — *Zantoxylon, caudice spinosâ, ligno albido.*

This grows like the other, only the inner wood is very white. The flowers are small, and succeeded by bunches of triangular, black seeds, which are hotter than Guiney pepper. The Negroes take them as a remedy for the colic; and a decoction of the root, for gonorrhœas.

210. Yellow Hercules. — *Zantoxylon, arbor aculeata, sive Hercules.*

This species Browne confounds with the first-mentioned; but it is much thicker set with pointed protuberances, and they are of much

much greater length. The name given to it was founded on the resemblance it was supposed to bear to the club of Hercules. The wood is very yellow. The blossoms have some similitude to those of the *cassia fistula*; after them follows the pod, in shape and bigness like a man's thumb. It is first green, then red, and when ripe turns quite black, containing three or four flat or compressed seeds. The fresh root, finely scraped, and applied by way of a poultice, will cleanse the foulest ulcers, and heal them. The bark is somewhat aromatic. The wood of this, as well as the first-mentioned, are thought by many to be very proper for dying; but no experiment (as I am informed) has as yet been made with them, to determine how far they are valuable in this respect. They are generally considered here as timber-trees, and used as such in buildings.

211. SHRUBBY GOAT-RUE, with round, ash-coloured leaves. — *Galega fruticosa, non spinosa, fraxini folio rotundiore.*

This plant grows chiefly in the lowlands, near the sea. It is supposed, that the leaves would produce a dye not inferior to indigo; and, if this should be demonstrated by experiment, it seems preferable for cultivation in many parts of the lowlands, as it may be raised, with little trouble, in dry and poor soils, where the indigo plant cannot be brought to thrive.

It rises to the height of six or seven feet, the trunk of a dark ash colour, and bears many long, cylindrical pods, full of several oblong, oval seeds, by which it might easily be propagated.

212. FUSTICK. — *Morus, foliis oblongis acutis, ligno citrino.*

This is one of the most valuable trees in the island, whether we consider its use in dying, or the excellence of its timber; the latter quality, indeed, has proved fatal to so many of them, that, unless care is taken to propagate from the seed, it is likely to become very scarce. The fruit, in size, colour, and shape, resembles the white mulberry; it is in perfection in March and April. It is subastringent, cooling, and makes an excellent gargle for sore mouths and throats. The ashes of the wood yield a salt, which, given to the quantity of ten grains, with mithridate, for three or four

four ſucceſſive days, is highly recommended by ſome authors for the gout and rheumatiſm.

It is painful to reflect on the vaſt number of theſe, and other valuable woods in the iſland, which have been annually cut down, for burning, and other trifling purpoſes; for which many other trees, of leſs worth, would have been equally fit. This devaſtation is ſo inconſiderately made, and ſo extenſive, that the whole claſs might, by this time, have been exterminated from Jamaica, if the birds and other animals had not repleniſhed it, in the leſs frequented parts, with young plants.

Thus much may be ſaid for the ſettlers; that, upon opening land for a plantation, it is neceſſary to clear the whole wood away; which is not the caſe in forming paſture grounds; but when the conſideration happens, which trees ſhall be cut down, and which ſpared, ſuch a crowd is found, of what are valuable and uſeful for ſome or other important purpoſe, that the choice is difficult. Yet, as moſt eſtates are poſſeſſed of waſte land, what deſerves to be recommended is, the planting nurſeries of the moſt uſeful trees on ſuch lands; which if any number of perſons were to do, the ſeveral ſpecies would ſoon be propagated by birds, and other means, in moſt parts of the iſland, where, at preſent, they are ſcarce, or not to be met with; and, at a ſmall expence, a ſure foundation laid of great future profit.

213. Turkey Blossom. — *Tribulus foliis ſex jugatis, ſubæqualibus, flore amplo odorato.*

This plant is common about Kingſton, and ſome other parts; it is a ſpreading creeper, and grows luxuriantly. It is cultivated in gardens for the ſake of its flowers, which have an agreeable odour. The fowls, particularly turkies, are fond of the bloſſoms, which are thought to heighten the flavour, as well as contribute to the fattening of them.

214. Bastard Cedar. — *Theobroma foliis ſerratis, fructu minori ſcabro.*

This tree is peculiar to the low-lands, where it adorns the paſtures, forms a neceſſary ſhade for cattle, and in dry ſeaſons ſupplies them with food, from its leaves and ſmaller twigs. On this account, ſome have made regular plantations of it; and the birds or rats take care to propagate

gate it in all the ſurrounding hedges. The leaves reſemble the Engliſh hazel; the fruit ſeems to be of the mulberry kind; it is green at firſt, but turns black and hard in its ripe ſtate. A little before it ripens, it has a pleaſant, ſweet taſte, and is frequently eaten by the Negroes, either raw or boiled, as a green in their broths. It is agreeable to cattle, ſheep, hogs, and goats, who are ſaid to fatten upon it. The flowers are yellowiſh, and very odoriferous, having much the fragrancy of the Engliſh hawthorn bloſſom. The wood is light, and ſo eaſily wrought, that it is generally uſed here by coach and chaiſe-makers, for their ſide pieces.

215. Job's-Tears. — *Coix ſeminibus ovatis.*

This plant grows wild every where in the woods, and is excellent fodder for cattle. It has all the appearance of a reed, and riſes to the height of four feet, or upwards. If it is the ſame as that of the Archipelago, and which is cultivated alſo in Spain and Portugal, the grain or ſeeds may be ground to flour, and made into a coarſe, but nouriſhing, kind of bread; to which uſe it is applied by poor people in thoſe countries, when a ſcarcity happens of other grain. Sloane calls it the *larger pannic graſs*, claſſing it with the Negroe Guiney corn, and Guiney wheat. The other ſpecies of the coix has angular ſeeds, but equally applicable to the ſame uſes in œconomy. The ſeeds are ſtrung in necklaces for infants, in order to help dentition, but of their efficacy for this purpoſe I can ſay nothing.

216. Broad-leafed Broom-Weed. — *Sida humilior, foliis ovatis ſerratis alternis.*

This is very common in all parts of the iſland, and grows in the very pooreſt ſoil. It is tough, and, being generally at hand, ſerves for brooms. It ſeems to be ſomewhat of the malvaceous kind, the leaves and tender buds containing a large quantity of mucilage; and lathering with water, like ſoap. For this quality, it is ſometimes uſed in ſhaving waſhes, by ſuch perſons as cannot conveniently bear the ſmell and acrimony of ſoap. The larger tap-roots ſerve for tooth-bruſhes, for cleanſing the teeth and gums.

The Negroe women, when their children are ſcabby, often make a bath with the leaves, to cleanſe their ſkins, and make them thrive. It has

has unqueſtionably other medicinal uſes, which, in the multiplicity of healing plants, with which the iſland every where abounds, are diſregarded. It bears a yellow flower, which opens every day about an hour before the ſun comes to the meridian; ſo that this, and the *mirabilis*, or four o'clock flower, are a ſort of vegetable ſun-dials, correſponding (where the days are ſo nearly of equal length throughout the year) with tolerable exactneſs to determine hours or ſtations of the ſun, in the fore and afternoon.

217. Alligator Apple, or Cork-Wood. — *Annona uliginoſa aquatica.*

It grows in great abundance about the Southſide lagoons, and on the banks of ſeveral rivers. The fruit or apples are large, and of a cold watery quality, eſteemed highly narcotic, and even poiſonous; but of the latter, we have no certain proof: when they are ripe, and drop into the water, the alligators watch their falling, and at the proper ſeaſon of the year, are ſaid to ſubſiſt chiefly upon them. They have a ſweetiſh taſte, but, perhaps, the crudity and coldneſs of their juice might make them a ſort of poiſon to the ſtomach in this climate, where even melons and cucumbers, not duly corrected, will ſometimes convulſe it. The wood of this tree is ſo extremely light, that it is commonly uſed by way of cork, to ſtop jugs, bottles, and caſks; and it makes excellent floats for fiſhing nets.

218. Great Reed Mace. — *Typha foliis ſub-enſi-formibus.*

This plant abounds in the lagoons, ſwamps, and rivers, on the South ſide. The leaves dried make good mats, and a convenient thatch, which will laſt ſeveral years.

219. Morass, or Morass Weed. — *Ceratophyllum.*

This is very common in all the brackiſh rivers, and other waters; and is generally uſed for covering fiſh, or aquatic plants, ſuch as water-creſs, and the like, that are ſent ſome diſtance inland; for it retains a great deal of moiſture, which keeps them freſh and cool for a conſiderable time. Where it can conveniently be obtained, it is very proper to be laid round the tender ſeeds of the cacao, for a few days after they are planted, or about the young plants; it might likewiſe be found a

uſeful

uſeful wrapper for jars or pots of *freſh butter*, ſent to any place remote from that where it is manufactured; as from Pedro's Cockpits to Spaniſh Town or Kingſton.

220. TURTLE GRASS. — *Alga foliis anguſtis fere linearibus.*

This plant grows in moſt of the ſandy ſhallow bays round the iſland, and is the favourite food of the manatee and turtle.

221. LARGER TURTLE GRASS, with FLESHY ROOTS. — *Alga foliis planis anguſtis, radice albâ geniculatâ.*

Is found in the ſame places, and ſerves the ſame purpoſes as the foregoing.

222. PURGING SEA BIND-WEED, or SCAMMONY. — *Convolvulus maritimus, foliis nitidis, ſubrotundis emarginatis, &c.* Br. p. 153.

223. CHRISTMAS GAMBOL. — *Convolvulus Polianthos glaber undique repens.* Br. p. 153.

The firſt ſpecies grows generally near the ſea, and is very common in many parts of the iſland; it creeps a conſiderable way, and throws out ſome ſhort foliated branches from ſpace to ſpace as it runs; the leaves are beautifully veined. The root is a ſtrong purgative, and ſometimes ſucceſsfully uſed in dropſical caſes. The whole plant is full of a milky juice.

The ſecond is common about Spaniſh Town, ſpreads very thick about all the buſhes near it; blooms about Chriſtmas, and bears a great number of white fragrant flowers. All the parts of the plant are ſmooth.

The milky juice of both theſe plants, boiled to a conſiſtence, makes a *ſcammony*, proper for the ſhops. The beſt ſort is light, greyiſh, tender, and brittle, of a bitter taſte, but ſlightly pungent, and faint unpleaſant ſmell.

224. BROOM WEED. — *Coreta foliis minoribus ovatis.*

This plant is extremely common. It grows in dry ſandy places, ſeldom riſing above two feet and an half from the root, and is converted by the Negroes into beeſoms.

225. MOUNTAIN BROOM. — *Chryſocoma arborea ramoſiſſima ramulis teretibus, &c.* Br. p. 316.

This is found only in the coldeſt parts of the mountains. It reſembles the European broom, and is applicable to the ſame uſes.

226. EBONY. — *Brya arboreſcens, erecta ſpinoſa.*

There are two ſorts, the black and the white; they grow everywhere in the Southſide ſavannahs. They bear a flower, reſembling that of the Engliſh broom; ſeldom riſe above 18 feet, and in the largeſt part of the ſtem do not exceed 5 inches diameter. It is a fine timber wood, has a ſmooth even grain, which takes a good poliſh, and is very proper for bed-poſts, and a variety of turnery ware; for theſe purpoſes the black is generally preferred, whoſe heart is the complexion of jet. There is likewiſe a baſtard ebony, called mountain ebony, which is of a dark brown. An oil diſtilled from their wood is ſaid to cure the tooth-ache, applied with cotton. The ſmaller twigs of each ſpecies are in common uſe for making brooms, and rods for the correction of delinquent ſlaves.

227. BASKET WITHE. — *Tournefortia reclinata, diffuſa, et hirſuta, foliis ovatis, &c.* Br. p. 169.

This plant, which ſeems to have ſome affinity with the turnſole, grows very luxuriantly, and ſtretches ſometimes many feet from the main root. It is commonly uſed in the country parts for making dung-baſkets.

228. SUPPLE JACK. — *Paulinia ſarmentoſa, &c.* Br. p. 212.

This plant is very common in the woods. It has a ſlender, ligneous ſtalk, and generally riſes to a conſiderable height, with the help of the neighbouring buſhes. For its toughneſs and flexibility, it is uſually cut into junks, barked and uſed for riding ſwitches, and the larger pieces for walking-ſticks; and many are annually remitted to Great Britain. After being kept ſome time, they become very brittle, and apt to ſplit, unleſs rubbed now and then with oil. The juice of the leaves is a great vulnerary; and the fruit, or pea, intoxicates fiſh.

There is another ſpecies in the Leeward, or Weſtern parts of the iſland. The junks are commonly known there by the name of *cudjoes*;

 they

they are perfectly ſtraight, ſmooth, and without knots, on which account they might anſwer better for a remittance.

229. BARBADOES CEDAR. — *Cedrela foliis majoribus pinnatis, ligno levi odorato.*

This is extremely common among the interior mountainous parts, and grows to a prodigious ſize, being frequently found of 3 to 5 feet diameter at the baſe, and proportionably lofty. The timber is full of a reſinous ſubſtance; it is light, eaſily worked, and gives a fragrant ſmell; for which reaſons, it has always been in eſteem for wainſcotting, and a variety of cabinet ware. The ſhingles made from it are extremely durable, and therefore reckoned the cheapeſt covering of the kind. It is not ſo well adapted for caſks, eſpecially for thoſe intended to contain ſpirituous liquors, which readily diſſolve and become impregnated with the reſin, ſo as to acquire a ſtrong bitter taſte. It is the beſt wood known for canoes and petiaguas, as well as for wherries, and all other veſſels, uſed for plying round the iſland, or in theſe ſeas, as the worm will not invade it, ſo long as the reſin continues. The gum, which may be eaſily extracted from the tree, is tranſparent, diſſolves in water, and very proper for the ſhoemaker's uſe.

230. BERMUDAS CEDAR. — *Juniperus foliolis inferioribus ternis, &c.* Br. p. 362.

This is likewiſe a native of the iſland and grows in moſt of the higher parts of the Blue Mountains. It is juſtly admired for its cloſe, even grain, and agreeable ſmell, and in common uſe for cabinet ware, pencils, and other conveniencies. The gum, or reſin, has an antiputrefactive quality, and may be uſed to preſerve other ſubſtances from the eroſion of worms and inſects.

231. BASTARD MAMMEE, or SANTA MARIA. — *Mali perſicæ Mammeæ dictæ, ſpec. folio longiore arbor maxima, &c.* Sl. Cat. 180.

This is one of the talleſt timber trees in the iſland, many of them exceeding 80 feet. The bark is aſh-coloured, and furrowed.

As they riſe ſtraight and tapering, they have formerly been uſed for ſhips maſts, and thought preferable, for their toughneſs, to the fir or pine. They are likewiſe uſed for the ſweeps and arms of ſugar-mills.

Barham mentions, that a Spaniard prefented him once with a green balfam, of a beautiful colour, and pleafant fmell, which he faid was the fineft remedy in the world for frefh wounds, but could not tell from what tree it was obtained. Some time after, a Negroe brought him fome balfam, exactly the fame in colour and fmell, which he got from the baftard mammee, and the doctor found it to be an excellent medicine; for, upon diffolving, and applying it to a frefh cut, it healed the part with two dreffings. The Spaniards, when it is juft gathered, put it into cafes made of the hollow joints of the trumpet tree, and call it the *admirable balfam*; but it is for fome extraordinary virtues difcovered in it, that they have honoured the tree with a confecration to the Virgin Mary, and chriftened it after her name.

232. MAMMEE. — *Mammea.*

The two fpecies of this tree are good timbers, and much alike; but their fruit differs. It is large, and round, but compreffed, covered with a thick ruffet coat. The pulp of one fpecies red, of the other white. The latter is the moft efteemed, for, when ripe, it is perfectly lufcious, and moft refembles the apricot in flavour, fo much indeed, as fcarcely to be diftinguifhed. The pulp of both forts is firm, before it is perfectly ripe, and would make an exceeding fine fweetmeat or preferve.

It is faid, "that they who plant the ftone or feed of thefe trees, never live long enough to eat of their fruit." The foundation of this notion is, that they are near fifty years in growth from the time of planting, before they begin to bear. The wild hogs feed on the feeds, which are a very fattening diet for them.

233. MOUNTAIN GUAVA. — *Pfidium arboreum maximum, foliis ovatis nitidis, ligno fufco, &c.* Br. 239.

This fine timber tree grows to the height of 60 or 70 feet, and proportionably thick. Its wood is of a dark colour, and curled grain, works eafily, and takes a fine polifh. It makes very beautiful walking-ficks, and is a proper article for exportation to Great Britain, where it would, doubtlefs, be greatly approved of.

234. BRASILETTO.

234. Brasiletto. — *Cæſalpina arborea, inermis.*
Id. Id. *ſpinoſa.*

This grows in great plenty in moſt of the Southern rocky hills near the coaſt. It is thought a very excellent timber, though in general of ſmall diameter. The wood is elaſtic, tough, and durable, takes a fine poliſh, is of a beautiful deep orange colour inclining to red, full of reſin, and yields an excellent tincture by infuſion.

Its uſe among the dyers is well known.

The true *Braſilian* is a large tree, with a reddiſh and thorny bark; the leaves ſmall, obtuſe, of a fine ſhining green; the flowers a little ſweet, of a beautiful red hue; the pods flat and prickly, containing two compreſſed ſeeds, like thoſe of the gourd.

There are two ſpecies in Jamaica, one of which is equal in redneſs to the Braſilian, and containing a red gum, or reſin, of an aſtringent taſte. The wood tough and ſtrong, and uſed by the wheelwrights, who ſay it makes the beſt ſpokes for wheels. A decoction of the wood is thought to be ſtomachic.

A red ink is made with the raſpings in the following manner: infuſe them in vinegar, or ſome ſtrong *lixivium*, and with gum arabic, or caſhew gum, and a little allum, put into a glazed earthen pot, gently ſteep them for a few hours.

It is ſometimes uſed to colour tooth-bruſhes.

235. Pigeon Wood, or Zebra Wood. — *Arbor foliis oblongo ovatis ſpicillis alaribus, &c.* Br. p. 368.

This ſhrubby tree is generally found in the mountains. It riſes to about 18 feet in height, and rarely exceeds 5 inches in the diameter of its trunk. The wood is hard, of a cloſe even grain, bears a good poliſh, and is beautifully ſtriped and clouded. It is often remitted to Great Britain, and uſed among the cabinet-makers chiefly for fineering.

It reſembles, in the colouring of the wood, what is called the bread-nut in St. Ann's; but the latter is a tree of much larger diameter; both are very proper for cabinet-work, and therefore valuable for export. This is not what is commonly called zebra wood, although it well deſerves the name, for the uniformity of its ſtripes.

The ſpecies of zebra wood at preſent in eſteem among the cabinet-makers, is brought to Jamaica from the Moſquito ſhore; it is of a moſt

lovely

lovely tint, and richly veined; but not in lists like the pigeon wood: the latter much better corresponds with the zebra skin in the disposition of its stripes, and the other seems to have the nearer resemblance in its general colouring and ground. Both of them are exceedingly elegant, and would probably give the best effect by a well-fancied intermixture on sineered work.

236. Smooth Acacia, or Cashaw. — *Acacia vel mimosa fruticosa, inermis, diffusa major, flore flavo odoratissimo.*

This tree grows to a large size, and is found in great abundance in the neighbourhood of Passage Fort, and the Bridge River in St. Dorothy. It is luxuriant, and spreading. It is esteemed a good timber wood, and used for building small craft, and wharf piles, on account of its being offensive to the worm, tough, and lasting.

The wood is of a firm grain, beautiful brown colour, very glossy when polished, and though it stinks worse than *assa fœtida* when first cut, it acquires, by keeping, a perfume, or agreeable odour, very similar to that of the rose-wood. It seems to be largely impregnated with a resin, which probably is not without some valuable quality. Both the bark and roots of this tree afford a red dye, at present unattended to.

237. Manchineel. — *Hippomane arboreum lactescens.* Browne, 351.

This tree seems peculiar to the lowlands, and is rarely found at any considerable distance from the sea. The wood makes very handsome furniture, resembling in appearance the English oak, or wainscot; but takes a finer polish. The hewers usually make a fire round the root, and burn some depth into the trunk, before they venture to cut it. The fire is suffered to prey upon it till very little remains to be done by the axe. The sawyers and carpenters, who work it up, generally cover their mouths and nostrils with crape, in order to exclude the finer particles from getting down their throats. Upon enquiry among the Negroes, I could not learn that they suffered any inconvenience from drops of the juice, which were accidentally spurted upon their skin whilst they were employed in felling the trunk, or hacking off the limbs: but they informed me, that, if any chanced to flie into their eye, it would give them a severe

vere pain for ſeveral hours afterwards, occaſioning an inflammation, which was relievable by applying lime-juice to the part.

The ſtories, related of the fruit or apple of this tree, are certainly to be claſſed amongſt vulgar errors. The romantic tales of the early voyagers and travelers into America have been copied by different writers; and the credibility of their relations, thus built upon a ſeries of ſuch frail authorities, has at length been received as authentic and indiſputable. Moſt of theſe hiſtorians affirm, that "the apple is lovely to the eye, pleaſant to the taſte, but "mortal in its effects;" and that "certain ſailors, having taken re-"fuge from ſudden ſhowers of rain under the branches of this tree, "were terribly bliſtered in their ſkins by the drops which trickled "from the leaves."

It is true, that the apple bears ſome ſimilitude, viewed at a ſmall diſtance, to the Engliſh crab-apple; but the crab-apple was never admired for lovelineſs of aſpect. It ſeldom exceeds an inch in diameter, is of a yellowiſh colour when ripe, and has ſcarcely any pulp at all; the fruit conſiſting of the outer ſkin, or rind; a pulp about as thick as a wafer; and then the ſtone, or ſeed, which is perfectly hard and inedible. Its taſte is bitteriſh; and, when it is green, acrimonious, like the huſk of the caſhew-nut; which muſt neceſſarily render it ſo diſguſtful, that no perſon could eat it in this ſtate for pleaſure.

A gentleman of my acquaintance, who was fond of making experiments, to ſatisfy himſelf upon doubtful points, cut the green fruit; and a ſmall quantity of glutinous juice iſſued out at the wound. He taſted this, and likewiſe the bark and leaf of the tree; but could perceive only a ſlight aſtringency on his tongue. He then cut deeper into the bark of the trunk, and taſted ſome of the milky juice that oozed out. He obſerved that it tingled his tongue gently, and rendered his *ſaliva* thin and fluid. He afterwards taſted the fruit nearly ripe, and, chewing the riper part, found it perfectly inſipid. From theſe facts it appears, that, when green, the juice of the fruit is diſagreeable from its acrimony; and, when ripe, for its inſipidity.

Browne ſays, that he has known many perſons who have ignorantly ate of the fruit, which they had miſtaken for crab-apples; that

that they generally vomited in a ſhort time, and continued to complain of a burning heat in the mouth, throat, and ſtomach, for ſeveral hours after. He adds, that he never had known any one to die by eating this fruit, though he had ſeen ſome who had eaten *nine* or *ten* of the apples at a time; and that oily emulſions and mixtures give ſpeedy relief to thoſe who are diſordered with them. Barham, indeed, mentions the caſe of a Negroe man, who ate ſeveral of them, with a wilful and premeditated deſign of deſtroying himſelf; that he complained of great heat and burning in his ſtomach, but could not vomit; that his tongue ſwelled, his eyes were red and ſtaring; and he was inceſſantly calling for water till he expired. Conſidering this Negroe's intention to commit ſelf-murder, as well as the ſymptoms which followed, I think we may conclude, that he choſe the green, and not the ripe fruit for the purpoſe.

The white land-crabs are fond both of the leaves and fruit. But I have known perſons taken extremely ſick at their ſtomachs after eating theſe crabs, and who were not relieved until they had diſgorged, by drinking plentifully of warm water and oil. I remember a Negroe who continued ill for three days, from a meal he had made on theſe crabs, but, without recourſe to medicine, was relieved by natural evacuations downwards, and was perfectly well after them.

Sir Hans Sloane gives us an example of a turner, whoſe eye became extremely inflamed and ſwelled with ſome of the juice, which ſpurted into it as he was felling one of theſe trees. Sir Hans ordered him to be bled, gave him a purge of *extr. rud.* and ordered him to wet his eye very often in cold water, and apply wet brown-paper continually, to cool the part. With theſe applications he was cured in three days.

He likewiſe ſpeaks of a man who ate *four* of the apples, yet was not much hurt.

It is plain from hence, that the trunk and *unripe* fruit contain an acrid juice, which operates like other materials of the like nature, exciting heat, irritation, and thirſt, when ſwallowed and received into the ſtomach, producing ſuch a pungency on the throat, and tender, nervous coats expoſed to its action, as greatly to diſorder the whole

whole frame, and bring on very bad ſymptoms, and ſometimes death; but that the juice, when matured and concocted as we find it in the *ripe* fruit, loſes much of this acrimony, and, though ſtill unpleaſant in its operation upon the bowels, does not produce mortal effects, unleſs perhaps in very weak and delicate habits; but, as to theſe latter, I ſpeak only from conjecture.

That the fruit ſhould ſometimes produce violent irritation, and at other times be chewed, and even ſwallowed, without any diſagreeable conſequence, can only be accounted for by ſuppoſing, that perſons of ſtronger or weaker habits are differently affected by it; and that the juices of the fruit may poſſibly vary much in the different ſtages of its advance to maturation, and until the exact time of its being thoroughly ripe, when, by a perfect fermentation and concoction, their acrimony is almoſt ſubdued. It is not unlikely alſo, that the juices of this tree may be more poignant and cauſtic in the hot months, than during the cooler ſeaſons of the year, becauſe the ſap in thoſe months is more redundant and active.

It is well known, that goats, and even ſheep (Tertre adds, macaws), feed very greedily upon the fallen fruit, when it is in a ſtate of perfect maturity, and doubtleſs reſolve it into wholeſome nouriſhment.

Inſtinct, which determines the choice of theſe animals, points out this as an aliment not baneful (at leaſt to them); for they ſuffer no injury from it. Barham obſerves, that, however venomous the crude juices of the tree may be, they depoſite this quality ſo ſoon as they become concocted; that the milk, which oozes out at the bark, hardens in time, and turns to a fine gum, which he adminiſtered *inwardly* many times, miſtaking it for gum *guiacum*, and not knowing that the Negroes, of whom he bought it, had put a cheat upon him, and ſold him the one for the other. But, after he diſcovered the fraud, and perceived no ill effect reſulting from it, nor any other than what the *guiacum* itſelf uſually produces, he continued to give it, generally diſſolved in rectified ſpirit of wine, making a tincture which the niceſt eye could not diſtinguiſh from tincture of guiac. He inſiſts, that it poſſeſſes all the virtues of the other; and that he had found it, by experience, to be a ſpecific for the

dropsy, carrying off all the watery humours by stool and urine, only taking care, after the water was evacuated by the gum, to give a decoction of contrayerva and steel, to strengthen the lymphatic vessels, &c.

The gum of this tree is mostly of a light-reddish, or yellowish cast; the *guiacum*, most commonly of a deep green, when held up to the light. The tincture of the latter gives a milky appearance, when a few drops are let fall into a glass of water. I believe the one has very often been ignorantly substituted for the other; yet, if Barham's veracity is to be relied on, which I think it is, there is not much room for apprehensions from the consequence. The gum is most plentiful upon these trees in the month of February; and it is to be wished its nature could be more accurately examined and put to the test.

Upon the whole of the facts, which I have either known, or here delivered, I find no sufficient ground for the stories related of this tree; though, I readily confess, these fictions may have their use, as cautionary to straggling sailors, and others, against smarting for the rash indulgence of a liquorish appetite upon every occasion; for they are too prompt to eat of any fruit that falls in their way, without knowing or considering the effects it may produce on their health. In regard to the odour of the ripe fruit, it is faint, and far from being inviting.

237. MAHOGANY. — *Cedrela, foliis pinnatis, floribus sparsis, ligno graviori.*

This graceful and valuable tree, which furnishes a constant share towards the annual exports from the island, grew formerly in very great abundance along the coast; but, having been almost exterminated from those parts in process of time, it is at present found chiefly in the woodland, mountainous recesses, where vast quantities of it still remain, particularly in the uncultivated districts of Clarendon, and the leeward parishes.

It thrives in most soils, but varies in its grain and texture. What grows in rocky ground is of small diameter, but proportionably of closer grain, heavier weight, and more beautifully veined. What is produced in low, rich, and moist lands is larger in dimensions, more

more light and porous, and of a paler complexion. This conſtitutes the difference between the Jamaica wood, and that which is collected from the coaſt of Cuba and the Spaniſh Main; the former is moſtly found on rocky eminencies; the latter is cut in ſwampy ſoils, near the ſea-coaſt. The ſuperior value of the Jamaica wood, for beauty of colouring, firmneſs, and durability, may therefore be eaſily accounted for; but, as a large quantity of balks and plank is brought from the Spaniſh American coaſts to this iſland, to be ſhipped from thence to Great Britain, the dealers are apt to confound all under the name of Jamaica wood, which in ſome meaſure hurts the credit of this ſtaple production. The tree grows tall and ſtrait, riſing often ſixty feet from the ſpur to the limbs; the foliage is a beautiful deep green; and the appearance, made by the whole tree, ſo elegant, that none would be more ornamental for an avenue, or to decorate a plantation. It generally bears a great number of *capſulæ* in the ſeaſon. The flowers are of a reddiſh or ſaffron colour; and the fruit, of an oval form, about the ſize of a turkey's egg. It is eaſily propagated from the ſeeds, and grows rapidly. Some of them have reached to a monſtrous ſize, exceeding one hundred feet in height, and proportionably bulky. One was cut, a few years ſince, in St. Elizabeth's, which meaſured twelve feet in diameter, and cleared to the proprietor above 500*l.* currency. The value of it, either for ſale, for uſe, or beauty, being ſo great, it is amazing that it is not more cultivated on waſte lands, of which every proprietor has ſome within his range. Thoſe particularly, who have families, might by this means apply the worſt part of their tracts to produce a future fortune for their younger children. We may imagine the plenty of it in former times here, when it uſed to be cut up for beams, joiſts, plank, and even ſhingles. But it is now grown ſcarce, within ten or twelve miles from the ſea-coaſt; and muſt every year become ſtill ſcarcer, and conſequently dearer, unleſs nurſeries, or plantations, are formed of it in places where the carriage is more convenient for the market.

In felling theſe trees, the moſt beautiful part is commonly left behind. The Negroe workmen raiſe a ſcaffolding, of four or five

feet elevation above the ground, and hack off the trunk, which they cut up into balks.

The part below, extending to the root, is not only of largeſt diameter, but of a cloſer texture than the other parts, moſt elegantly diverſified with ſhades or clouds, or dotted, like ermine, with black ſpots; it takes the higheſt poliſh, with a ſingular luſtre, ſo firm as even to reflect objects like a mirror. This part is only to be come at by digging below the ſpur to the depth of two or three feet, and cutting it through; which is ſo laborious an operation, that few attempt it, except they are uncommonly curious in their choice of the wood, or to ſerve a particular order.

Yet I apprehend it might be found to anſwer the trouble and expence, if ſent for a trial to the Britiſh market; as it could not fail of being approved of beyond any other wood, or even tortoiſe-ſhell, which it moſt reſembles.

It ſeeds in May.

239. SAND-BOX. — *Hura.*

This tree is cultivated chiefly for ornament, and the fine ſhade it yields. It loves a deep, rich ſoil, and thrives beſt near water. It riſes to the height of about thirty-five or forty feet, and expands its branches to ſuch a diſtance, as ſometimes to caſt a ſhade of ſixty feet diameter. But, by reaſon of the quickneſs of its vegetation, its parts are of ſo looſe a texture, that a loud clap of thunder, or a ſudden guſt of wind, frequently cauſes the largeſt boughs to ſnap aſunder. Nor is its trunk of any uſe, except for fire-wood.

The fruit is flat and round, diſpoſed regularly into cells, each incloſing a flat ſeed. When the ſeeds are taken out, the ſhell, which is very firm, is converted into a box for holding letter-ſand. The ſeeds, roaſted, purge upwards and downwards with great violence: they contain an acrid juice, which ſcalds the mouth and throat, and are therefore very properly rejected from the *materia medica.* The leaves are often applied with great ſucceſs to the head in fevers, to mitigate, or remove, the pain and tenſion in that part.

240. FRENCH

240. FRENCH OAK. — *Bignonia, foliis ovatis, cordatis, ſimplicibus, caule erecto, arborea, &c.*

This beautiful tree is cultivated likewiſe for ornament by the curious. It thrives luxuriantly in the lowlands, as well as in the mountains, and is generally looked upon as a good timber-tree.

241. JERUSALEM THORN. — *Parkenſonia aculeata.*

This is an ornamental, ſhrubby tree, firſt introduced here from the Spaniſh Main, for making incloſures. It ſeldom grows to any conſiderable ſize; but it makes a beautiful appearance with its ſlender ſiliques, and is cultivated in many gardens.

242. RINGWORM-BUSH. — *Caſſia ſiliquis quadrialatis, &c.*

This plant is now very common in moſt parts of the South-ſide. The flowers and juice of the leaves are compounded into an unguent for deſtroying ring-worms.

243. YELLOW THISTLE. — *Argemone ſpinoſum.*

This grows in all the ſandy ſavannah ſoils. The ſeeds are eſteemed an excellent remedy in diarrhœas and bloody fluxes. They work by ſtool and vomit. But the faculty deem them rather too draſtic. The ſtem contains a milky, glutinous juice, which turns in the air to a fine bright yellow colour, and, when reduced to conſiſtence, is not diſtinguiſhable from gamboge. In very ſmall doſes, it is probably of equal virtue given in dropſies, jaundice, and cutaneous eruptions.

Barham relates, that the ſeeds are a much ſtronger narcotic than *opium*, and gives the following hiſtory of their effects. A runaway Negroe, who had been ſome time abſent from his maſter, lived by ſtealing poultry, ſheep, and other ſtock. One night he came to the ſheep-fold, which was guarded only by a feeble old man, and demanded a ſheep. The old man, not being able to oppoſe him by force, had recourſe to ſtratagem, gave him good words, and invited him to ſmoak a pipe; to which the other conſenting, he immediately ſtepped aſide to fill the pipe, taking care to mix a quantity of the ſeeds of this plant among the tobacco; and, before the thief had ſmoaked it half out, he fell into a moſt profound nap,

nap, and was eafily fecured. The fame gentleman mentions, that a fteer, having fuddenly dropped down dead, was opened, and feveral handfuls of this feed found in his ftomach; to which he doubtlefs owed his death. It appears from hence, that, although dangerous in a large quantity when received into the ftomach, yet the feeds might be, on fome occafions, fafely ufed after the manner of tobacco, and produce the fame effects as *opium*, which fome ftomachs cannot bear in the fmalleft dofe.

244. Bayberry, or Wild Clove. — *Caryophyllus.*

This is common to moft of the Weft-India iflands, and grows to a confiderable fize. It fills the woods with the fragrance of its leaves, which nearly refemble thofe of cinnamon; and the berries agree with the Oriental clove very much both in form and flavour.

245. Stinking Eryngo, or Fit-Weed. — *Eryngium Fœtidum.*

All the parts of this plant are reckoned very powerful anti-hyfteericks, and moft ufed by the Negroes and poorer Whites on all occafions of that nature. It is chiefly adminiftered in decoctions, or infufions.

246. Wild Olive. — *Non-defcript.*

The tree commonly known by this name is remarkable for its durability in the earth, or under water. A melaffes ciftern, made with it, after lying fourteen years, being taken up, was found entirely firm and undecayed. The wood is finely grained; and fo hard, as to turn the edge of the workman's tools. I have fet it down as a *non-defcript*, not knowing to what claffs it is referable, nor having feen any more of it than the wood. But I fufpect it is the olive-mangrove, or bontia, of Browne, p. 263.

247. { Spanish Elm, or Prince Wood. } { — *Geraftanthus.* Browne, p. 170. — *Cordia, foliis ovatis, integerrimis.* L. Sp.

This is efteemed one of the beft timber-trees in the ifland. The wood is of a dark-brown colour, and gently ftriped. It is tough and elaftic, and eafily worked. The tree rifes to a confiderable height, but feldom exceeds twenty or thirty inches diameter; efpecially

pecially in the lowlands, where it is moſt common. The flowers are white, grow in great numbers at the extremity of the branches, are very odoriferous, and continue upon the tree till the fruit falls off. The coopers ſometimes make hoops for ſugar hogſheads with the young ones. It is certainly an excellent wood for cabinet-ware. An oil is extracted from it, not inferior to *rodium*, having the ſame ſcent, uſe, and virtues.

248. WATER-OATS, or TARE-GRASS. — *Zizania panniculâ effuſa.* L. Sp. Pl.

This plant is common in all the lagoons. It is alſo found in the ſwampy grounds of North-America; where the Indians eat the grain, inſtead of rice.

249. WATER ARROW-HEAD, or GREAT AMERICAN ARROW-HEAD. — *Sagittaria, foliis maximis, &c.* Browne, p. 345.

This plant is very common about moſt of the ſtagnating waters in the iſland, and particularly thoſe near the Ferry. It is alſo, like the *Zizania*, found in North-America, where the Indians dreſs and eat the roots.

250. CHAW-STICK. — *Rhamnus ſarmentoſus foliis ovatis.* Browne, p. 172.

The bark of this plant is of a pleaſant, bitter taſte, and raiſes a great fermentation in the *ſaliva*, or any rich liquor with which it is agitated. It gives a flavour to the ſmall diluting drinks in common uſe here; and is an excellent dentifrice, whitening and preſerving the teeth better than moſt others, and anſwering the purpoſes as well of a bruſh, as a tooth-powder upon this occaſion. It is likewiſe ſuppoſed a good antiſeptic, from the quantity of fixed air contained in it.

I have now compleated a ſummary of thoſe trees and plants which, I think, appear in general to be the moſt uſeful in reſpect to commerce, and the accommodation of ſettlers, not omitting thoſe medicinal properties for which they have been chiefly diſtinguiſhed. It would be far too great a taſk for me to attempt a compleat *materia medica*, including all the ſanative plants in the iſland. I muſt beg

beg to refer the inquiſitive reader to the bulky collection publiſhed by Sir Hans Sloane, and the ſupplemental labours of the ingenious Dr. Browne, to whoſe work I am largely indebted for many of the foregoing remarks and deſcriptions.

I have obſerved no regular order in the diſpoſition of *genera* and *ſpecies*. An omiſſion of this ſort, I apprehend, will be readily excuſed; as the ſubſequent index will enable every reader to find the ſubject whoſe qualities are deſcribed in the catalogue.

The ſubſtances next-mentioned may be taken collectively with the preceding; though, for the ſake of propriety, I have given them a detached place diſtinct from the vegetable tribe.

251. Marine Salt

Is eaſily manufactured, upon all the ſalina's in this iſland, by exſolation. This article, as I have before-mentioned, was formerly a very conſiderable part of the annual export, till other commodities of greater profit were undertaken. On ſome parts of the coaſts it is ſtill made, chiefly by coction, for the uſe of a few particular eſtates. In a large work, whether by exſolation in pans, or by boiling (where a conſiderable number of cauldrons are uſed), the water may be very conveniently thrown in, by means of a ſmall wind-ſail pump. After being boiled to a granulation, it is ſtowed in baſkets, which are ſuſpended in an airy, ſhaded place, to let the bittern drain off; after which, it is fit for conſumption.

252. Petrifying Water.

Many ſprings in the mountains are of ſo petrifying a nature, that I have ſeen very excellent hones, made with pieces of hard wood, properly ſhaped and planed, then laid to ſoak in ſuch water for ſeveral months, until the ſtony particles had lodged firmly in the pores; after which, they had all the appearance of real ſtone, and were made uſe of accordingly for ſharpening razors and penknives.

253. Nitre.

Large quantities might probably be obtained from thoſe caves where the bats have depoſited their dung, as in the grotto of St. Anne, where there are many dozen cart-loads of this filth. The

nitrous ſhoots, or efflorſecencies, are ſeen in great abundance about all ſtone and brick buildings in the iſland, near the ſea, where the mortar, or plaiſter, has been tempered with brackiſh water; and they very ſpeedily demoliſh prints, or other paper, placed in contact with them.

253. Marble.

The whitiſh ſhell-marble is confounded with the lime-ſtone in this iſland; it is moſt common in all the hills and lower mountains; it has a ſmooth grain, and takes a good poliſh. There are found veins of black and white marble in ſeveral parts of the country, but none have as yet been worked. The common lime-ſtone is of various kinds, but the ſhell-marble above-mentioned makes the beſt cement; and, when compounded with a ſharp, clean ſand, and freſh water, acquires in time a ſolidity equal to ſtone. The lime, when properly burnt here in ſtanding kilns, is not inferior to any in the world, either for building, or tempering ſugar; notwithſtanding which, ſome planters, rather than be at the trouble of manufacturing it properly, import their lime, at a conſiderably greater expence, from Briſtol. Moſt of the planters, who uſe the Jamaica lime, burn it in circular, conical piles, ranging the ſtrata of ſtone and wood alternately from the bottom to the top, which they bring to a point. In the Northſide pariſhes, where the ſugar, from richneſs of land, is often foul and difficult to granulate, and the trumpet trees grow in ſufficient abundance, it might anſwer well to burn their temper-lime intirely with this wood; and, by making uſe of a ſtanding-kiln, a leſs quantity of fuel would ſuffice. The aſhes, mingling with the lime, would add greatly to its ſtrength and efficacy in refining and purging the ſyrup.

It is certain, that our planters here are not ſo provident as they ought to be in the choice of lime, and in the tempering of their ſugars. In the Windward Iſles lime is not manufactured, by reaſon of the ſcarcity of fuel; they import moſt of what they uſe from Briſtol. The great error with us in Jamaica conſiſts in not burning our temper-lime in ſtanding-kilns. Some gentlemen, who uſe kilns of this ſort, find their lime not at all inferior in ſtrength to that which comes from Briſtol.

 Theſe

Theſe kilns, like reverberating furnaces, confine the heat, and keep it up to ſuch a violent glow, that one half leſs fuel is neceſſary than in the conical or French kiln before-mentioned, made in open air, with circular layers of wood and ſtone, piled one upon another. This form, and their having no incloſure, expoſe them to a continual diſſipation of heat; inſomuch, that the ſtones, which are ranged near the exterior parts of their circle, are never thoroughly burnt, and often ſcarcely at all affected; they conſume a prodigious quantity of wood; and conſequently, ſo large a portion of diſcordant vegetable ſalts is intermixed with the lime, as to render it weak, and leſs fit for the purpoſe intended in the boiling-houſe, where the moſt cauſtic lime that can be procured is found to anſwer beſt. The conic kilns are well enough contrived, where a large quantity of lime is wanted for carrying on a building; as they are ſet up on different ſpots, where fuel and ſtone are moſt abundant. But every capital plantation ought to have a ſtanding-kiln, appropriated ſolely for making temper-lime, and no other; what is required for carrying on ſtructures, or making repairs, it would be more adviſeable to buy, than to exhauſt the materials adjacent to the kiln for theſe purpoſes. Or, encouragement might be given to inferior ſettlers to build ſtanding-kilns, and prepare lime for temper, in a ſkilful and careful manner, ſo as to become a ſort of fixed marketable commodity, and article of regular traffic, for ſupplying the ſugar eſtates; for, if it ſhould be ſo conſtituted, and ſold to them at a certain reaſonable price, it would be found to indemnify theſe ſettlers for their pains beſtowed upon it; and cauſe a very great improvement in the quality of our Jamaica ſugar. Lime-ſtone, in common with all other calcarious ſubſtances, contains a large portion of *fixed air*; the preſence of it makes them what is called *mild*, and the deprivation of it, by means of fire, renders them *cauſtic*[a]. This explains the change of mild, calcarious earths into quick lime, which is effected by expelling the fixed air that naturalized them. It is found by experiment, that ſoft water is a much more powerful diſſolvent of quick lime, than hard water, at the ſame time that it covers and meliorates the harſhneſs of its taſte.

What is made with diſtilled water is by far the moſt pungent, and yet the leaſt diſagreeable; whereas, what is prepared with raw, pump-water, is extremely harſh and nauſeous, without being proportionably

[a] Prieſtly.

impregnated with the acrimony, or ſtrength of the quick lime. Where diſtilled water cannot conveniently be had, rain water, freed by filtration of its impurities, may, with equal efficacy, be ſubſtituted in its room.

Different kinds of quick lime are found to impregnate water with different degrees of ſtrength; but a diverſity in the *menſtruum* in which it is diſſolved, appears alſo to vary it conſiderably. In order therefore to procure what is of the fitteſt quality for the boiling-houſe, it is full as neceſſary to be careful in the choice of water, as of the lime-ſtone. In Jamaica it is uſual to throw a quantity of quick lime into privies, that are grown offenſive, in order to ſweeten them; which purpoſe it very ſpeedily and moſt effectually anſwers, by abſorbing probably the mephitic particles. In Madeira it is thrown on the corpſes buried in church, to accelerate their diſſolution, and prevent noxious effluvia.

254. Free Stone.

255. Agats.

I have occaſionally ſpoken of their varieties generally remarked here *.

256. Refining Clay.

257. Potters Clay.

258. Pipe Clay.

The firſt is uſed in claying Muſcovado ſugars, as well as for a better ſort of earthen ware, manufactured by the Negroes.

The ſecond is more frequent, and ſupplies the inhabitants with water jars, and other convenient veſſels for domeſtic uſe. It is likewiſe moſt proper for tiles, and drips.

The third ſort is common to many parts, or at leaſt a ſpecies of it. In Sixteen-mile-walk, the ſoil in general is a reddiſh clay, upon digging into which a ſmall depth are found detached veins of a white clay, reſembling that from which tobacco pipes are made; it bears the fire well, and might doubtleſs anſwer in manufacture.

259. Aboo Earth.

This is chiefly found in marley beds, running in veins of various colours, but generally anſwering to that of ſurrounding layers: it is

* Vol. II. p. 66.

 apparently

apparently ſmoth, unctuous, and ſomewhat coheſive, of a ſweetiſh taſte, and diſſolves readily in the mouth. Some Negroes get ſuch a habit of eating it in exceſs, that it often proves mortal to them, by entering into the circulation, and obſtructing the capillary veſſels. Dr. Browne ſays, it has even been found concreted in the glands, and ſmaller veſſels of the lungs, ſo as to become perceptible to the touch. It breaks the texture of the blood entirely, brings on a waſting of the fleſh, a general depravation of all the organs, and a lingering but certain death. Notwithſtanding which fatal conſequences, there is ſomewhat ſo bewitching in this practice, that it has been found exceedingly difficult to wean any from it, who have been addicted to the uſe of it for any length of time.

In regard to the other foſſile, and mineral ſubſtances found here, I refer to *Browne*'s Natural Hiſtory, who has claſſed them in regular order.

260. European and North American Herbs, Roots, and Fruits, *cultivated in this iſland, where, from their free vegetation, they may be conſidered as naturalized productions.*

Apple [*a*].	Burnet.
Aſparagus [*b*].	Burarge.
Artichoke.	Carrot.
Baum.	Cabbage [*c*].
Baſil.	Cauliflower [*d*].
Beans.	Carduus.
Beet.	Clary.
Bugloſs.	Celery.

[*a*] Several varieties of this fruit have been cultivated in the cooler diſtricts, particularly in the Liguanea Mountains, where they ſeem to thrive beſt, and bear large and well flavoured fruit, but in no great abundance; the trees ſhoot too much into wood.

[*b*] This grows to a moderate ſize; but not ſo large as in Europe: nor is it managed properly, to raiſe it in perfection, for it is never laid deep enough, nor regularly cropped. Sir H. Sloane mentions the wild ſort, or *maritimus, craſſiore folio*, as indigenous to this iſland; it is probably the ſame as what is cultivated at Montpelier, Gibraltar, and Minorca, and might be propagated here in great perfection, as it has been found by experience to thrive only in warm climates.

[*c*] Theſe grow to greater perfection than in England: I have ſeen heads of enormous ſize and weight produced in ſoil juſt cleared from the native wood, on the North-ſide, poſſeſſing an extraordinary ſweetneſs, and remarkably firm and compact.

[*d*] Theſe do not attain to any conſiderable bulk. They are ſometimes brought to Kingſton market, from the Liguanea Mountains.

Creſs,

Cresſ.
Cucumbers.
Eſchalot.
Endive.
Fennel.
Fig [e].
Ground Ivy.
Garlic.
Grape vines.
Hyſſop.
Horſe-radiſh.
Haſel.
Lavender.
Lettuces.
Leek.
Liquorice.
Marigolds.
Marſh-mallow.
Marjoram.
Mints.
Muſtard.
Melons.
Mulberry Carolina [f].
Mulberry Virginia [f].
Onion.
Parſnip.
Parſley.
Penny-royal.
Purſlane.
Peas.
Potatoe,
Peach [g].
Quince [h].
Radiſhes.
Rue.
Roſemary.
Roſes.
Sage.
Saffron.
Savory.
Scurvey-graſs.
Strawberry [i].

Sun-

[e] This thrives very luxuriantly in the low-lands, bears well, and produces ſo delicious a fruit, that it is probably not excelled in thoſe countries where it is indigenous. It is adviſed to propagate it by layers; the tree ſhould hardly ever be pruned, or but as little as poſſible; but, if it grows too luxuriant, the ground ſhould be dug up on one ſide of it, and about two or three feet from the bottom of the trunk, all the roots ſhould be cut away (big and little), and the hole filled up with rubbiſh, of a dry barren kind; which, if the like ſuperfluous growth ſhould continue, may be tried on the other ſide, the following year. But if the tree does not bear thick, or the fruit be obſerved not to come to perfection upon it, the top ſtems ſhould be cut off, ſo ſoon as they and the fruit begin to appear in the ſpring. *Browne.*

[f] Theſe thrive well here, but do not bear fruit when planted in the low-lands. The berries of the firſt ſort are longer than the European, and of a whitiſh colour; thoſe of the ſecond are red, but ſmaller, though perfectly well flavoured.

[g] Theſe ſeldom fructify, nor does the fruit attain to any tolerable ſize; but it has all the fine flavour peculiar to it; I ſaw ſome in a gentleman's garden, in the Vale of Luidas. They might poſſibly anſwer better in ſome part of the Liguanea Mountains.

[h] Theſe thrive well in the mountains, and bear in as great perfection as in moſt parts of England.

[i] Theſe grow in as great perfection here as in England, but chiefly in the mountains: however, they are apt to ſpend themſelves in runners or ſuckers, trailing over a large tract of ground, if

Sun-flower [*k*].	Trefoil.
Succory.	Turnip.
Tanſey.	Walnut.
Thyme.	Worm-wood.

Catalogue of Jamaica productions in uſe for POT-HERBS or GREENS, and of eſculent Farinaceous, ROOTS, FRUITS, GRAIN, BERRIES, LEGUMINA, DISSERT FRUITS, SPICERY, FLESH, FISH, *&c.*

That ſtrangers to this iſland, who intend to viſit it, may have the ſatisfaction of knowing that they are not bound to a land of famine, I think, it may not be unacceptable to lay before them a *bill of fare*, which may likewiſe have its uſe with new ſettlers, who by this means may ſoon learn to ſupply themſelves, from the great garden of nature, with a variety of wholeſome and palatable viands.

261. POT-HERBS and GREENS.

Papaw-fruit.	Squaſh.
Baſtard cedar-fruit.	Tomato fruit.
Mountain cabbage.	Ochro.
Wild cucumber.	Choco.
Cotton-tree leaf.	White-coco-tops.
Trumpet-tree leaf.	Tyre.
Bread-nut fruit.	Indian cale.
Branched calalue.	Gourd or pumpkin.
Brownjolly berry.	Amyris, or } leaf for teas.
Calalues.	Sweet-wood, } leaf for teas.
Caſſada leaves.	Wild ſage, } leaf for teas.
Cucumbers.	Weſt India tea } leaf for teas.

if care be not taken to keep them conſtantly trimmed; when they are ſuffered to run wild, they bloſſom, but never bear well. They are in ſeaſon here about the latter end of June. Kalm ſay, that in 1749, an Engliſhman from Jamaica informed him, there was none of this fruit in the iſland; but he was certainly miſinformed, for they were very plentiful here ſo long ſince as the year 1716, perhaps earlier. An old gentlewoman aſſured me, that when the Duke of Portland was Governor (about the year 1722), they were in ſuch abundance, that his table was conſtantly well ſupplied in the ſeaſon. And I have ate large quantities of them in the months of June and July, brought from the Liguanea Mountains; I have likewiſe ſeen them very flouriſhing in gardens in the low-lands.

[*k*] A very uſeful oil may be extracted from the ſeeds of this plant.

262. FARI-

262. Farinaceous Fruits, Grain, and Legumina.

Plantain.
Banana.
Great corn, or Maize.
Guiney corn.
Guiney wheat.
Black-eyed pea.
Cuckold's increaſe.
Rice.
Bonaviſte.
Lima.
Calavances.
Kidney bean.
Sugar bean.
Pigeon peas.
Marrowfats.
Broad bean.
Water oats.

263. Roots.

Sweet potatoe.
Baſtard Iriſh potatoe.
White coco.
Purple coco.
Eddoes.
Caſſada.
Sweet caſſada.
Negroe yam.
White yam.
Choco root.
Indian arrow root.
Pindals.
Water arrow head.

264. Dissert Fruits.

Apple of Europe,
Avocado Pear, 2 varieties,
Biche, or Biſſy [l],
Banana ripe,
Brabila,
Cherries, Barbadoes,
Citrons,
Caſhew, 4 varieties,
Cocoa-nut,
Cuſtard Apple,
Date,
Fig,
Forbidden Fruit,
Granadilla,
Genip, 2 varieties,
Grape of the Sea Side,
Grapes, varieties,
Gooſeberry of the Spaniſh Main,
Lemon of St. Helena,
Lemon common, and 3 other varieties,
Lime, 2 varieties, and
Lime Bergamot,
Mammee, 2 varieties,

[l] The tree which bears this fruit was introduced from the coaſt of Guiney, and is not yet common, though extremely valuable. The bark is of a duſky red, and uſed in ſome parts of that country for dying cloth and cotton. The tree is eaſily propagated from the ſeed, in a good, moiſt ſoil, and might be procured by any of the captains uſing the trade.

Cocoa-

Mammee Sapote,
Melons, 5 or 6 varieties,
Mulberry of Carolina,
Mulberry of Virginia,
Naſeberry, 2 varieties,
Orange Sweet, 2 varieties,
Orange Sour, 2 ditto,
Orange Bergamot,
Pomegranate,
Papaw,
Plumb, { Damſon, Maiden, Hog, Spaniſh, Topknot, Leathercoat, Cocco, Jamaica,
Prickly Pear,
Penguin,
Pine Apple, 7 or 8 varieties,
Plantain ripe,
Roſe Apple,
Sapodilla,
Sweet-ſop,
Sour-ſop,
Star Apple, 2 varieties,
Sorrel, 2 ditto,
Shaddocks,
{ Olive [m], Almond, Walnut,
Nuts, Cocoa,
Ditto, Caſhew,
Ditto, Pindals,
Ditto, Palm.

265. Preserves.

Pine Apple,
Ginger,
Oranges,
Lemons,
Limes,
Citron,
Guava,
Red Sorrel,
Barbadoes Cherry,
—— Mammee,
Cocco Plumb,
Leather-coat ditto,
Caſhew Apple,
Tamarind,
Papaw Bloſſom,
White Sorrel,
Plantain,
Banana.

266. Pickles.

White-tufted Muſhroom [n],
Wild Cane-top,
Wild Cucumber,
Papaw Fruit,
Artichoke,
Samphire,
Anchovy Pear,
Peppers, &c.

[m] The olive trees introduced here, bear but very indifferently as yet. I have eaten almonds produced here of an excellent flavour, but they are ſcarce. The walnut is hitherto unprolific.

[n] This ſpecies is common after heavy ſhowers, and grows generally on the decayed trunks of the hog-plumb and cotton-trees. It is the only ſort that is in uſe here; and when waſhed and pounded, is ſometimes boiled with beef in ſoups, to which it gives a very agreeable flavour; it is no leſs palatable when pickled.

267. Spicery and Peppers.

Ginger,
Pimento,
Wild Cinnamon,
Wild Clove, or Bay-berry,
Jamaica Black Pepper,
Indian Pepper,
Bell,
Goat,
Bonnet,
Bird,
Olive,
Hen,
Barbary,
Finger,
Cherry,
Ram's-horn,
Coral, &c.
American Nutmeg.

268. Perfumes.

Muſk Wood,
Muſk Okro,
Vanilla,
Roſe Wood,
Prince Wood.

269. Vegetable Soaps.

Coratoe,
Soap-tree,
Broad-leafed Broom-weed,
Lignum Vitæ Leaves.

270. Gums and Resins.

Guiacum,
Hog-tree,
Caſhew,
Gum-tree,
Locuſt-tree, or *Gum Animé*,
Sweet Wood,
Birch,
Candle Wood,
Balſam-tree,
Manchineel,
Acacee,
Palmeto Royal,
Baſtard Mammee.

271. Dyes and Pigments.

Indigo,
Anotto,
Logwood,
Braſiletto,
Nicaragua,
Fuſtic,
Indigo Berry,
Scarlet Seed,
Prickly Pear,
Morinda Root, or Yaw-weed,
Prickly Yellow Wood,
Shrubby Goat Rue,
Lignum Vitæ Leaves, for refreſhing faded colours,

Cashew-tree, Juice inspissated,
Mountain, or Surinam Calalue,
Vine Sorrel,
Avocado Pear-stone,
Acacee,
Flower Fence,
Bastard Saffron,
Bastard Lignum Vitæ,
Yellow Wood,
Yellow Hercules,
Cashaw, Bark and Root,
Bissy Bark,
Shrubby Goat Rue.

272. Oils.

Cotton Seed,
Oil-nut, or *Palma Christi*,
Macaw-tree,
Palm-nut,
Cocoa-nut,
Vanglo, or Sesamum,
Oil-tree, or Sapium of St. Thomas in the East,
Antidote Cocoon,
Pindals,
Sunflower Seeds,
Prickly Yellow Wood Seed,
Jack-in-a-box ditto,
Cacao-nut,
Pimento,
Vanilla,
Tobacco,
Locust-tree,
Cerasee,
Ebony,
Spanish Elm, or Prince Wood,
Cashew,
Gum-tree,
Alligator Wood,
Bastard Lignum Vitæ.

273. Substances for Cloathing.

Cotton Wool,
Down-tree-down,
Coratoe Leaf,
Penguin ditto,
Silk-grass,
Cocoa-husk,
Mahoe-bark,
Laghetto ditto,
Bon-ace ditto,
Date-tree,
Mountain Cabbage,
Red Sorrel Bush,
Hides, } varieties.
Skins, }

274. For Manufacturing Paper.

Mahoe-bark,
Laghetto-bark,
Mountain Cabbage-tree.

275. For

275. For Tanning Leather.

Mahoe-bark,
Black Olive ditto,
Button-tree ditto,
White Bully ditto,
Red Mangrove,
Dog Wood.

276. For Cordage.

Coratoe Leaf,
Penguin ditto,
Silk-grafs,
Cotton,
Cocoa-nut Fibres,
Mahoe-bark,
Bur-bark,
Prickly-bark,
Torch-thiftle Fibres,
Laghetto-bark,
Bon-ace ditto,
Trumpet-tree ditto,
Mountain Ebony ditto,
Lilac ditto,
Anotto ditto,
Palmeto Leaf,
Mountain Cabbage,
Fig-tree Bark.

FOR PLANTATION USE.

277. Fences.

Logwood,
Penguin,
Torch-thiftle,
Phyfic-nut,
Orange,
Lemon,
Lime,
Dog Wood,
Prickly Yellow Wood,
Horfe, or Grey Nickar,
Jerufalem Thorn,
Palmeto ftakes,
Ebony ditto,
Fern-tree.

278. Hoops.

Logwood,
Lilac,
Fingrigo,
Hoop-withe,
Horfe-wood, or Hoop-wood,
Spanifh Elm.

279. Mats.

Palmeto Leaf,
Rufh,
Great Reed,
Cabbage-tree Leaf,
Plantane Leaf.

280. Baskets.

Wild Cane,
Basket-withe,
Palmeto Leaf,
Rush.

281. Candles.

Bees Wax and Tallow.

282. Lamps.

See Oils.

283. Wick.

Cotton,
Rush.

284. Starch.

Indian Arrow-root,
Rice.

285. Chair-bottoms.

Rush,
Palmeto Leaf.

286. Brooms.

Broom Weed,
Mountain Broom,
Great Reed,
Ebony Twigs,
Tamarind ditto.

287. Stuffing for Beds, Matrasses, Chair-bottoms, &c.

Old Man's Beard,
Down-tree-down,
Cotton,
Plantain Leaf,
Banana ditto,
Wire Grass.

288. Crockery Ware.

Potter's Clay.

289. Domestic Utensils, as Water-jars, Bowls, Cups, Saucers, Spoons, Ladles, Pots, and Bottles, &c.

Calibash Fruit,
Cocoa-nut,
Gourds.

290. Corks.

Cork Wood.

291. Cattle

291. Cattle Yoaks.

White Cedar,
Birch,
Calibaſh,
Baſtard Cedar.

292. Bows.

Guava,
Calibaſh.

293. Mule Crooks.

Guava.

294. Wheel Carriages.

Bodies,—Baſtard Cedar, &c.
Shafts,—Lance Wood,
Naves,—Dog Wood,
——— —Calibaſh,
Spokes,—Braſiletto,
Fellies,—Calibaſh,
——— — Wild Tamarind,
——— — Fuſtic.

295. Hogshead Staves [o].

Santa Maria,
Gum Tree,
Alligator Wood.

296. Heading.

Cotton Tree,
Wild Tamarind,
Loblolly,
Alligator Wood,
Broad Leaf.

297. Sugar Pots.

Broad Leaf,
Cedar,
Cotton Tree.

298. Materials for Building.

Lime Stone,
Marble,
Free Stone,
Stone, varieties,
Sand,
Brick and Tile Clays,
Wire Graſs, for plaiſtering.

299. Wattles and Laths.

Wild Cane,
Loblolly,
Lilac.

[o] Hogſhead ſtaves are required by law to be 3½ feet in length, and 4 inches broad. One cooper is reckoned to be capable of hewing 70 *per diem*, good allowance.

300. Shingles [p].

Cedar,
Mahogany,
Maſtic,
Broad Leaf,
Fiddle Wood,
Bullet-tree, &c.

301. Thatch.

Great Reed Mace,
Palmeto Leaf,
Thatch-tree,
Macaw,
Cocoa-nut Tree Leaf,
Wild Cane,
Sugar Cane,
Sour Graſs,

302. Timber Trees for Building, &c.

Barbadoes Cedar,
Broad-leafed Cherry,
Baſtard Bully Tree,
Baſtard Lignum Vitæ,
Braſiletto,
Baſtard Manchineel,
Baſtard Iron-wood,
Black Olive, or Bark Tree,
Baſtard Green-heart,
Break Axe [q],
* Bitter Wood,
Broad Leaf,
Black-heart Fiddle Wood,
Baſtard Cabbage,

[p] They muſt be 18 inches long, and 5 broad. Suppoſing the blocks ready hewn, two Negroes uſually ſplit 500 *per diem*. The price 3*l*. to 3*l*. 10*s*. and 4*l*. *per* mill, according to the quality of the wood.

[q] This is one of the beſt and largeſt timbers in the iſland. It is ſo extremely hard, that it is found a difficult matter to cut it down, and from this quality it takes its appellation.

The general properties of the Jamaica timbers are theſe: heavineſs, ſhort cloſe grain, hardneſs, firmneſs, ſmoothneſs, ſolidity; the wood often reſinous, and its fibres ſhort and brittle. Some few are remarkable alſo for toughneſs and elaſticity.

The hardeſt timber, and, if on the mountains, the loftieſt, is ſuch as grows in a moderately rocky or ſtony ſoil, having a great depth, and yielding eaſy paſſage to the tap-roots below. The timber of the more arid parts of the country is almoſt as hard as iron, though many of the trees are of exceedingly ſmall diameter.

In the North ſide, Eaſtern, and Weſtern parts, the greater ſupply of rain occaſions a greater redundancy of ſap. The trees in thoſe parts are larger and loftier, but their timber, in general, leſs durable, and of many, leſs compact, than thoſe of the dry Southern diſtricts.

The grain of ſeveral old mahogany, cedar, and other timber trees, near the root, has often been found impregnated with minute calcarious particles, which muſt have been carried up with the ſap into the veſſels of the trunk itſelf. Theſe particles are ſometimes ſo intimately incorporated with the heart of the wood, as to give workmen an extraordinary trouble in working it up, by ſpoiling the edge of their planes, and other fine tools. If I miſtake not, the like remark has been made with reſpect to grape vines in ſome countries, in the hearts of which is ſometimes diſcovered a concreted ſtony ſubſtance; and it is probably owing to this facility of abſorption, that ſeveral wines, particularly the more acetcent, are ſo copiouſly charged with tartar.

* Thoſe which are marked with a * are only proper for inſide work.

Cotton

Cotton Tree,
Dog Wood,
Ebony,
Fuſtic,
French Oak,
Green-heart, or Logwood,
Green-heart Fiddle-wood,
Iron Wood, 2 ſorts,
Lignum Vitæ,
Locuſt,
Lance Wood,
Mountain Grape,
Mountain Guava,
Mountain Mahoe,
Mountain Dogwood,
Mammee, 2 ſorts,
Mahogany,
Maiden Plumb,
Milk Wood,
Nicaragua Baſtard,
Naſeberry Bully Tree,
Prickly Yellow Wood,
Prickly White Wood,
Rod Wood, 2 ſorts,
* Santa Maria,
Spaniſh Elm,
Sweet Wood,
Silver Wood,
Tamarind,
Wild ditto,
* White Fiddle-wood,
* White Bully Tree, or Gallimeta,
Wild Olive,
White Candle-wood, or Roſe-wood,
White Cedar, or White Wood,
* Yellow Sanders,
Yellow Hercules,

303. Wharf Piles.

Dogwood,
Caſhaw,
Palmeto,
Olive Mangrove,
Braſiletto,
Lignum Vitæ,
Cedar,
Bitter-wood.

304. Naval Architecture.

Canoes and Piraguas, } Cotton-tree, Cedar,
Plank,—Cedar,
Timbers,—Olive Mangrove,
Timbers,—Cedar,
————Mahoe,
————Caſhaw,
————Larger Calibaſh.

305. Cabinet Ware.

Mahogany,
Barbadoes Cedar,
Bermudas ditto,
Roſe-wood, or Candle-wood,
Muſk, or Alligator Wood,
Spaniſh Elm, or Prince Wood,

Pigeon

Pigeon Wood,
Bread-nut Zebra Wood, or Rainbow Wood,
Brasiletto,
Fustic,
Bitter-wood,
Yellow Sanders,
Cashaw,
Calibash,
Sea-side Grape,
Maiden Plumb,
Manchineel,
Mountain Guava,
Lignum Vitæ,
Ebony.

306. Reed for Polishing.

Branched Horse-tail.

307. Birds and Fowls in common Use for Food.

These are birds of passage, and make their appearance every year about the beginning of October, in prodigious flocks. But the wild ducks, teal, and lesser snipe, breed in the island, and are found during the whole year; though not in so great abundance as about the season of the autumnal rains.

- Ortolan, or Butter Bird [r],
- Snipe smaller,
- Ditto larger grey [s],
- Whistling Duck,
- Spanish Main Duck,
- American Wood-duck, and several varieties,
- Teal [t],
- Plover,
- Wild Goose.

These, as well as the preceding, are by the sportsmen esteemed *game*.

- Ring-tailed Pigeon [u],
- Mountain Pigeon,
- Bald Pate [w],
- White-winged Dove,
- Pea-dove,
- White-bellied Dove [x],
- Mountain Witch,

[r] These are the rice birds of South Carolina. They grow exceedingly fat in Jamaica, in the season, and are esteemed by connoisseurs not inferior to the true ortolan.

[s] These are somewhat larger than the English, and generally very fat.

[t] The duck and teal, on their first arrival, have a fishy taste; but after being some time in the country, they grow exceedingly fat and delicious.

[u] This is esteemed one of the principal dainties by the Epicures of the island; it is often so turgid with fat, as to burst on falling to the ground after it is shot.

[w] In the season they are fat and well-tasted, but afterwards their flesh acquires the bitterness of gall, and is not eatable; this is ascribed to their feeding on the seeds of the red mangrove.

[x] This has much the flavour of the English partridge.

These,

These, as well as the preceding, are by the sportsmen esteemed *game*.

- Mountain Cock,
- Guiney Hen, and varieties [y],
- Partridge of North America,
- English Quail,
- Clucking Hen [z],
- Grey-crested Galding,
- Blue Galding,
- Grey Plover,

House-pigeon,
Bantam ditto,
Barbary Dove,
Ground Dove,
Peacock,
Curacoa Bird,
Curacoa Fowl,
Turkey [a],
Dunghill Fowls [b],
Game Fowls,
Rumpless Fowls,
Bantam Fowls,
Parrot,
Parroquet,
English Goose [c],
North American ditto,
China ditto,
Muscovy Duck,
English Duck [c],
Red-faced Coote,
Plantane Coote,
Water-hen.

308. Quadrupeds.

Horned Cattle, of Spanish breed, wild and tame,
Ditto, English tame,
Sheep Spanish [d],

[y] This well-known bird is thought equal at least to the pheasant; it is very valuable on another account, it lays from 20 to 80, and 100 eggs, and raises a great number of young at a time.

[z] This is looked upon as the best wild fowl in the island.

[a] Some of these are so large as to weigh in their plumage 25 lb. or upwards.

[b] Some capons weigh $5\frac{1}{2}$ lb. without their plumage.

[c] They seem to thrive best in the cooler parts of the island.

[d] The breed of our sheep requires crossing, otherwise they degenerate; changing an old ram for a young one is absolutely necessary. One ram is sufficient for about fifty ewes. Carried to a cold climate, they acquire longer hair, but no wool. The grass mutton here, at the proper seasons, is remarkably sweet, juicy, and well-tasted, but small; and would be much better meat if kept to a proper age, for it is generally slaughtered too young; nor is any care bestowed on the choice of pasturage. The lamb is always delicious. The stall-fed is as grossly fat as the Essex mutton, and the flesh whitish. The lowland grass-fed is generally most approved of: but the best I have seen, is what has been pastured at Pedro's in St. Ann's. It might be worth while to import the *Llamas* or Peruvian sheep, and propagate them here. These animals are equal in height to an ass of between one and two years old; the Indians use them as beasts of burthen, and they will carry any load under an hundred weight; when they are past labour, they are fattened and slaughtered, and their flesh is esteemed sweeter than that of other mutton: they are extremely docile, and easily kept.

Sheep North American,
Red Deer [e],
Fallow Deer,
Nanny Goat [f],
Rupi Goat,
Baſtard Ibex Goat,
Engliſh Rabbit [g],
Indian Coney,
Wild Hog [h],
Engliſh Hog [h],
Guiney Hog [h],
Guiney Pig,
Guana [i].

309. Freſh-water Fish.

Mountain Mullet [k],
Silver Eel,
Mud-fiſh,
Minnow, or Ticky-ticky,
Cray-fiſh,

Theſe frequent both the ſalt and freſh waters, but are more commonly found in brackiſh rivers.

Jew-fiſh [l],
Calipever [m],
Mullet,
Snook [n],
Shrimp.

[e] Theſe were originally imported from the Continent, and are now grown ſcarce. They rarely grow fat here in their wild ſtate, but their fleſh has a good flavour.

[f] The wether goat here is eſteemed, when fat, not inferior to Engliſh mutton, and ſtrongly reſembles it in flavour. Both goat's and ſheep's milk is uſed here in common, and thought very nouriſhing and reſtorative. The cows of the lowlands yield little, and their milk is often poor and wateriſh. The young kids, roaſted whole, are juſtly eſteemed a delicious regale.

[g] One buck is reckoned ſufficient for ten does. It is computed, that 50 breeders will annually furniſh 50 for family uſe, 50 for ſale, and a ſufficient number beſides to keep up the ſtock. The ſilver-haired ſkins anſwer beſt for ſale.

[h] The fame of our Jamaica *barbecue* and brawn is ſo well eſtabliſhed, that it would anſwer no purpoſe to reiterate their praiſes, except to tantalize the reader. The tame ſorts are a very profitable ſtock to the ſettler or planter, as they multiply faſt, and are kept or fattened with very little trouble. One boar is generally allowed to ten ſows.

[i] This animal ſeems to be ſomewhat of the lizard kind, but of the larger ſpecies. It will feed on cock-roaches, or any other inſect, and even ſmall fiſh. It is eaſily tamed when young, and entirely inoffenſive.

[k] The mountain mullet is not unlike the ſmelt in ſhape, but it is at leaſt ſix times larger, and juſtly reputed one of the moſt delicious fiſh in the univerſe. When it is in ſeaſon, the female bears a roe nearly as big as her body.

[l] Theſe are of all ſizes, from 3 lb. to 300 lb. wt., and upwards; the ſmaller-ſized, or from 4 lb. to 10 lb. wt., are moſt approved; the overgrown ones having a diſagreeable rankneſs, not to be ſubdued by all the arts of cookery.

[m] They ſhoot their roes in the middle of November. They are in general much larger than the ſnook, and ſeem only a larger ſpecies of the ſea mullet, extremely reſembling in form, fleſh, and flavour, thoſe of Arundel in Suſſex.

[n] One of theſe meaſured three feet four inches in length, from the ſnout to the tail's end, and weighed 23 lb.

310. Sea

310. Sea-Fish.

"I know not (ſays Sir H. Sloane), neither have I heard of any "place where there is a greater plenty of freſh water and ſea fiſhes, "than on this iſland and on its coaſts; which is a great providence "and contrivance for the ſupport of the inhabitants;"—more eſpecially for thoſe who reſide near the ſea, who do not enjoy the productions of the earth in ſuch luxuriance as thoſe of the interior parts, and in unſeaſonable years depend upon the produce of the ocean, which never fails them, for a large part of their ſubſiſtence.

I ſhall enumerate only ſuch as are the moſt in eſteem; *viz.*

Black ſnapper,
Red ditto,
Yellow ditto,
Stone baſs,
Anchovy or ſilver fiſh,
Flounder,
Soal,
Hog,
Bream,
Angel,
Spaniſh Mackarel,
Herring,
Ten pounder,
Flying,
Gar,
Dolphin,
Bracket flounder,
Ocean king-fiſh,
Porgee,
Blue parrot,
Painted parrot,
Green parrot,
Welchman,
Grooper,
Sun-fiſh,
Yellow tail,
Silver ſhad,
Dark grunt,
Drummer,
Paracuta [o],
Bonetta,
King,
Cavalla,
Old wife,
Trunk,
Cuckold,
Maid,
Sting ray,
Whip ray,

[o] This fiſh has been thought unwholeſome, when the roof and palate of its mouth are black. This appearance is probably occaſioned by their feeding at certain times on ſome noxious ſubmarine plant.

311. Amphibious.

Manatti or ſea cow [p],
Hawk's-bill [q] } turtle,
Green } turtle,
Terrapin } turtle,
Hecatee or land turtle [r],
[s] Mountain or black crab } with ſome varieties.
Mangrove or white crab } with ſome varieties.

These are more properly terreſtrial, or ſub-amphibious.

312. Shell-Fish.

Mangrove oyſter [t],
Flat or bank oyſter [t],
Engliſh bank oyſter [u],

[p] It taſtes as well as looks like very white veal, but the ſkin has the ranknefs of pork. It is beſt ſalted.

[q] The ſhell of the hawk's-bill, and the fleſh of the green turtle, are their reſpective excellencies. The green, of fifty to eighty pounds weight, is in the higheſt repute; but both are now ſo commonly known in England, that it would be ſuperfluous to ſay more of them, except the remarkable circumſtance of their being dreſt in Jamaica in a plainer manner, and with leſs ſauce or ſeaſoning, than in England.

[r] Some of theſe have been known to live thirty years.

[s] In December and January they begin to be in ſpawn, and are then extremely fat and delicious; they continue in ſeaſon till May, at which time they begin to caſt their eggs, and to loſe their richneſs and flavour; they diſcharge their eggs into the ſurf, and then return to the mountains; about July and Auguſt, they begin to grow fat again, and prepare for changing their ſhell; how this operation is performed, ſeems not to be certainly known; but as ſoon as the old covering is diſcharged, they are in the richeſt ſtate, being cloathed only with a tender membranous ſkin, which gradually hardens afterwards into a perfect ſhell. During this change, there are ſtony concretions always formed in the ſtomach or bag of this creature, which waſte and diſſolve, as it forms and perfects its new cruſt.

The white crabs are not ſo much eſteemed, and are chiefly eaten by the Negroes. Till late years the black crabs ſwarmed ſo amazingly in ſome parts of the North ſide, that the inhabitants uſed to deſtroy millions of them every year, in order to extract an oil from them for their lamps; a practice, which every admirer of this exquiſite dainty, concurs in pronouncing a *burning ſhame*.

[t] Theſe are much ſmaller than the European, but extremely delicate, and not at all inferior to the Coleheſter. They do not only faſten upon the mangrove roots, but any other ſubſtance. I have ſeen a quart bottle taken out of the water entirely covered with them. The flat oyſter comes very near the vegetable kingdom; it ſhoots out ſeveral prongs reſembling the fibres of a root, by which it is fixed; this latter ſort is unwholſome at certain times of the year.

[u] Theſe are the deſcendants of a parcel imported from Europe by a gentleman of Vere many years ago; but they ſeem to have degenerated. Thoſe of *Panama*, or *Florida*, would probably anſwer better.

Sea-

Sea crabs [w],	Wilk,
Lobſter,	Conch,
Shrimp,	Muſcle,
White cockle,	Soldier or hermit.

313. ANIMALS OF PREY.

	Marine	Shark.
	Terreſtrial	None properly ſo called.
314.	Amphibious	Alligator.

The *alligator* is a ſluggiſh, timorous animal, never venturing far beyond the margin of the water, eaſily diſcovered when on ſhore by its muſky ſmell, and as eaſily avoided, from the great difficulty with which it turns itſelf to the right or left; in the water it is ſoon maſtered by the Negroes, ſome of whom are very dextrous, and attack and defeat it in its favourite element.

In the morning and evening, theſe animals baſk in the ſunſhine upon ſand-heaps in retired places, on the banks of rivers, near the ſea; for they are not found in the mountain rivers, nor at any conſiderable diſtance from the ſhore. Sometimes they ſeem to float in a dog's-ſleep, keeping their heads juſt half raiſed above the ſurface of the water, with one eye ſhut, the other open; or hold their jaws extended, to admit the muſkeeto's, and when a ſufficient number are collected, ſuddenly encloſe and gulp them down, as a child does carraway comfits. The pupil of their eye reſembles that of a cat, in form, as it likewiſe does in reſpect to its dilatation into a circular figure in the dark. Between the times of their ordinary reſpiration when on ſhore, there was obſerved an interval of one minute, to one and a half. Their movements are extremely ſlow, the conſequence probably of the inert circulation of the blood and other fluids, as we obſerve in regard to the turtle. They pay no attention to a perſon gently and gradually approaching them; but a ſudden agitation of the body, or a loud noiſe, diſturbs and terrifies them. It is not yet known what their principal food conſiſts of. They feed on the water-apples; but as theſe are only in ſeaſon during

[w] The crab and lobſter are much ſmaller than the European; the former is very indifferent meat, but the latter agreeable to moſt palates, and very delicate: the ſhrimp is excellent. The reſt are principally uſed in pepperpots, and eſteemed very reliſhing and whole ſome ingredients.

one

one part of the year, they muſt neceſſarily have recourſe at other times to a different aliment. It is certain, that they will prey upon the dead carcaſes of animals thrown into the water near their haunts. They will alſo carry off living animals, ſuch as calves and colts, whenever they are able to ſurprize them: they are likewiſe ſaid to devour fiſh, when they fall in their way; it ſeems therefore that they are endued with a capacity to digeſt theſe ſeveral kinds of food, and convert them to their ſubſiſtence; but although I have ſeen many of them cut open, I never obſerved any ſubſtances of this ſort in their maws. It is probable, from the torpid circulation of their blood, that they can endure hunger for a great length of time; and that they catch their prey by ſurprize, for otherwiſe the ſmalleſt degree of activity would elude their attempts; fiſh of every ſpecies are too nimble, unleſs blockaded in holes which they often (eſpecially the Jew-fiſh and Calipever) form in the river banks, into which the alligators are ſaid to purſue them. Cattle, ſuch as young calves and colts, which frequent theſe rivers to ſlake their thirſt, are apt to venture too far, till they are entangled in the mud or weeds at the bottom, and have not ſtrength enough to extricate themſelves; whilſt they are hampered in this manner, they fatigue themſelves with violent efforts, till they are either ſmothered or drowned, and may then become a treat for an alligator; I have been told of one, that ſeized a very young colt by the leg, as he was ſtanding on the low margin of a river, drew him into the water, and having drowned him by diving, was making towards a convenient ſpot to regale [x], when he was ſuddenly met by a canoe manned with two or three Negroes, upon whoſe ſhouts he let go his hold and retired under water, leaving his booty to the captors. Upon examining the maws of ſeveral, I perceived nothing but pebble-ſtones, and in ſome few the ſhells of alligator's eggs; whence I conclude not only that they are often deſtitute of food,

[x] It is ſaid by ſome writers, "that they let their prey lie four or five days under water "untouched, for that they cannot eat the leaſt bit till it is half rotten; but that when it is "thoroughly putrefied, they devour it with great voracity." It is not probable, that an animal furniſhed as he is, with ſuch a number of teeth fitted for rending and dividing the tougheſt ſubſtances, and whoſe appetite is repreſented to be ſo keen, could abſtain ſo long from gratifying it; beſides, it ſeems to contradict the aſſertion of others, who relate, that an alligator, having once taſted the blood of a living animal, becomes inſatiable for it ever after.

but

but that (agreeably to the relations of ſome writers) the male devours the eggs whenever he can find them. Their time of generation is about the month of May. The female lays a great number of eggs, about February or March; thirty and upwards having been found in one neſt, buried in the ſand, on the bank of a river near the ſea [y]. Hence it is credible, that Providence has deſigned theſe eggs as food for many creatures, if not for man; they are far from being diſguſtful; but, when boiled hard, are as reliſhing as the eggs of a duck or a gooſe. We are not for this reaſon, and from this inſtance, to conclude too haſtily againſt the general notion, "that animals of prey breed but few young." In fact, the alligator has many enemies; but few more deſtructive than mankind, whoſe antipathy to it ariſes from its formidable and unpleaſing figure, rather than any real miſchief it is capable of acting. Its appearance has afforded grounds for ſuppoſing its nature to be equally horrible, but this idea is the reſult of meer credulity and apprehenſion. Ulloa relates, that the birds called by the Spaniards gallinazos (a larger ſpecies of the carrion crow), in South-America, ſit perched among the branches of trees which overhang the rivers in that country frequented by the alligators, to watch the laying their eggs in the ſand; and as ſoon as the females have depoſited their hoard and are withdrawn, theſe birds dart down, and feaſt on as many as they can find. Our Jamaica carrion crows (which, though inferior in ſize, are of the ſame *genus*) are probably directed by the like inſtinct, though it may have eſcaped obſervation; for theſe birds are ſo acute and diligent in their queſt after food, as to juſtify the conjecture. The Negroes aſſert, that not only the male but the female alligators devour great numbers of their young after they are hatched: that the male devours the eggs, I have already ſhewn; nor is it unlikely but the ſame ſharpneſs of appetite which impels them to eat the eggs, may ſtimulate them alſo in a ſcarcity of other provender to gobble up ſome of the young fry. It is certain that many other animals, as ſwine, cats, rabbits, and rats, are equally unnatural in this reſpect. And what ſeems to confirm this opinion, is that a large brood of young ones is ſeldom or ever obſerved. I once found twelve in a cluſter, on the water, amongſt

[y] Thirty-ſix were found in the body of a female; we may therefore venture to ſuppoſe that the number is generally between thirty and forty.

the

the ſedge near the bank of a river, and this was reckoned by the Negroes an uncommonly numerous brood; ſo that, if the ſuppoſition be true, ſcarcely one third of the eggs they lay ever come to maturity, but periſh by ſome means or other. The little ones abovementioned were eaſily taken up, and while they were held in the hand diſcovered all the ſigns of native ferocity; a Negroe having brought me an egg which was near hatching, I broke the ſhell very carefully, and found the young one coiled up in this narrow compaſs in a moſt curious manner; the ſnout was depreſſed, and reſting upon the breaſt: the hind feet were drawn up, and the fore croſſed juſt below the ſnout; the tail extended under one of the fore feet, and turning over the back, the tip reſted upon the bend of the ſnout; I put him into a ſhallow veſſel of water, and teized him for ſome time with a bit of ſtraw till he grew very angry, and ſnapped at it, with great fury. It is ſaid, the female is guided by inſtinct to the neſt, at the time when her young ſhould be delivered from their confinement; that ſhe goes to the ſpot followed by the male, and, tearing up the ſand, begins breaking the eggs, but ſo carefully, that ſcarce a ſingle one is injured [z], and a whole ſwarm of little ones are ſeen crawling about; that ſhe then takes them on her neck and back, in order to remove them into the water; Ulloa, who gives this relation, ſays, that the gallinazos make uſe of this opportunity to deprive her of ſome; that the male, who indeed comes for no other end, devours what he can, till the female has reached the water with the few remaining; and that even the female eats all thoſe which either fall from her back, or do not ſwim; ſo that of ſuch a formidable brood, not more than four or five eſcape. This account has rather an air of the marvellous; but if we believe that theſe animals prey upon their young, this ſeems the leaſt improbable part of it, ſince it is well known, that their brood, in proportion to the number of eggs they lay, is always diminiſhed, which cannot be otherwiſe reaſonably accounted for: if it be aſked, why they ſhould leave any undevoured, as it would be impoſſible for theſe little ones to eſcape them? I anſwer, that the ſame queſtion may as well be propoſed in regard to the ſow, the cat, &c. who content themſelves with regaling on a few, but generally ſpare ſome, and

[z] Other authors relate, with more probability, that ſhe kills many of her young by the clumſineſs of her feet, and ſharpneſs of her talons.

doubtleſs not from any freedom of choice, but ſubject to the limitation of the ſame inſtinct, which urges them to deſtroy the ſuperfluous part of their progeny.

Nothing, I venture to think, but their ill looks has ſaved theſe animals from being a favourite article of food among the Negroes; but, if this prejudice ſhould happen to wear off, their numbers in Jamaica would be conſiderably leſſened in the courſe of a few years. When Columbus firſt came to St. Domingo, he found that their fleſh was in high eſteem with the Indians. I have no doubt but the fleſh of a middle-ſized one is as reliſhing as turtle, which it exactly reſembles in appearance, and in taſte alſo, as I have been aſſured by a gentleman of my acquaintance, who made the experiment, and cauſed ſome to be dreſſed turtle-faſhion, which he extolled very highly, and found it ſit equally well upon his ſtomach, though a man of rather delicate habit. But, in order to prepare them for cookery, the muſk-bags muſt be cut out before their bodies are cold; otherwiſe theſe glands will communicate their flavour to every other part. An officer, who was ſtationed at Penſacola ſince the war, declared to me, that his men very frequently ate them, and found them reliſhing and nutritive. They probably took the hint from the Indians in that part of the continent, who are ſaid to have been always fond of this food. It is plain, I think, that writers have confounded the alligator with the crocodile; and have reported more on the faith of ſtories they heard from others, than their own critical examination. Barbot, ſpeaking of crocodiles, ſays their uſual food is fiſh. Le Maire, that they will ſometimes eat fiſh only, and at other times venture upon man; likewiſe, that ſome are *venomous*, and others not; and that they feed on piſmires. Navarette affirms, that ſculls, bones, and pebbles, have been found in a crocodile's belly. Boſman, on the other hand, aſſerts, that the crocodile is an inoffenſive animal; that he never heard, it devoured either man or beaſt; though moſt authors inſiſt, that it will attack both. Norden reports, that he ſaw ſeveral crocodiles on the ſandy banks of the Nile, of different ſizes, from fifteen to fifty feet in length; that the greater part of them would not permit themſelves to be approached, but darted into the water before any man could get within gun-ſhot of them; that the natives, who

who bathe themſelves every day in the Nile, do not take any precaution againſt theſe animals; nor did he hear of any accident happening from them.

Ulloa mentions, that thoſe alligators, which have once taſted fleſh, become ſo fond of it, as never to take up with fiſh but in caſes of neceſſity; that there are even too many melancholy inſtances of their devouring the human ſpecies, eſpecially children, who have inattentively rambled near their haunts; and that alligators, who have once feaſted upon human fleſh, are known to be the moſt dangerous, and become as it were inflamed with an inſatiable deſire of repeating the ſame delicious repaſt. It is uncertain whether what he has here related was meant of the crocodile, or the alligator, as both ſpecies paſs with the Spaniards under the ſame denomination of *cayman:* but it ſeems to have been founded on the accounts which he heard from the inhabitants; for, when ſpeaking of his own knowledge, he ſays, "whatever may have "been written with regard to the fierceneſs and rapacity of theſe "animals, I, and all our company, know, *from experience*, they "avoid a man, and on the approach of any one immediately plunge "into the water." It is certain the crocodile is found in all the larger rivers of the South-American continent; and it is probable, that they vary, in colour at leaſt, from thoſe of Egypt and Africa, if not in diſpoſition. It is true, there are well-atteſted inſtances in Jamaica of the voracity of the alligator, and his making attempts upon the human ſpecies; but, whether the rarity of ſuch examples may be attributed to this creature's being more fierce at certain times of the year than at others, or when no other food is to be procured, or to the care which moſt perſons take to avoid them, is very doubtful. I am apt to think ſuch attempts are owing more to neceſſity than inſtinct. It would probably appear, upon a fair ſtate, that, of the two, the alligator is the more inoffenſive animal. But the miſtake of ſeveral writers, who confound them together, is very apparent; for they talk of alligators thirty feet in length; whereas the largeſt real alligator, known to have been meaſured, did not exceed twenty, and was juſtly thought to be of an extraordinary ſize, as they are rarely more than from twelve to fifteen or ſixteen feet. We are not, however, to repute

the alligator an innoxious creature, ſince we know that they will attack helpleſs animals, which happen to be unable to get out of their reach; ſuch as little infants, careleſsly ſtanding near them, or colts and calves, entangled in the mud and weeds at ſome frequented watering-place. Though the crocodile has never been obſerved in any of the rivers in Jamaica, he is found at the Grand Caymanas, the Iſle of Pines, ſome of the Cuba lagoons, and is very commonly met with at the Moſquito ſhore. How much he differs from the alligator will appear from the following compariſon, of a few particulars only; but I muſt obſerve, that there are ſeveral other diſtinctions between them unmentioned.

Alligator	*Crocodile.*
Has ſixty-eight teeth; two of which, belonging to the under-jaw, are ſo long, that he could not poſſibly cloſe his mouth, if it were not for two perforations, or holes, in the integument of the upper-jaw, into which they are received, as into a ſheath; and paſſing through, appear above the upper-jaw when his mouth is ſhut.	He is ſaid to have ſixty in ſeveral rows, and ſerrated.
His head is long and ſharp.	His head is thick, flat, ſhorter, and leſs pointed.
He is naturally ſhy and timorous.	The American is ſaid to be quite the reverſe.
He is of a duſky-browniſh hue, except the belly, which is whitiſh, or reſembling that of the turtle.	The American is ſaid to be yellow.
His legs are extremely ſhort.	His legs are much longer.
His tail is elaſtic, and has a naturally horizontal motion, like a fiſh's tail, which anſwers the ſame purpoſe of facilitating his courſe through the water.	When he runs on ſhore, he carries his tail above the ground, and turns the point of it up like a bow.

movement on ſhore is very ſlow and difficult to him, from the ſhortneſs of his legs, and the incumbrance of his tail, which he trails heavily after him.

His eyes are placed parallel to the aperture of the jaws.

His eyes are placed on the ſummit of his head, for the convenience of ſeeing fiſh and other objects above him, as he more frequently lies at the bottom than on the ſurface of the water.

He has four muſky glands, about the ſize of a piſtachia-nut, two under the throat, and one on each ſide the *anus*. Theſe are obſerved in all of them indiſcriminately, old or young.

Haſſelquiſt ſays, there is a *folliculus*, or ſmall bag, under the ſhoulders of the old, full-grown crocodiles of the Nile; containing a thick ſubſtance, which ſmells like muſk. But Dampier affirms, that the American crocodile has no muſky glands.

He makes a noiſe reſembling the barking of a dog.

He is ſaid to utter a ſound reſembling the crying of an infant in diſtreſs. *But Q.?*

The barking of the alligator may poſſibly have been aſſigned him as a decoy to the canine ſpecies, of which he is remarkably fond, as if they were his favourite prey. Dogs are aſtoniſhingly afraid of this animal, but are ſecured from falling into his clutches (otherwiſe than inadvertently) by the ſtrong, muſky ſcent which he diffuſes to a very conſiderable diſtance round him, whenever he is repoſing on ſhore, and which gives them timely warning. After all, it does not appear that he is ſo tremendous a monſter as the ideas of timorous perſons have pictured him; ſince he is naturally a coward, diſqualified for quick purſuit, eaſily detected, and as eaſily avoided, except in the water, where there is ſurely no neceſſity to venture in his way.

NOXIOUS

NOXIOUS ANIMALS, or ſuch as are commonly ſo reputed.

315. SCORPION.

It is but of a ſmall ſize in this iſland; and the ſting not ſo venomous as is repreſented in the countries of the South-American continent, where it is found of much greater bulk. A ſcorpion was irritated to ſting a young cock on the ſide of the head ſeveral times ſucceſſively; but no effect was perceived to ariſe from it, not even to the exciting a ſwelling. Their venom is mortal to themſelves here, as in other parts of the world where they are found; and it is probably more virulent at ſome ſeaſons of the year than at others.

316. RED-TAILED SPIDER.

It is of a gloſſy jet-black all over, except the tail, which glows with a vivid red. It is extremely ſluggiſh and averſe to motion, even when diſturbed. It inhabits chiefly in holes of old walls, or decayed timber. A young, robuſt Negroe man happening to be ſtung by one, the venom irritated his nerves ſo much, as to throw him into convulſions, which were of no long continuance: upon being blooded and chafed, theſe ſymptoms left him; and he felt no further bad effect. The pindals-nut, bruiſed and applied as a poultice to the ſtung part, is eſteemed an antidote to the venom of both theſe inſects; but any other reſolutive oil or oily ſubſtance applied warm is equally efficacious.

317. TARANTULA.

I have heard of two ſpecies of this ſpider; but I am doubtful whether they were not, in fact, the male and female of the ſame ſpecies. I never had the opportunity of ſeeing any. Their qualities ſeem not to be known as yet with any degree of certainty, as they are very rarely to be met with. Browne ſays, the nip of the larger ſpecies is very painful for many hours; that it ſometimes cauſes a fever and deliriums, which are relievable with a draught of warm punch, to force a ſweat; and that the Negroes, who are moſt ſubject to ſuch accidents, are recovered in a few hours by uſing this ſimple remedy.

318. CENTIPES.

318. Centipes, or Scolopendra.

The centipes of Jamaica is not equal to the ſize of what are commonly obſerved at Carthagena. The nip of this reptile is not near ſo inflammatory as the ſting of a waſp; nor will it offend, unleſs firſt hurt, as I have experienced. It harbours moſt commonly in timber; and is believed to have been introduced hither originally among logwood, and other woods imported from the continent. But, if this is true, it has certainly degenerated in bulk, ſeldom exceeding five inches; whereas, at Carthagena, according to Ulloa, they are from a yard to a yard and a quarter in length.

319. Galliwasp.

The bite of this animal (which is ſomewhat of the lizard-make, and about twenty inches in length) was never known to be mortal; but the effects of it have frequently been exaſperated by terror, and the ridiculous method of cure. A Negroe, when bit by it, is inſtantly ſeized with the moſt diſmal apprehenſions, and haſtens with all his ſpeed to reach ſome piece of water, from a full perſuaſion, that, if the galliwaſp gets at it before him, he ſhall certainly die; but that, if he plunges in firſt, it will be fatal to the animal. This done, he cuts out the bitten part. It is but very ſeldom ſuch accidents can happen, as this creature is not only ſhy and timid, but infrequent. It ſkulks among rocks in deep woods; and never bites, unleſs when trod upon, or otherwiſe hurt. The conſequence to the Negroe is, that he is ſeized with a fever, which laſts a day or two. If, therefore, we conſider the violent agitation of mind and body, into which the patient throws himſelf after the bite, together with the ſeverity of the operation he performs upon the bitten part; we muſt be of opinion, that it would be very extraordinary, if a fever was not the certain and invariable conſequence.

Theſe animals, it is ſaid, have been ſometimes found in marſhy places; but I queſtion whether they ever take up their conſtant reſidence in ſuch places, as they ſeem to delight moſtly in rocky ſituations. If they enter marſhy ground, it is probably ſuch only as lies adjacent to looſe rocks, and in order to make an occaſional repaſt on the muſkeetos frequenting it.

Although

Although they have been vulgarly reputed moſt venomous creatures, yet there has not been one well-atteſted account, to prove that they are ſo in the ſmalleſt degree, more than other animals of equal ſize, ſuch as large rats, ferrets, &c. whoſe bite is ſevere, but not malignant.

The firſt voyagers held the very ſame opinion of the guana; and it prevailed a long time, till it became a favourite article of food, and, being by that means better known, was found by experience to be a poor, harmleſs animal. The forbidding appearance of theſe creatures, when firſt beheld by ſtrangers, has contributed chiefly to the prepoſſeſſion againſt them; nothing being more natural than to combine the idea of evil qualities with that of an ugly form of body. This opinion, being once eſtabliſhed and propagated, ſoon becomes implicitly received, and grows into a vulgar error, which gathers ſtrength from the fear impreſſed by the general idea, and cauſes moſt perſons rather to fly from ſuch animals, than ſeek them out for deciſive experiment. Much may likewiſe be charged to the ſtupid ignorance and ſuperſtition of the Negroes, as well as to the implicit credulity of others, who take every thing they hear upon truſt, and paſſively ſubmit to the impoſition, without giving themſelves the trouble of examining any further.

320. Vipers.

There are none yet diſcovered in this iſland.

321. { Black Snake. / Yellow Snake.

The bite of both is perfectly harmleſs, and free from venom. Their food conſiſts of rats, mice, young pigeons, chickens, eggs, and ſuch like. They ſeem to be endowed with voracious appetites; for a yellow ſnake has been known to ſwallow a whole neſt of hen's eggs entire and unbroken. They are frequently turned into corn-houſes, to free them from rats; and they do infinite ſervice among the cane-pieces in the ſame way: for this reaſon (as I have been informed) the planters, belonging to one of the ſmaller Windward iſles, imported a breed of them from the continent, in order to protect their canes from the depredation of vaſt numbers of rats, which

which had over-run the country. Some of the African Blacks, after they come to Jamaica, make the yellow ſnake a favourite part of their food, whenever they can catch it. They extract the fat from it by boiling, and uſe it inſtead of butter; but it is ſaid to render them ſcabby.

I have frequently handled them alive. They ſeem not prompt to bite, unleſs firſt provoked, and then with no more inconvenience than a mouſe. They are remarkably domeſtic, and have often been known to enter dwelling-houſes in the country parts, and take up their abode very peaceably for a long time, until every rat has either been devoured, or put to flight. They are alſo of a docile temper, and may eaſily be tamed. They are not ſhy, like ſeveral noxious reptiles; nor apt to retire at the ſight of a man; a circumſtance worth remarking in reſpect to animals in general, and which often diſtinguiſhes the friend from the foe.

321. Poison-Snake.

It is ſo called by the Negroes from fear only, and not from any known venomous qualities. One of this ſpecies being killed, a large bean, of about one inch in length, was found in its gullet whole and uncorroded; which ſeems to prove its food to be of the vegetable kind. This ſnake meaſured three feet and one inch in length. The yellow ſnake is the largeſt ſpecies in this iſland, ſome of them meaſuring fifteen or ſixteen feet in length.

322. Amphisbena, or Silver-Snake.

This curious reptile ſeldom exceeds ſixteen inches length. It is believed, by the Negroes, to be venomous, but without the leaſt foundation, for it is as harmleſs as an earth-worm. It is either very uncommon in the iſland, or very rarely ſeen.

323. Wasp.

This inſect differs but little, in ſize, form, and colour, from the European; and it is equally irritable, and apt to give annoyance upon the ſlighteſt provocation. They build ſmall, waxen neſts, or combs, in empty, deſerted houſes, ſuſpending them from the rafters of the roof. The cells are hexangular, and covered over one end with a varniſhed membrane, to defend them from the rain.

324. Honey Bee of Europe.

Theſe uſeful inſects were firſt introduced from England, and have multiplied ſo well, as to ſpread innumerable colonies over every part of the iſland, ſwarms of them being often found in hollow trees in the woods, in holes of rocks, or banks of earth, and other convenient retreats. Several perſons here keep apiaries, which ſupply them abundantly with honey for family-uſes, and wax for candles; and ſome families burn none other but their own manufacture. The honey is, in general, aromatic, delicious, and, like the Minorcan, always in a fluid ſtate. The honey produced on ſugar-plantations is not equal in flavour or quality to what is made in other parts; for the bees, when they can find a conſtant plenty of melaſſes in their neighbourhood, will not ramble in queſt of flowers, but make uſe of the ready-prepared ſyrup. The wax is commonly bleached here in the following manner. It is melted in boiling water over a fire; and, as it floats on the ſurface, it is taken off in very thin cakes by dipping-in a plate. When the whole is taken up in this manner, the cakes are laid in the ſunſhine, for two or three days, until the yellow tint is entirely diſcharged; after which, it is perfectly white, like virgin-wax, and fit for uſe.

A commodity, ſo cheaply produced, ſhould excite the inhabitants to extend the number of their apiaries. A moderate induſtry would furniſh them with ſufficient for their own conſumption; and, in time, with a ſuperfluity for export. It is an article annually remitted from the Carolinas to Great-Britain, and might with equal advantage be eſtabliſhed in this iſland.

325. Wild Bee.

This is much ſmaller than the European, and very frequent in all the South-ſide woods. It is remarkable for having no ſting; and is probably the ſame ſpecies ſo common in Guadaloupe. It builds in the hollow boughs of large trees, particularly the locuſt, and makes its comb, not with wax, but a compoſition of gum, and minute particles of tree-bark, worked into a browniſh paſte, or cement; which acquires, in time, the firm texture of *papier machée*, but thin, and therefore eaſily broken in the weaker parts. The

cells are pear-ſhaped, about the ſize of a bantam's egg, and filled with a moſt delicious honey, limpid as cryſtal, extremely odoriferous, and cordial. Theſe reſervoirs hang connected together in cluſters, and are ſo contrived, that each of them has a convenient aperture during the time of work, which is cloſed, or ſealed up, ſo ſoon as the meaſure is full. When the honey is required to be taken out, the cells, or bottles, are to be pierced a little way from the bottom, to avoid draining out the ſediment, which is viſcid and glutinous. This honey is gently ſolutive, the quantity of half a pint generally cauſing two or three evacuations downwards in as many hours, if taken upon an empty ſtomach; but, ſwallowed at meals, it has not this effect. It is, doubtleſs, applicable to very excellent purpoſes in medicine; and, as well as the other common honey produced in this iſland, may be kept for many years in bottles, without running into fermentation like that of Europe. The number of theſe uſeful, little inſects is greatly diminiſhed by birds and other animals, who conſtantly prey upon them; but they may be removed, hive and all, into the common apiary, with great ſafety, where they would be ſecured under ſome degree of protection.

326. { PEPPER-FLY. / SAND-FLY. }

Theſe are very troubleſome inſects, particularly in the neighbourhood of ſandy bays, on the South-ſide coaſt; but they are not ſo frequent in the interior parts, nor often riſe to the cooler mountains.

The firſt, if it happens to fall upon the tunicle of the eye, gives a very diſagreeable ſmarting pain, reſembling what is cauſed by pepper.

The ſecond aſſaults the hands and face; and, though extremely minute, its nip, or ſting, is ſenſibly felt; when the inſect that occaſioned it can hardly be diſcerned; though the effect is rather teazing than painful.

327. CIEGOE,

Otherwiſe called Chigoe, or Chigger, viewed through a microſcope, exactly reſembles a flea, and is a ſpecies of the ſame *genus*,

nus, but far more troubleſome. The Negroes, who come hither from Africa, are ſeldom free from it; and it ſeems uncertain, whether it is indigenous to this iſland, or propagated from importation. It lodges under the ſkin of the feet, and forms a little, round bag, of the ſize of pearl-barley, in which its eggs are depoſited. All this, however, is not performed without creating an intolerable itching in the part, which gives notice of the attempt to form a lodgement: in which caſe, it is thought adviſeable to extract it, with the bag, by carefully managing the point of a needle, to clear it without breaking the membrane; and the cavity is immediately filled up with tobacco-aſhes, which allay the itching, and prevent a ſore. Uncleanly perſons, or thoſe who ſeldom waſh their feet, are moſt frequently ſubject to this annoyance. They may be deſtroyed, without extracting, by the application of a cataplaſm, made with Caſtile ſoap and train-oil mixed; ſometimes a little aloes is added: a poultice, of pounded caſſada-root, anſwers the like purpoſe. But it is better to guard againſt their attacks by cleanlineſs, and forbearing to walk often in places ſtrewed with quick lime, or in ginger and potatoe grounds; which are their cuſtomary haunts.

328. Muskeeto.

Theſe gnats, of which two or three ſpecies are reckoned in this iſland, ſurpaſs all the other inſects here in the annoyance they give to the inhabitants of the lowlands. Their uſual time of ſallying forth, to attack mankind, is about ſun-ſet; and, from this time till the morning, they poſſeſs the greateſt activity. During the former part of the day, they are commonly torpid, and forced, by the violence of the breeze, to keep in their hiding-places. Yet they do not make their aſſaults without giving notice, with a kind of ſhrill hum, in the pitch-pipe tone *A*; ſo that, when a conſiderable number of them are aſſembled in a room, they perform a full concert; which affords but a melancholy preſage of the approaching onſet, and may be called their war-ſong. When they are ready to begin the attack, they deſcend gradually with a ſeeming caution; and, after wheeling in circles for ſome time, like birds of prey, dart down at once with a ſudden ſwoop upon any naked part of the body

body that preſents itſelf moſt favourably. In thoſe places where they are very numerous, as in the neighbourhood of water, it is neceſſary to guard againſt them by day, as well as in the night, eſpecially in calm weather, at which time they are eaſily diſturbed, and put in motion. In ſuch places, the uſual guard for the legs is the muſkeeto-boot, or a kind of half-trouzer, made of linen, tied above the knee, and reaching to the ſhoes; but, at night, they are kept off by a ſkreen of lawn, or gauze, which encloſes the bed inſtead of curtains, and, being tucked in on every ſide, prevents their entrance. Theſe muſkeeto-nets, as they are called, from having been uſed at firſt near the coaſt, and in the lowlands, are now grown into general uſe; and we obſerve them in thoſe elevated parts to which theſe inſects ſeldom, if ever, aſcend. But, although few parts of the iſland are totally free at all times from ſome, yet their ſwarms are far leſs numerous near the coaſt, than either on the coaſt of the North or South-American continent. The North-Americans are obliged to wear paper under their ſtockings, and wrapped round their legs. In the hot months, they are annually viſited with prodigious multitudes; whoſe ſting, or rather bite, is far more inflammatory than has been obſerved in this iſland, where, the pores being kept in a more uniform ſtate of relaxation, their puncture is made with more eaſe, and leſs ſeverity. So ſoon as one of theſe inſects has perched upon the hand or face, it ſhoots out its *proboſcis*, whoſe point is ſo fine, that it enters the pores, but continues penetrating very ſlowly till it reaches ſome one of thoſe delicate ramifications of the blood which circulate near the ſurface: the muſkeeto then begins to ſet its little pump, or tube, at work, firſt, by means of a well-diſpoſed mechaniſm, exhauſting it of the air contained in it; after which, the blood riſes according to the laws of hydroſtatics, and continues its aſcent in a full tide till this diminutive canibal is perfectly ſatiated, and its body dilated to ſuch a ſize, that it is ſcarcely able to withdraw its weapon and retire. The *proboſcis* enlarges, or ſwells, at the ſame time; inſomuch that, by drawing the ſkin tight, and ſo ſtraightening the orifice, I have ſeen them pinned down like a bear to a ſtake, and diſabled from eſcaping, notwithſtanding all their ſtruggles. If they are ſuffered to drink their fill without being molested,

lefted, they feldom raife any, or but a very flight degree of, inflammation; but, when fuddenly difturbed, or brufhed away, it is probable they wound or lacerate the part, by haftily extracting their *proboſcis*, and fo leave a fmall pimple, attended with an itching, which is foon removed by rubbing on a little lime-juice. The method, commonly practifed for difperfing them, is by making fmoak in the evening about the time when they affemble. They love dark rooms, and black complexions; which ferve to hide them from view: the Negroes of courfe are exceedingly annoyed with them, except in their huts, where the conftant cuftom of kindling a fire at night protects them during their hours of fleep. The fire-flies are natural enemies to the mufkeetos, and feed upon them. The Indians, having difcovered this, ufed to attract thefe flies with lighted torches; and, when they had caught a fufficient number, let them loofe in their huts at night, to drive the mufkeetos from their hammocks; which office they are faid to have performed very effectually. Thefe infects depofite their eggs indifferently in all ftagnant fluids. They even hatch in water ftrongly impregnated with quick-lime. Their young, or tadpoles, in their fmalleft ftate, are fo extremely minute, as to be fcarcely vifible to an unaffifted eye upon the clofeft view. The river-waters in general on the South-fide may be fufpected of containing their eggs, or young; but it is not probable, that they can exift a minute in the human ftomach. However, this, among other things, is a reafon why it may be proper to ftrain all fuch water through cloths before it is drank, in order to depurate it from thefe, or other animalcules, which may poffibly float in it unperceived by the eye. Kalm fays, thefe infects have a great averfion to greafe, and will not meddle with a fkin that is anointed with it; but fuch a remedy is nafty as well as unwholefome; though conftantly practifed by the bucaniers, who ufed to befmear their hands and faces with hog's-lard; to which they added the burning of tobacco leaves by night in their huts.

330. Cockroach.

This infect has a variety of names. In North-America it is called *mill-beetle*: the Dutch, fettled there, ftyle it *kackerlack*; the Swedes,

Swedes, *brodoëtas*, or bread-eater. Linnæus diſtinguiſhes it by the name of *blatta Orientalis*; for it is common to both the Indies. There are three ſpecies in Jamaica. The firſt is very ſcarce, of a green colour, and has been noticed only in the leeward parts of the iſland. The ſecond, which chiefly reſides in vaults and cellars, is of a very dark-brown colour; the belly black, with tranſverſe lines of white; it is longer than the Engliſh cock-chafers, torpid, inactive, and loathſome. The third ſort, which frequents the apartments of dwelling-houſes, is ſmaller, of a light-cheſnut, or reddiſh hue, with a very compreſſed body, which enables them to inſinuate themſelves into bureaus, boxes, and drawers, through very ſmall crevices. The cabinet-ware, made in England for exportation to this iſland, ought to be very cloſely paneled, ſcrewed at the back, top, and bottom, and of dry, well-ſeaſoned ſtuff: otherwiſe, when the wood comes to ſhrink, it will afford numerous apertures for the free paſſage of theſe inſects, who not only do a great deal of damage to cloths of all kinds, but impart to every thing they touch a moſt offenſive ſmell. They are fond of glutinous, or greaſy, ſubſtances; but will eat any thing, leather, parchment, linen, woolen, manna, and even Æthiops mineral; nothing comes amiſs. Nature ſeems to have given them ſcarcely any appearance of inſtinctive choice in ſelecting wholeſome, or rejecting noxious, aliment: for want of this ſagacity, they often fall victims to their ravenous appetite; and, indeed, if it were not for this, they would ſoon ſwarm in ſuch multitudes, as to become worſe plagues than any that infeſted the land of Egypt; for they are extremely tenacious of life, and, when cruſhed with the foot, are often ſeen crawling again, and dragging a trail of bowels after them. A ſcorpion, a houſe-ſpider, and a cock-roach, were put all together for experiment into a well-corked phial, and impriſoned till they died; but the cockroach ſurvived the longeſt. They lay a great number of eggs, which are of a wedge-like form, and covered with a firm, ſhining, brown integument: they generally faſten them to ſome ſubſtance; and they are not eaſily demoliſhed by other inſects. So wiſely are the ſcales of being ordered, that all creatures are checked in their redundancy; neither being ſuffered, on the one hand, to multiply beyond a certain allotted limit, nor,

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on the other, to be wholly annihilated by the casualties to which they are subject. These insects (I do not mean it as a proof of their good services) are remarkably covetous of pomatum and powder, which they nibble away very dextrously, and with them many hands-full of that bushy covering, ycleped a perriwig, scarcely having the manners to leave nine hairs on a side. Oft have the *venerable full-bottom*, the *sage tye*, and *respectable major*, fallen victims to the appetite of these ravenous creatures, and been utterly shorn of all their dignity, learning, and authority, in the short space of one night. Yet, notwithstanding such mischievous pranks, these domestics are not without their use: for they are exceedingly industrious in gleaning up such filth and nastiness, as the slovenly neglect of bad housewives has left in holes and corners undisturbed by the broom: they are, on this account, very necessary in such habitations in hot climates, where uncleanliness and sluttishness may generate putrid smells, and corrupted air, to the detriment of health. In houses of this class, they are always found in the greatest abundance, attracted by their favourite food, and proportioning their numbers to the quantity of scavenger's work necessary for them to perform; so that, if I was to address one of these housewives, it should be much in the style of Solomon, "Go to the *cockroach*, thou *slut*; consider her ways, and be "*cleanly*." They are not less fond of bugs, and frequently creep at night behind beds, in order to surprize and devour all the stragglers they can meet with. They seem to be full of volatile, urinous, and animal salts; and, I believe, a very strong spirit might be obtained from them, of use in hysterical cases. They are certain foretellers of rain or wind; previous to which, they are seen issuing from their lurking places behind loose pannels, or floors, in a violent hurry, and flying about in the utmost confusion. The larger grey house-spider, which carries its eggs in a white bag beneath its belly, is a natural enemy to the cockroaches, and feeds upon them.

331. Wood-Ants.

These are very singular insects. They build their nests, of very large diameter, generally upon some tree, or the rafters of deserted houses,

houſes. I have ſeen ſome near four feet in height, and eighteen inches thick, in the broadeſt ſection. They are pear-ſhaped, round, biggeſt in the upper part, and diminiſhing towards the bottom. They ſeem compoſed of particles of wood, and a reſinous ſubſtance, which hardens in the air, and is indiſſoluble in water; for no rain can penetrate into them. Theſe inſects never work abroad, but carry on their traverſes and approaches, to and from their habitation, under vaulted paſſages, which are covered with a cruſt, probably compoſed, in a great meaſure, of ſimilar materials. As each hive, or neſt, contains two ſets of differently-formed ants, it is probable that the diſtinctions are ſexual, as their occupations are ſomewhat different. Their living always ſecluded from the air has been thought to account for the white colour of their bodies, and tenderneſs of their ſkins. One claſs has a large, round, whitiſh head; but the head of the other is covered with a ſhining, dark-brown ſkin, of a horny ſubſtance, and pyri-form, being round where it joins the body, and terminating in a point. Upon breaking one of theſe cauſeways, a party immediately run to repair the breach, which they perform very expeditiouſly in the following manner. The former ſort apply their tails to the broken edge, and let fall a ſmall drop of glutinous matter, and, then withdrawing, make way for the others, who work it about with alternate motions of their head, as a maſon uſes his trowel, to incorporate and make it firmly adhere. Succeſſive labourers continue the work, till the hole is entirely cloſed up. This operation cannot be well obſerved without the aſſiſtance of a glaſs, and is equally curious and entertaining.

Theſe inſects are not very troubleſome, except in places newly-cleared from their native wood, in order to be ſettled. When they invade houſes, their track is conducted with ſo much art, as frequently to eſcape obſervation; and they often exhauſt the houſe-timbers of their ſubſtance, deſtroy old deeds, cloaths, and the like, when no ſuſpicion of their preſence has occaſioned any ſearch to be made for them. When they attack books, they generally eat through all the leaves, and beſmear the edges with their glue, or mortar, which prevents their being afterwards ſeparated without tearing.

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The uſual method of deſtroying them is by throwing a very ſmall portion of arſenic in at a hole made into their neſt, or covert-way, mixed with ſugar; which ſoon kills the whole ſociety.

They are excellent food for young poultry; and their neſts, burned to aſhes, yield a very fine and ſtrong *lixivium*, which might be made uſe of for many purpoſes. If the ſubſtance of the materials could be diſſolved by boiling in water, or maceration, I doubt not but it might be caſt in moulds, and adapted to a great variety of ingenious manufactures, as ſnuff-boxes, toothpick-caſes, toilet-boxes, and the like. It is likewiſe worth experimenting, whether a cold or hot infuſion in ſpirit of wine would ſoften it.

332. Sugar-Ant.

This minute inſect is to be found in moſt houſes, and ſeems to have a peculiar attachment to ſyrups, preſerves, and all ſugared dainties. In order to ſtop their march, it is uſual to ſet the feet of a table (upon which ſuch articles are laid) in little troughs, or pans, of water: but ſuch is their liquoriſh appetite, that many dozens periſh in attempting to croſs the water. If ſuch articles are kept in a ſafe, or ſuſpended ſhelf, an old wig, or a bottle, is fixed at the bottom of the cord. The entangled hairs of the former perplex their journey ſo much, that they rarely get to the end of it; and the glaſs is too ſlippery to afford them a paſſage.

333. Black Stinging Ant.

Theſe are moſt troubleſome in ſome of the country-houſes, where they frequently conſtruct their neſts under the floors, and endeavour to participate of the good cheer. They feed on fleſh, as well as vegetables, and will ſoon make a ſkeleton of the carcaſes of lizards, and other ſmall animals, placed near their haunt. This is the ſpecies which gave ſuch annoyance to the Spaniards, at their firſt ſettlement at Melilla, as to occaſion their removal. Their bite, or ſting, is very acute, though but momentarily painful. They are deſtroyed, like the wood-ant, by arſenic, mixed with ſugar, or ſyrup. Quickſilver is equally fatal to them.

334. Book-Worm.

The inſect, which gives birth to this worm, is of the ſmaller *ſcarabæus* kind, and is fond of depoſiting its eggs in books newly-bound.

bound. So ſoon as the little worm, or maggot, is hatched, it begins its depredations on the back-part of the binding, feeding upon the ſubſtance, and boring numerous holes. It afterwards proceeds in the ſame manner with the leaves, till they become a perfect fillagree. After it turns to a beetle, it retains a predilection in favour of the place of its nativity; and new broods ſucceed ſo long as any *pabulum* remains. Under the article *Aloes*, I have propoſed a method for ſecuring books from the eroſion of this creature; and it will not appear unimportant, on reflecting that very coſtly and valuable libraries have often been entirely deſtroyed by it in this iſland.

335. BIRDS, and ſome other Animals.

It is only my intention to give an account of ſuch as are moſt remarkable for their good or ill qualities, or ſingularities, that have not been already enumerated, or fully diſtinguiſhed, in other publications relative to this iſland.

336. Carrion-Crow.

This bird, at a ſmall diſtance, reſembles very much a wild turkey, and was miſtaken for it by the firſt navigators into the Weſt-Indies. It is of the vulture ſpecies, and extremely uſeful in this climate, where it contributes not a little to prevent the generation of malignant diſeaſes, ariſing from the putrefaction of dead animal bodies. On the firſt ſetting-in of the morning-breeze, it takes its ſtand upon ſome elevated place, as a houſe, or the uppermoſt bough of a decayed tree; where it holds its wings expanded for ſome time, and vibrating, as if to prepare for a cruize; then ſuddenly ſprings into the air, and, wheeling as it riſes, aſcends to an amazing height. It is endued with ſo keen a ſcent, that, after gaining a ſufficient elevation in the atmoſphere, it has been ſeen to fly directly to carrion, lying at a prodigious diſtance to the windward from it. Nature has given it an appetite ſo voracious, and a digeſtion ſo quick, that it is always either crammed very full, or it is extremely lank and empty. If a carcaſe is in the higheſt ſtate of putrefaction, it perſeveres in gormandizing till it is ſcarcely able to fly, but ſtands motionleſs, with its mouth wide-open, gaſping

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for breath, and its eyes ſtill riveted with inſatiable deſire upon the filthy remnants; like thoſe human Epicures, who, after ſtuffing themſelves up to the very top of the gullet with turtle or veniſon, have loſt the power of returning to the charge, yet retain an unabated craving for the ſcraps and offals ſtill in view. It is a moſt wonderful mechaniſm, that its ſtomach is capable of reſolving ſuch rotten ſubſtances into wholeſome nouriſhment. Experiments have ſhewn the antiſeptic power of the bark, acting by its ſtipticity on the fibres of putrid fleſh, and diſcharging it of its *fœtor* within a certain degree of corruption; but no material is hitherto diſcovered capable of ſweetening, and reſtoring the coheſion of, parts, where the fleſh is abſolutely decompoſed, and reduced by putrefaction into a kind of looſe pulp: yet the carrion-crows often devour it in this ſtate, and conſequently ſecrete in their ſtomachs ſome liquor of a peculiar quality, which alters the maſs received into them in ſuch a manner, as to extract a nutrimental chyle from it, even when it is ſuperlatively fœtid and corrupt.

Theſe birds may juſtly be ſtiled the living ſepulchres of departed beaſts, and execute that office without-doors which the rats and cockroaches perform within. If it were not for their beneficial aſſiſtance, it would be impoſſible to inhabit the South-ſide of this iſland during the time of ſevere droughts; when fodder becomes ſo ſcarce, that numbers of the working beaſts, impoveriſhed by hard labour in the courſe of the crop, periſh under every hedge, and ſo faſt, that it is impoſſible to bury their carcaſes. Some men likewiſe are ſo ſhamefully inattentive to the public health at ſuch times, that they will often leave the carcaſes ſtinking above ground, and infecting the air, rather than be at the pains of cauſing any of them to be burnt or interred. The crows hold their jubilee on theſe occaſions; and every day preſents them with a new feaſt, which they never quit till they have reduced the carcaſe to a ſkeleton.

They are alſo very ſerviceable in the towns, where they are ſo tame, that they may be ſeen every day perching upon the houſes, like pigeons, and alighting in the very ſtreets. In Kingſton, in particular, they may be remarked; and are undoubtedly attracted by the putrid ſmell of fowl and fiſh-guts, or other offals, which are careleſſly thrown into the ſtreets and yards, or on dung-heaps.

In the country parts they eat dead lizards, ſnakes, rats, or any other putrid fleſh, without ſeeming to prefer one ſpecies more than another. Sometimes they are known (when hunger preſſes, and their cuſtomary food is ſcarce) to ſnap up a young chicken, or duckling, juſt hatched.

They make no neſt, but depoſite their eggs (which rarely, if ever, exceed two) under ſome rock, or in a ſolitary part of the woods.

The cock birds frequently tread the hen poultry. When this happens, the gills of the hen turn gradually black, and look as if they were in a ſtate of mortification. She declines, ſickens, and is ſure to die very ſoon after. Whence it ſeems probable, that the ſeminal fluid of theſe birds has ſomething in it extremely acrimonious, and even poiſonous to the female organs of a different *genus*. It may partake of the purulence and mephitic quality of their food, and bring on a mortification.

A perſon, intending to play a trick upon one of his acquaintance, cauſed a carrion-crow to be plucked, roaſted, and ſerved-up at table; but the fleſh was ſo black, and the ſtench ſo intolerably offenſive, that it was impoſſible to paſs the deception upon any man who had not entirely loſt his faculties of ſight and ſmell.

There is ſomething extremely remarkable in regard to theſe birds; but it has been obſerved ſo repeatedly, that it may be deemed a characteriſtic. They cannot bear to be looked at, eſpecially after they are gorged with carrion: they hang down their heads to the very ground, and ſeem as if aſhamed of their filthy office, or of their immoderate gluttony. Dogs, who have gorged themſelves with the ſame dainty food, have often the ſame abaſhed, downcaſt look, when caught in the fact; and I do not queſtion, but this emotion, the reſult of inſtinct, is deſigned to convey a moral leſſon to man, and ſhew, in the picture exhibited by theſe animals, that ſuch a voracious indulgence is equally odious and degrading.

The ſoft down under the wings, or taken from the young birds, who are perfectly white, is uſeful for ſtopping the blood in freſh wounds.

337. *Bar-*

337. *Barbadoes* and *Savannah* BLACK-BIRDS.

Theſe birds may be ſpoken of together, as they naturally aſſociate; and, although of a different ſpecies, yet their food and manner of life being alike, they are inſeparable allies. The former is called in North America the *maize thief*, or purple jackdaw. They have ſome reſemblance to the daw of Europe, and are great devourers of corn and fruits; but they are very ſerviceable, at the ſame time, in devouring thoſe worms which prey on the corn, before it is ripe; they are likewiſe extremely fond of the ticks, which infeſt cattle, horſes, and ſheep. Theſe quadrupeds, as if ſenſible of their benefactors, very patiently ſuffer them to hop about their bodies, either when grazing, or lying down; the induſtrious birds (called for this reaſon *tick-eaters*) pick off all within their reach, and gulp them down with amazing vivacity. In February, and ſeveral of the ſucceeding months, they aſſemble in large flocks, towards evening, among the mangrove trees on the coaſt, to ſpend the night together. Immediately after their meeting, the whole ſhore is enlivened with the delightful harmony of their orcheſtra. Their note is ſomewhat like the creaking of an inn-keeper's ſign in a high wind, or the handle of a grind-ſtone; at other times it more reſembles the gentle ſqueak which may be formed by means of a comb and paper. They vary frequently both the key and the tone, making altogether a very whimſical kind of concert, or medley of queer ſounds, which have more of *recitativo* than *air* in them; and, after all, may poſſibly be nothing more than a muſical confabulation on the ſubject of their preceding adventures. A wild-pigeon ſometimes mingles his pipe with theſe birds, by way of German flute, amongſt a numerous band of violins.

In regard to their general character, I have no doubt, but the ſervice they render to the young corn, by deſtroying the worm, and to cattle, by devouring the tick, compenſates very fully for the little ſhare of the ripe grain they are able to purloin. In ſome of the North American provinces theſe birds were proſcribed by the legiſlature, and rewards granted for killing them; but ſince their number has been thinned almoſt to extirpation, the inhabitants have diſcovered, that the corn-worm, which they uſed to feed upon, has committed infinitely worſe ravages.

338. SING-

338. Singing Birds.

There are but few of thefe vocal performers natives of the ifland. The chief are the nightingales; of thefe are two fpecies. One is more properly the *mock-bird* of North America, and is not fo frequent as the other. It is principally feen in all parts of the Healthfhire Hills, and probably delights in this diftrict, becaufe it is almoft uninhabited by men, or becaufe it finds here greater plenty of its choiceft food. Its plumage is of a light-brown colour, inclining to reddifh, and a few dark feathers in the wings and tail. It is much larger, particularly about the head, than the other fpecies, but equally bold. The other fpecies is the leffer mock-bird of Edwards, t. 78, and is found in moft parts of the ifland, efpecially the low lands. Their note is a compofition of the thrufh, black-bird, and European nightingale; but it has the neareft refemblance to the thrufh, and is infinitely fweet, ftrong, and various. Every morning and evening they warble their melody, and enliven the rural retirements, anfwering each other with their inchanting echoes, and to fuch a degree of exactnefs in the key and inflections, that, although perched at a confiderable diftance from tree to tree, it is very often difficult to diftinguifh between them, except from the more articulate tones of that whofe ftation is neareft to the hearer. At certain times of the year they fing during great part of the night, efpecially when it is moonlight. It is not certain, whether they are kept fo wakeful by the clearnefs of the light, or by any extraordinary attention and vigilance, neceffary at fuch times, for the protection of their nurfery from the piratical affaults of the owl and night-hawk. It is poffible, that fear may operate upon them, much in the fame manner as it has been obferved to affect fome cowardly perfons, who whiftle ftoutly in a lonefome place, while their mind is agitated with the terror of thieves or hobgoblins.

When taken young, they may be kept in a cage; but will not long furvive their captivity, unlefs they are fed with the hoop-withe berry, and the fmall-bird pepper, mixed together.

Thefe birds are feen throughout the fummer in the North American colonies; but, about autumn, retire to the Southward, and ftay away the whole winter.

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They doubtleſs take their rout towards Florida; and in very ſeverwinters croſs, like many other birds of the continent, to Cuba and Jamaica; where they breed.

339. Black-bird.

This is commonly called here the *two-penny chick.* It builds on the branches of the plantane tree, and is not obſerved to lay more than two eggs. It is a very fearleſs, tame bird, and perks up its head and tail as it hops along the ground, like the Engliſh blackbird, whoſe wild note it ſeems to imitate very much in its ſong, as it reſembles nearly in ſize and make. Its young are callow about the end of June.

340. Fly-catcher, or Whip-tom-kelly.

This bird is common alſo to the continent, from whence it probably makes an annual emigration. It has only a few notes; but they are loud and ſweet.

341. Banana Bird.

This beautiful bird is a native, and builds its neſt with the fibres of the *Renealmia*, or old-man's-beard, curiouſly interwoven, and ſuſpended above from the twig of ſome tree, generally the larger ebony. It has a ſweet delicate note, and is eaſily tamed.

The bird-fanciers of this iſland reject the native choiriſters; but are at great expence in importing the cardinal from South Carolina, and the gold-finch, canary-bird, and linnet, from England. The gold-finch of Jamaica reſembles the Engliſh in ſize and plumage, but it is not eſteemed a bird of ſong.

342. Humming Birds.

Here are four different ſpecies. The ſmalleſt is much admired for the gracility of its frame, lovely plumage, and the delicate ſtructure of its neſt, which is commonly built on a ſmall twig of the orange tree. They flit with ſuch velocity, whilſt they are ſucking the *nectareum* of a flower, or bloſſom, that their wings are intirely imperceptible, and their paſſage from one flower to another reſembles more the quick dart-

ing of a large fly, than the ſkimming of a bird. They ſeem the contiguous link which joins the bird and inſect ſpecies.

343. Blue Mackaw.
Jamaica Parrot.
Smaller-green Parrot.
Red-breasted Parroquet.
Green Parroquet.

Theſe are all natives, and too generally known to need any deſcription.

344. Gabling Crow.

This is a native. It is perfectly black, and about the ſize of the Engliſh crow. It is remarkably ſhy, and rarely heard or ſeen, except in the lonely woods of the midland diſtricts. When a flock of them aſſemble together, they are diverting enough to a traveler, with their ſtrange, noiſy gabble of guttural ſounds, which imitate ſome human languages, and are thought to have much the confuſed vociferation of a parcel of Welſh folks exerciſing their lungs and tongues at a grand ſcolding match; hence theſe birds have been nick-named the *Welſhmen.* The ſtructure of their organs of voice adapt them probably to articulate words in a manner more correct and exact than any of the parrot kind; but they ſhun the ſociety of mankind with ſo much caution, that it would be no eaſy matter to come at their young, and train them up for the experiment.

QUADRUPEDS.

345. Horse.

The horſes here are of various breeds; Morocco, Spaniſh, Britiſh, and North American. They degenerate in bulk, but improve in beauty of ſhape. The natives are, for the moſt part, well-made, clean-limbed, hardy, of great ſpeed and ſtrength, and fit either for draught or ſaddle. Though their bones are ſlender, their ſinews are exceedingly firm, ſo that they are capable of drawing very heavy coaches with a ſurprizing activity, and of undergoing very long journies with great expedition, and indifferent fare. They are ſubject to fewer

diſtempers than the imported horſes, and their hoofs are naturally ſo tough and compact, that ſhoes are ſeldom found neceſſary for them, even in rocky roads.

The wild breed, deſcended from the Spaniſh gennets, obſerved here in D'oyley's time, and very numerous in the woody parts of the low-lands, are diminutive and worthleſs. The wild cattle, on the contrary, are remarkably large and beautiful; a difference not eaſy to be accounted for, as the latter ſeem to require a richer paſturage for enlarging their bulk, than what they are able to meet with in thoſe places where they are moſt abundant; perhaps it may be owing to the vicious propenſity of the ſtallions, who begin to cover when they are not more than half-grown; and, by thus early conſuming their vigour, become incapable of begetting any other than a puny offſpring.

The general ſtandard of the Creole horſes is from thirteen and an half to fourteen hands. In order to mend the breed, ſome perſons have thought, that a very high tax ſhould be impoſed, by act of aſſembly, upon all ſtone-horſes, three years old, under fourteen hands. Perhaps a tax of 10 or 15*l.* *per* head *per annum*, and a penalty of the like amount, payable by the owner, beſides forfeiture of the horſe, upon conviction of any ſuch, omitted to be regularly given in at the veſtries, might anſwer the purpoſe ſo well as to put a ſtop, in a few years, to this diminutive breed; encouragement being given, at the ſame time, to import large ſtallions and mares from Europe and North America. By an act paſſed in 1759, all ſtone-horſes, under fourteen hands, three years old, and running on the commons, are ordered to be caſtrated; but this act extends not to horſes breaking out of any ſtable or incloſed paſture. A premium of 10*l.* is granted upon every ſtone-horſe, or mare, fifteen hands high, and not exceeding five years old, imported from *England*. Horſes imported from Ireland, or North-America, are not included. This act, with ſome amendments, could not fail of producing a very good effect.

346. Ass.

The fineſt aſſes for breeding mules are brought hither from Spain and Portugal. They degenerate in the low lands; but the native breed,

if carried very young to the rich Guiney grafs paftures of the mountains, attain to a large growth, and produce almoft equally good mules.

347. Camel.

Thefe animals were originally bred here, with a view of carrying fugar and rum to the market, inftead of mules. Great expectations were formed from this project, as the camel was known to be far more docile and tractable, and equal to bear much heavier burthens; but, upon trial, it appeared, that the roads were much too rocky for their hoof; that the hills were too fteep, and that nature had defigned them only for extenfive and level fandy defarts. They anfwer no other purpofe here at prefent, than that of terrifying horfes traveling the roads, and caufing the overturn of carriages now and then. The humanity of their owners preferves them from extirpation, though at the hazard of many a man's neck. The young ones are faid to be good meat, and often ufed as fuch by the inhabitants of thofe countries where they are more common; but the epicures of Jamaica have not yet thought proper to introduce this Afiatic dainty into their bill of fare.

They attain here to their full growth; and fome advantage might doubtlefs be made, by annually fhearing their hair, at the time when it has the longeft ftaple, in December, or January; at prefent, they are the moft ufelefs animals belonging to this ifland.

348. Dog.

The Englifh breeds, introduced here, degenerate in fize, but feem to lofe no part of their more peculiar character, whether it confifts in courage or fagacity. The moft ufeful of the race are thofe belonging to the hog-hunters; they feem to be a mongrel mixture between the maftiff and greyhound, fwift and fierce; the brindled are efteemed the beft. Thofe of the Spanifh breed poffefs the like qualities, are much taller, and have more of the greyhound make. The Negroes dread them as much as the Indians formerly did, when the Spaniards made ufe of them for purfuit.

I have feen feveral of the Guiney-breed here. They are about the fize of turn-fpits, of a jet-black colour, and cloathed with a fleek fhining fkin, without a fingle hair; their appearance is extremely fingular,

ſingular, loathſome, and diſagreeable; yet they are conſidered as a great dainty in Guiney, and are ſaid to conſtitute a principal part of food among the inhabitants of *Benin*, and other provinces.

It is a remarkable circumſtance, that madneſs in dogs is almoſt unknown in this iſland, and other parts of America.

349. Rat.

Four different ſpecies infeſt this iſland. The largeſt is commonly called the *Charles-price* rat, and obtained its name from having been firſt obſerved here about the time when the late Sir Charles Price, Baronet, returned hither from Europe. It is ſaid to have been imported by a Daniſh ſhip belonging to Sancta Croix, which was driven into Kingſton harbour by ſtreſs of weather. By whatever means they firſt got introduction, it is certain the breed multiplied ſo faſt, as very ſoon to ſpread over the whole iſland, where they are now grown exceedingly numerous and troubleſome; dieting chiefly upon fowls, eggs, and young poultry. They are no other than the water-rat of Europe, but grow to a larger bulk in general; for I have ſeen ſome that meaſured eighteen inches from the ſnout to the extremity of the tail. They are amphibious, and found in holes on the banks of rivers, and the ſides of ponds. They burrow like rabbits, and generally make their neſts under ground, though I have ſometimes found them in tufts of long graſs. As the ſtock-houſes, where poultry are kept are moſtly built in a ſlight manner, with wattles plaiſtered, theſe animals perforate a long way juſt below the ſurface of the earth, and paſſing under the loweſt wattles, to the inner part of the houſe, always take care to emerge behind a box, a hen-coop, or ſome other concealment, from whence they ſally forth in the night-time, ſeeking what they may devour.

I found a neſt once with nineteen young ones; they breed as frequently as the rabbit, and hence ſome judgement may be formed of their prodigious increaſe. Some have ſuppoſed that they are carnivorous only, and not granivorous; but it is certain that they eat corn of every ſort, dried roots, and canes. They take the ſame delight as the jackdaw in ſtealing and hiding ſubſtances, which they are utterly incapable of applying to any uſe; ſo that in their haunts or repo-

ſitories have ſometimes been found tea-ſpoons, thimbles, leaden bullets, coat and ſleeve buttons, beads, and the like. This paſſion for hoarding is very unaccountable, as they ſeem to poſſeſs too much natural cunning not to know the difference between any ſuch ſubſtances, and others that are proper for food. They are ſaid to devour the black-houſe rat; in proof of which it has been remarked, that the latter are not near ſo numerous as they uſed to be before the arrival of theſe foreigners. Their moſt favourite aliment, however, ſeems to be fiſh; ſo that, whenever it is intended to deſtroy them by poiſon, there is no bait ſo effectual as ſprats, or other ſmall fry, well impregnated with arſenic, mixed, for better diſguiſe, with a ſmall quantity of dripping-fat, or butter, and laid near their haunts. Browne has claſſed this ſpecies with the beaver, calling it *Caſtor*; but there is very little analogy between them, either in ſtructure, food, or manner of living. It is true, the tail of this rat is thicker and ſhorter than that of the other ſpecies, and without hair; its feet are webbed; its teeth are long, yellow, and like thoſe of the ſquirrel. It is fond of fiſh, and amphibious; that is, it is furniſhed with means of ſeeking its prey in the water, as well as upon land; but does not, like the beaver, take up its conſtant abode near the water; in ſhort, it might, with equal reaſon, have been claſſed with the alligator. The black houſe-rat was originally brought hither from England with the ſhipping. There are abundance of them wild in the woods, where they make their neſts in thick ſhrubby trees. I have frequently ſeen them on the branches, and once found a neſt, conſtructed ſomewhat like the Engliſh magpy's, coated with clay on the inſide, lined with moſs, and roofed at top with ſmall twigs, dried graſs, and other like materials, adapted to keep out the rain. Theſe particulars ſeem to give the rat-kind ſome affinity to the ſquirrel; and their tail, in fact, conſtitutes the eſſential difference between them, conſidered in their ſtate of nature. The two other ſpecies are probably indigenous to the iſland, and are both what are called field-rats, in contradiſtinction to thoſe which are domeſtic. The larger is of a light-aſh, or greyiſh colour, on the back, and other parts, except the belly, which is intirely white. This ſubſiſts almoſt wholly upon the ſugar-cane, and therefore generally termed the *cane-rat*; from the nature of its food the fleſh acquires a luſcious and very delicate flavour, as I am informed by thoſe who have eaten them; when

when roaſted; but they are not an artiele of food with the white inhabitants, though highly eſteemed among the plantation Negroes, who ſpit half a dozen of them at a time, upon a long ſkewer, and broil them in this manner on their fires, leaving their heads on, but always cutting off the tail, cloſe to the rump, which they think is not proper to be eaten. Their horrid appearance on the Negroe ſpits is ſufficient to diſguſt moſt perſons who have the ſmalleſt delicacy of ſtomach; but the Negroes are happily affected with ſo little prejudice or nicety in their food, that they will eat every other ſpecies of rats with equal indifference, and even cats, which, they alledge, are not at all inferior in taſte and goodneſs to rabbits.

The fourth ſpecies is much ſmaller than the former, being in bulk no larger than an Engliſh mole. It is of a beautiful reddiſh colour, with a milk-white belly; the ſkin would anſwer the ſame purpoſes of dreſs, as thoſe of the North American ſquirrel. This is likewiſe a field rat, and, like the other, takes up its habitation chiefly about the hollow roots of large trees, and the rocky acclivities of gullies, and river banks. It is far from being numerous, and it is probable, that it either does not bring forth ſo many young ones at a litter as the other ſpecies; or, being weaker, and leſs able to defend itſelf, more often falls a prey to ſnakes, owls, and its other enemies. All theſe different ſpecies agree, in committing moſt dreadful havock on neglected, foul cane-ſpieces. I have ſeen a viſto, of about fourteen feet in breadth, cut by theſe animals through a large cane piece, almoſt in as a ſtrait line, as if it had been purpoſely done with a reap-hook. They gnawed all the canes nearly through, at the bottom, and laid them flat; no fewer than a numerous army of them could have been employed in this miſchievous work, which they effected in the ſpace of one night. When the canes are thus bitten, and left on the ground, the wounded parts afford a *nidus* for ſome inſect to depoſite its eggs; the animalcules produced from them feeding afterwrds upon the juices of the plant, the circumjacent parts acquire a fine crimſon hue, but the cane withers, the remaining juice turns ſour, and becomes totally unfit for making ſugar, though it is often fermented and diſtilled into rum.

The Negroe rat-catchers are very expert at their buſineſs: their trap very much reſembles a ſmall ſtrawberry baſket; an elaſtic piece of ſtick, like what is uſed in the Engliſh mole trap, is fixed into one end of

of it, the other end of the ſtick, having a nooſe made of ſtrong twine, is bent ſo as almoſt to touch the trap; the nooſe is conducted to the inſide, and the twine hitched by means of a ſmall peg ſo diſpoſed, that, in approaching the bait, the rat is forced to diſplace it; the ſtick is then ſet at liberty to recoil, and the rat, being caught in the nooſe, is inſtantly ſqueezed to death. This trade is very profitable; for, over and above a ſtated reward of rum for a certain number of tails, the bodies are ſold among the other Negroes: ſome of theſe rat-catchers are ſo ſkilful as to take a thouſand *per* week, ſo that the Turkiſh baſhas of ten tails make no figure, when compared with theſe ſable baſhas of ten hundred. Nor is this their ſole advantage; the emoluments they earn are of ſuch importance, as to recommend them ſtrongly to the favourable opinion of the black ladies, who emulate each other in their careſſes, with a view to participate either of the capture, or the profits ariſing from it.

The terriers, particularly thoſe of Scotland, would be found very uſeful here, in tracking and digging out the firſt-mentioned ſpecies, or water-rat; and, by deſtroying the females, their numbers might in time be leſſened; though it is now impoſſible to extirpate them entirely by any method; even when they are well cleared by poiſoning from one plantation, new colonies very ſoon arrive from the neighbouring woods and eſtates to ſupply their place, and generate a new ſtock of free-booters.

The firſt and ſecond ſpecies, which are beſt diſtinguiſhed by the name of domeſtic rats, are certain prognoſticators of rainy or blowing weather, when they are more than ordinarily noiſy and active about dwelling-houſes. They haſten thither for ſhelter about twenty-four hours before the change happens, and leave them again after the weather grows fair.

CHAP.

CHAP. IX.

SECT. I.

350. *A* CATALOGUE *of ſuch foreign Plants as might be introduced, and cultivated, in* JAMAICA, *with great propriety.*

RUBIA Peregrina.	Lin. Sp. 2d edit. p. 158.	Turkey Madder.	This is ſuppoſed to be the ſame that is now cultivated in Smyrna for a crimſon dye.
Quercus Galliſera.	Parkinſon, 1386.	Gall-bearing Oak.	Galls from Aleppo and Smyrna.
Carthamus Tinctorius.	Lin. Sp. 1162.	Safflower.	This grows in Egypt, and is much uſed in dyeing. A ſpecies of it, brought into Jamaica by the Jews, for an ingredient in their ſoups, thrives well. *Br. p.*
Piſtachia Vera.	p. 1454.	Piſtachia Vera.	They are propagated at Aleppo, where the female, or fruit-bearing ones, are ingrafted on ſtocks raiſed from the nuts.
Styrax Officinale.	p. 635.	Gum Storax Tree.	This is ſuppoſed the ſame as the copal or copalm tree, which grows on the continent; but I take it to be the ococal, or gum *matricalis*, of New Spain.
Papaver Somniferum.	p. 726.	True Opium Poppy.	The ſeed might be obtained from Turkey.
Caranna, *Tacamahaca.*	Piſo, 126. Pomet, 197.	Caranna, Tachamahac.	The trees producing theſe gums grow in New Spain.
Sandaracha.		Sandarach.	This comes from Afric.
Balſam. Peruvianum.	Daſe, 337.	Balſ. Peruv.	New Spain and Braſil.
Balſam. Tolutanum.	p. 549.	Balſ. Tolu.	New Spain and Braſil.
Capivi.	p. 557.	Balſ. Copaiba.	New Spain and Braſil.
Croton Sebiferum.	p. 1425.	Tallow Tree.	Grows in China, and introduced into Jamaica by Mr. Ellis, where it is now growing.
Laurus Cinnamomum.	p. 528.	Cinnamon Tree.	In Guadaloupe, and Martinico.
Laurus Camphora.	p. 528.	Camphor Tree.	In Sumatra, and ſome Engliſh Green-houſes.
Cycas Circinnalis.	p. 1658.	Sago Palm.	In Java, and the warmeſt parts of the Eaſt Indies.
Caſſina.	L. Gen. Pl. p. 333.	Caſſine, Caſſioberry, or Paraguay Tea-plant.	This grows in Braſil, and is ſuppoſed the ſame as that of Carolina, and the adjacent Southern colonies.
Arundo Bambu.	L. Sp. p. 120.	Bamboo Cane.	This is already introduced into the iſland, as has been mentioned, but deſerves a more general cultivation.
Anacardus Orientalis.	Kæmpfer Amæn. p. 793.	Siam Varniſh, or Tonrack.	This is thought to be a different ſpecies from the caſhew tree of the Weſt Indies. The fruit of it is the *Malacca bean*, or Oriental *anacardium* of the ſhops. The tree yields the varniſh commonly uſed in the Eaſt Indies.

Thea.

Thea.	p. 734.	Tea.	The feeds of the tea plant would probably grow well in any of the mountain settlements.
Magnifera Indica.	p. 290.	East India Mango.	Called in China *quacinao*, and in Java *po*. It is said, there is a tree now growing in the island of Madeira.
Morus Papyrifera.	p. 1399.	Paper Mulberry Tree.	Used for making paper in China, and Japan. It has been sometime in the English gardens.
Quinquina.	p. 244.	Jesuit's Bark, or Cascarilla de Loja.	This grows in great abundance at Loja or Loxa, and Cuenca in Peru; and could it be obtained, so as to be cultivated in this island, it would be of infinite advantage, either in respect to consumption, or for export.
Jalapium.	Dale, 183.	True Jalap.	This might be obtained from Mexico, or Peru.
Mimosa Senegal.	p. 1506.	Gum Senegal, or Sanhaga.	This grows in Egypt and Senegal.
Mimosa Nilotica.	p. 1506.	Gum Arabic.	In Egypt; and would, doubtless, grow well here, where we have a species of it in too great abundance.
Fraxinus Ornus.	p. 1510.	Calabrian Manna Ash.	This is worth trying in Jamaica, as it bears a very hot sun. It is common in the English nursery gardens.
Amygdalus Communis.	p. 677.	Sweet Almond.	It is thought this would grow to great perfection in our West India islands. There are two or three trees in Jamaica; but it might be propagated there more extensively.
Capparis Spinosa.	p. 720.	Caper Tree.	This shrub requires a rocky soil. It grows about Marseilles and Toulon.
Lichen Rocella.	p. 1622.	Argal, Canary Weed, or Orchelle.	This is a species of moss, which affords a valuable red dye. Mr. Osbeck says, it was sold at Leghorn at 11 *d.* sterling *per* pound. It grows in the Cape de Verd, and Canary Islands, particularly Teneriffe, from whence it might be easily procured for experiment.
Amomum Cardamomum.	p. 2.	Cardamoms.	East Indies.
Curcuma Longa.	p. 3.	Turmerick.	East Indies.
Pastinaca Opoponax.	p. 376.	Gum Opoponax.	Sicily.
Cucumis Colycinthis.	p. 1435.	Coloquintida, or Bitter-apple.	Africa.
Pimpinella Anisum.	p. 379.	Anise Seed.	Egypt.
Ammoniacum.	Dale, 119.	Gum Ammoniac.	Africa.
Olibanum Thusmasculum.	Dale, 348.	Frankincense.	Upper Egypt, and interior parts of Africa.
Nux Moschata Orient.	Dale, 302.	Nutmeg with Mace.	In Amboyna. A young tree is said to be now growing in Jamaica, but the spot of its growth is kept a secret by the proprietor. A species grows naturally in Tobago, which may be worth introduction.
Caryophyllus Aromaticus.	Lin. Sp. 735.	Clove.	Molucca Islands.
Piper Nigrum.	p. 40.	Black Pepper.	Sumatra.

Garcinia

Garcinia Monga Stona.	p. 635.	Mangosteen.	A most delicious fruit, growing in Java, and several parts of the East Indies.
Ipecacuanha.	Dale, 170.	True Ipecacuan.	Brasil. Very deserving of propagation here.
Lonicera Symphoricarpos.	Clayt.	St. Peter's honeysuckle.	Carolina and Virginia. Its root pounded, and taken in a moderate dose, is an infallible remedy against intermittent fevers.
Myrica Cerifera.	Catesb. I. t. 13.	Candle-berry Myrtle.	The berries are used in many parts of North America, to extract a wax for candles, by infusion in boiling water.
Panax quinque folium.		Ginseng root.	This is common to Virginia, Pennsylvania, Louisiana, and Canada.
Sassafras Laurus.	Piso, p. 146.	Sassafras.	It grows in great plenty in East Florida, and about St. Augustine.
Bread-fruit of the South Sea.			East Indies, and George's Island.
Luktau.			This is a small species of *phaseolus*, or kidney-bean, growing in China, and lately introduced by Mr. Samuel Bowen into Georgia, from whence the seeds might easily be obtained. He says, that where grass is scarce, this furnishes an excellent fodder for cattle, as it may easily be made into hay; that it rises from 18 inches to 2 feet high, and produces four crops in the year; it is therefore very deserving of a trial in different parts of Jamaica, as there are some, no doubt, where it might be found to thrive extremely well.

351. PREMIUMS *offered by the* SOCIETY OF ARTS *in* London *for the Advantage of the British American Colonies.*

AMERICAN COTTON.

For the best specimen, not less than ten pounds, of cotton produced in the British dominions in America, equal to the fine Brasilian cotton; to be produced, with certificates of the place of growth, on or before the first Tuesday in January, 1774; the *gold medal.*

The same premium is extended to the year 1775.

ANOTTO.

For the greatest quantity, not less than two tons, equal to the best imported, produced in his Majesty's dominions in America, and imported into the port of London in the year 1773; 50*l.*

Certificates of the production, under the hands of some persons of known character residing near the place, and of the importation from the proper officers of the customs in the port of London, with specimens

mens of ten pounds weight, taken out of the whole parcel, to be produced to the ſociety, on or before the firſt Tueſday in April, 1774.

The like premium for any quantity, not leſs than 500 lb. weight, equal to the beſt imported.

The ſame premium is extended to the year 1774, and certificates to be delivered on or before the firſt Tueſday in April, 1775.

For the beſt ſpecimen of anotto, not leſs than ſix pounds weight, equal to the beſt Spaniſh anotto, to be produced to the ſociety, with certificates of the place of growth, on or before the end of the year 1773; the *gold medal.*

The ſame premium, on the ſame conditions, is extended to the year 1774.

Indigo.

For the beſt ſpecimen of indigo made in his Majeſty's dominions in America, equal to Guatimala indigo, not leſs than four pounds, to be produced to the ſociety, with certificates of the place where it was made, and an account of the culture and proceſs; the *gold medal.* This is extended to 1775.

Zebra Wood.

For the greateſt quantity, not leſs than ſix thouſand ſuperficial feet, of the variegated wood proper for fineering, called zebra wood [*a*], imported into the port of London; the *gold medal.*

The ſpecimen to conſiſt of not leſs than 200 ſuperficial feet. This premium is extended to the year 1774.

Moſſes, Plants, Barks, and Berries.

For a ſpecimen, not leſs than 20 lb. weight, of the beſt ſort of moſs, of the growth of America, and there known to be of uſe in dyeing, but not yet introduced into Great Britain; 10*l.*

The ſame premium is offered, on the ſame conditions, for plants, barks, or berries ſeverally, and extended to the year 1774.

Barilla, or Kelp.

For the greateſt quantity of merchantable barilla, not leſs than ten hundred weight, made in any part of his Majeſty's dominions in America, and imported into any port in England; 15*l.*

[*a*] The ſpecies here meant, is what comes from the *Moſquito Shore.*

For the next greateſt quantity, not leſs than eight hundred weight, 10 *l.*

Samples, to conſiſt of not leſs than fifty pounds weight, with the proper certificates. This premium is extended to the year 1775.

Camphor Tree.

To the perſon who ſhall cultivate, in any part of his Majeſty's dominions in the Weſt Indies, the greateſt number, not leſs than 25, of the trees which produce camphor, in the Eaſt Indies; the *gold medal*, or 50 *l.*

Certificates, under the hand of the governor, lieutenant governor, or chief magiſtrate of the iſland, ſpecifying the number of plants, and that they are in a growing or thriving ſtate, together with a branch of the tree, and ſome of the leaves, to be produced to the ſociety, on or before the ſecond Tueſday in November, 1776.

Quinquina, or Peruvian Bark.

To the perſon who ſhall introduce into any of his Majeſty's dominions in the Weſt Indies, the greateſt number, not leſs than ten, of the *quinquina*, or that tree which yields the Peruvian or Jeſuit's bark, on or before the firſt day of January, 1776; 50 *l.* The certificates ſubject to the ſame conditions as in the preceding article.

352.

The preceding catalogue [*b*] is chiefly extracted from the pamphlet publiſhed by John Ellis, Eſq; F.R.S., who has likewiſe given ſome uſeful directions for the tranſportation of plants and ſeeds from one country to another. As theſe may be conſidered ſupplemental to the catalogue, I ſhall tranſcribe ſuch as appear moſt uſeful, and add ſuch others as I find recommended by thoſe who, by experience, have been taught to practiſe them with the happieſt ſucceſs.

In the firſt place, it ought to be carefully attended to, that the ſeeds ſhould be perfectly ripe when they are gathered, and they ſhould be gathered in dry weather; afterwards they ſhould be ſpread thin upon paper or mats, in a dry airy room, but not in ſunſhine. The time neceſſary for drying them, will vary according to the climate, and ſeaſon of the year; but the hotter the ſeaſon, the leſs time will ſuffice.

[*b*] Viz. N°. 350.

There are two methods which have ſucceeded in bringing over the ſeeds of the China tea plant to Great Britain, and may ſerve alſo for the ſeeds of other valuable plants. The firſt is, by covering them with bees wax, after due precaution. It principally conſiſts in chooſing only ſuch ſeeds as are perfectly ſound and ripe; thoſe that are outwardly defective, or marked with the puncture of inſects, muſt be laid aſide. When a proper choice is made of them, they ſhould be wiped extremely clean, to prevent any dirt or moiſture being incloſed; each ſeed ſhould then be rolled up carefully in a coat of ſoft bees wax, half an inch thick; the deep-yellow Engliſh bees wax is the beſt. When you have covered the number you intend to incloſe, pour ſome of this bees wax, melted into a chip box of ſix or ſeven inches long, four broad, and three deep, till it is above half full; and juſt before it begins to harden, while it is yet fluid, put in the ſeeds you have rolled up, in rows, till the box is near full; then pour over them ſome more wax, while it is juſt fluid, taking care, when it is cold, to ſtop all the cracks or chinks (that may have proceeded from the ſhrinking of the wax) with ſome very ſoft wax; then put on the cover of the box, and keep it in a cool airy place.

In order to preſerve ſeeds from growing rancid from their long confinement in the voyage in hot weather, they may be put up in ſeparate papers, with fine ſand among them, to abſorb any moiſture. Theſe papers ſhould be packed cloſe in cylindrical glaſs, or earthen veſſels, and the mouths covered with a bladder tied faſt round the rims. The veſſels are then to be put into other veſſels, ſo large that the inner one may be covered on all ſides for the ſpace of two inches, with the following mixture of ſalts; half, common ſalt; the other half, to conſiſt of two parts ſaltpetre, and one part ſal-ammoniac, both reduced to a powder, and all thoroughly mixed together, to be placed about the inner veſſel, rather moiſt than dry. Perhaps, if ſmall tight boxes, or caſks, or bottles of ſeeds were incloſed in caſks full of ſalts, it might be of the ſame uſe, provided the ſalts do not get at the ſeeds; and as ſal-ammoniac may not eaſily be met with, half common ſalt, and the other half ſaltpetre, or common ſalt alone, might anſwer the like end.

The ſmaller ſeeds being very apt to loſe their vegetative power by long voyages through warm climates, it may be worth while to try the following experiment, upon ſuch as are known for certain to be ſound:

ſound: dip ſome ſquare pieces of cotton cloth in melted wax, and while it is ſoft, and almoſt cold, ſtrew the ſurface of each piece over with each ſort of ſmall ſeed, then roll them up tight, and incloſe each roll in ſome ſoft bees wax[c], wrapping up each of them in a piece of paper, with the name of the ſeed on it; theſe may be either ſurrounded with ſalts, as before, or packed without the ſalts in a box, as may be moſt convenient. Where glaſſes or boxes cannot be conveniently procured, the calibaſh and gourd ſhells, or joints of full-grown trumpet trees, thoroughly dried, ſeaſoned, and rubbed on the outſide with *palma Chriſti* oil, may anſwer equally well.

When plants are ſent, the boxes in which they are ſet, ſhould be 3 feet long, 15 inches broad, and from 18 inches to 2 feet deep, according to the ſize of the plants; but the ſmalleſt will be moſt likely to ſucceed, provided they are well rooted. There muſt be a narrow ledge nailed all round the inſide of the box, within ſix inches of the bottom, to faſten laths or packthread, to form a kind of lattice-work, by which the plants may be the better ſecured in their places. If they are packed up but juſt before the ſhip ſails, it will be ſo much the better. When they are dug up, care muſt be taken to preſerve as much earth as can be about their roots, and if it ſhould fall off, it muſt be ſupplied with more earth taken from the ſame hole, ſo as to form a ball about the roots of each plant, which muſt be ſurrounded with wet moſs, (perhaps wet cotton may anſwer, where moſs is not to be had) and carefully tied round with packthread, after a covering of plantane, or palmeto leaves, to keep the earth moiſt. There muſt be three inches of wet moſs laid at the bottom of the box, and the young plants ſet in rows upright, cloſe to each other, ſtuffing wet moſs in the vàcancies between them, and on the ſurface. I would adviſe the boring a great many holes at the bottom of the box, and placing it in a ſhallow wooden trough made water-tight at the joints with pitch, and one inch wider every way, with ledges of one or two inches, ſo placed as to keep the box from touching the bottom. This trough may be filled with wet cotton, which may be occaſionally watered during the voyage, and no water be given in the mean time to the plants, which may be guarded from rain, and the ſpray of the ſea, by a ſquare awning of oil cloth, or painted canvaſs, nailed upon four upright ſlips of deal, riſing from each angle of the box ſo high, as to overtop the plants two or three

[c] See ☞ in the ſubjoined note.

inches;

inches; this will likewiſe ſhade them from the noon-day ſun. The vapour, continually reeking from the cotton laid in the trough, will aſcend through the holes at the bottom of the box into the other *ſtratum* of cotton laid under the roots, and preſerve them in a due ſtate of refreſhing moiſture. The boxes may be ſteadied by laſhings to the deck.

The plants ſent from a hotter country to a colder, ſhould be put on board ſhip in the ſpring of the year, that the heat of the ſummer may be advancing as they approach the colder climates; and on the contrary, thoſe which are ſent from a colder to a hotter country, ſhould be embarked at the beginning of winter; but if they are originally from another hot climate, as for example the Eaſt Indies, and are intended for Jamaica, by the way of Great Britain, they will be put on board with greateſt probability of ſucceſs in January, February, June, July, or Auguſt [*d*], in order that they may be ſet in the ground, juſt before the vernal or autumnal rains. If they are going from a hotter country to a colder, they muſt have very little watering; if, on the contrary, they are going from a colder to a warmer, they may be allowed water more largely; and, being ſhaded from the ſun, they will arrive ſafe.

A great many plants of the ſucculent kind will live out of the earth a long time. Theſe need no other care than packing them up with moſs in a cloſe box, moſs being likewiſe put between them to prevent their bruiſing one another, and holes bored in the boxes to keep them from heating and putrefying: in this manner, they will come ſafe from a voyage of even four or five months. Several trees may alſo be brought ſafely in the like manner, taking them up at a ſeaſon when they have done growing, and packing them up with moſs. Of this ſort are, oranges, olives, capers, jaſmines, and pomegranates; theſe, and many others, are annually brought thus from Italy to England; and, although they are three or four months on the paſſage, ſeldom miſcarry.

In order to bring fruits in perfection from Jamaica, ſuch as oranges, lemons, ſhaddocks, citrons, and limes, they ſhould be gathered before they are turned entirely yellow, with about an inch or two of the ſtem or pedicle, the extremity of which ſhould be immediately ſeared with a red-hot iron, and then dipped in a compoſition of melted roſin, pitch, and bees wax. The fruit may be well wrapped in brown paper,

[*d*] At the *Britiſh* port.

ſmeared

ſmeared with bees wax, ſoftened with a little oil, and then packed in a ſhallow box, contrived with ſquare partitions, each juſt large enough to receive one of the fruit, or with diviſions formed by three or four rows of ſtrong cord laced acroſs tight; the cover ſhould be fitted ſo as not to ſqueeze them. If neceſſary, the vacancies may be looſely filled with well-dried plantane traſh, or dried corn-huſks, and a good number of gimblet-holes bored all round the ſides. When on board, it ſhould be ſtowed where no wet can get at it, and raiſed an inch above the floor, by two ledges faſtened to the bottom: the length of the box is not material, but the width ought not to exceed 18 inches, or two feet at moſt, for the convenience of ſtowage on board, where the trouble ariſing from cumberſome packages, often occaſions their being tumbled out of the way into improper places, to the injury of the products contained in them.

After purſuing theſe directions, it reſts to entruſt the conveyance and management on board, to a careful and intelligent captain, or other chief officer of the ſhip [a].

[a] Mr. Ellis, the ingenious gentleman before-mentioned, having lately favoured the public with ſome additional obſervations on the means of preſerving ſeeds and plants in a vegetating ſtate, when brought from diſtant parts, I ſhall here inſert ſuch of them as appear to be of the moſt uſe and importance.

Seeds of the true *rhubarb*, which were folded up in paper, and ſent in letters by the packet to ſeveral of our colonies in North America, did not ſucceed well; whereas, thoſe that were ſent by the ſame conveyance, after having been incloſed in flat tin boxes, or varniſhed iron ſnuff-boxes, and then put up in paper covers, grew very freely, as did thoſe put up in chip boxes, and kept by the captains in their cheſts or bureaus during the voyage. The reaſon of this defect of the ſeeds ſent incloſed in paper only, appears plainly to have ariſen from their being preſſed too cloſe together by the many letters in the mail; and kept in a damp ſtate for, perhaps, two months or more, by which means they became putrid, and half rotten, by the time they arrived.

☞ Thoſe ſeeds that were brought to England by Mr. Banks and Dr. Solander, preſerved in wax, did not grow; for they were too thin and chaffy to keep any time, unleſs they had been preſerved within their capſules, in ſmall ſnuff-boxes, or, perhaps, in phials.

☞ Another obſervation occurs in regard to ſeeds preſerved in wax, which is, that if they are not ſown immediately upon being taken out of the wax, they will certainly periſh; and this is one reaſon, why ſo many ſeeds of the *tea-tree*, that have been incloſed in wax, have miſcarried; for when they arrive, the perſons who receive them, take them out of the wax to be diſtributed among their many friends; ſo that they ſeldom are ſown till ſome time after, when the *germen*, which ſoon withers, has already loſt all its vegetative powers.

Another defect ariſes from their being kept for ſome days expoſed to the air (after being taken out of the wax) before they are put into the ground.

This may afford a hint to gentlemen both in the Eaſt and Weſt Indies, to order their ſeedſmen to put up the ſeeds in ſmall packages, that the whole in each package may be ſown at the ſame time; for the external air (which is very hot in thoſe countries compared to a Northern climate), as ſoon as the ſeeds are expoſed to it, immediately dries up their natural moiſture, and cauſes their lobe leaves

leaves and *germen* ſoon to periſh, and grow rancid. Such packets of ſeeds as are not opened, ſhould be kept as they come over, in their bottles, caniſters, or jars, in the cooleſt cellars, in tight caſks, or cloſe boxes; we may obſerve, that it has been the practice of all ages, in hot climates, to keep corn ſound, by placing it in ſubterraneous caverns.

The Italians have a method of ſending fruit through different parts of the country, by giving them a ſlight covering of wax, which preſerves them freſh for a long time. If then, we follow the ſame method with mangoes, mangoſteens, chocolate fruit, avocado pear, and many other fruits, packing them in boxes, or ſmall caſks, ſurrounded with clayed ſugar, there is no doubt but the ſtones and ſeeds, at leaſt, will come over in a ſound ſtate; ſome of the ripe mangoes and mangoſteens in wax, may be covered with paper, and ſent home in ſmall boxes; for ſhould the pulp be decayed, yet the kernels in the ſtones may be found, and in a growing ſtate, as happens in apples, oranges, &c., the pulp of which is generally rotten before the ſeeds are ſown.

The author mentions, that having received from Jamaica a variety of ſeeds of trees, many of which were unknown in England, each of which was tied up in a piece of coarſe brown paper, and the whole packed up in ſome ſheets of the ſame, upon examining of them, by cutting ſome of each open, he found that moſt of them were become dry and rancid, and very few of them vegetated. To prevent a diſappointment of this kind for the future, he directed his correſpondent, when the ſeeds of the largeſt ſorts which he might collect ſhould be ripe, and properly ſweated and cleaned, to put them into tight tin caniſters, or earthen veſſels, ſuch as pickling jars; to keep each kind of ſeed ſeparate in a ſmall bag of old white linen, or of writing paper, and ſurround all the ſorts in the bags with rice, millet, panic, or any ſmall farinaceous grain, or ground Indian corn properly dried, to fill up the interſtices or vacancies between the ſeeds.

When the caniſter, or jar, is full, and the parcel cloſely preſſed down, (but not ſo as to bruiſe the ſeeds) a ſmall quantity of camphire ſhould be incloſed in a piece of paper, or ſmall pill-box, and put in at the top of each caniſter or jar, which muſt be well ſtuffed with paper before the cover is put on. The incloſed fumes of the camphire will deſtroy inſects; and for the ſame purpoſe, in ſome caniſters, inſtead of camphire, a ſmall quantity of ſulphur, or tobacco, may be put. The tops of the caniſters and jars muſt be ſecured in ſuch a manner as to prevent the external air from getting acceſs to their contents.

Seeds have been brought from China incloſed in tortoiſe-ſhell, and in horn ſnuff-boxes, in moſt excellent order; and ſome incloſed in two-ounce phials, corked and ſealed.

Theſe caniſters and jars ſhould afterwards be put up in boxes, and packed in ſaw-duſt, or clean ſand (not ſea ſand) that has been well waſhed and dried, and kept in a cool part of the ſhip. Theſe methods are recommended, as few people will be at the trouble of incloſing ſeeds properly in bees wax.

Mr. Ellis takes occaſion to ſpeak of the garden eſtabliſhed in the iſland of St. Vincent, for the culture of the moſt uſeful plants, intended for the general benefit of the American iſlands, many of which may, in time, become profitable articles of commerce.

This garden, which appears to have owed its plan to the governor, general Melville, is under the care of Dr. George Young, principal ſurgeon to the hoſpital there, who has been indefatigable in collecting and propagating in it a variety of the moſt valuable plants.

Catalogue of plants now growing in the public garden at St. Vincent's.

Cinnamon,	* Seſamum,	Coriander,
* Logwood,	* Caſſia fiſtula,	* Aniſeed,
Safflower,	* China root,	* Vanilla,
Turmeric,	Gum galbanum,	* Dates,
Eaſt India mango,	Simarouba,	* Anotto,
Paper mulberry,	* Spigelia, or Worm-graſs,	* Guaiacum,

N. B. The articles marked with a * are growing in Jamaica.

Scammony,

Scammony,
Colocynth,
Rhubarb,
Tobago nutmeg,
Balſam capivi,
* Citron,
* Bergamot orange,
* Bamboo cane,
Italian ſenna,
* Aloes,
China tallow-tree,
* Cochineal cactus.

The following plants, collected from the botanic gardens about London, he has lately received for trial in it:

Tea ſhrub,
Sago palm,
Gum ſtorax tree,
Ciſtus Labdanifera,
* Succotrine aloes,
Manna aſh,
* Almonds,
* Olives,
Cork trees,
Camphire tree,
Gardenia,
China Lechee,
Adanſonia, or four gourd tree,
Gingko, from China, which bears nuts like piſtachias,
Caſuarina, a heavy red wood from Otaheite,
Baluſtians,
Piſtachia,
Terebinthus,
Lentiſcus, or maſtic,
Florida ſtarry-aniſeed,
Zant currant tree,
Dracæna Draco, or gum-dragon tree.

This gentleman brought with him a certificate from the chief magiſtrate of St. Vincent, that he had growing in this garden 140 healthy plants of the *true cinnamon*, at the beginning of May, 1772; in conſideration of which, the Society of Arts, being ſenſible of the importance of propagating this valuable ſpice in our American iſlands, preſented him with a good medal, in token of their eſteem and approbation.

When he firſt planted the cinnamon ſeeds, ſeveral parcels of which he had received at different times, he found, though he managed them with great care, that none came up; but being driven by ſtreſs of weather into Guadaloupe, he obtained leave to go up into the country, where there are ſome cinnamon trees; and looking for ſome ſeeds that had fallen from theſe trees, he found many juſt ſhooting out their roots among the graſs and rotten leaves under them. Taking this hint, the next ſeeds he received, he ſowed very ſhallow in the earth, under the ſhade of a tree, and from 200 ſeeds raiſed 140 plants.

I cannot but conſider it as a matter of reproach to the gentlemen of Jamaica, that they ſhould have ſuffered the little colony of St. Vincent to get the ſtart of them, in the execution of ſo truly laudable and uſeful a plan; more eſpecially as their climate, and the great extent of their iſland, which affords ſuch a choice of excellent ſituations, and ſuch plenty of fine ſoil and water, have given them advantages every way favourable to the ſucceſs of an undertaking of this kind. Perhaps, there are few better ſcites than that deſtined formerly for the academy at Old-woman's-ſavannah in Clarendon. The purchaſe of the buildings and land, with ſome little addition of ground, would be a trifling expence to the public. A ſalary of 300*l.* ſterling *per annum* might engage ſome gentleman ſkilful in botany, and zealous in promoting the plan, to reſide there, and carry it on; for which purpoſe likewiſe, it would be neceſſary to buy twelve or fifteen Negroes, to be employed under him entirely in the garden; and the whole might be put under the ſuperviſion of the governor, the two repreſentatives, and the rector of the pariſh. A ſupply of plants for ſtocking the garden might eaſily be obtained from the nurſeries near London, upon application to the Society of Arts, with whom a correſpondence would naturally be carried on; but, indeed, the chief dependance for its ſucceſs muſt be reſted on the patriotic encouragements of the Aſſembly, in the firſt place; and next, on their happy choice of a man of ability, ſcience, and activity, for the well-conducting of it.

N. B. The articles marked with a * are growing in Jamaica.

SECT. II.

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APPENDIX

APPENDIX to VOL. III.

SECT. I.

THE encomiums which are copiouſly beſtowed upon the French *Code-Noir*, and the little knowledge the planters of our iſland have of the articles that compoſe it, induce me to believe, that a tranſlation will be well received; not merely as matter of curioſity, but an exemplar, which ſeveral diſtinguiſhed writers have pointed out to be worthy their imitation.

Should it appear to merit the high character they have given of it, there can be no diſhonour in borrowing, and intermingling with our own ſyſtem, ſuch of its inſtitutes as the difference of our conſtitutional principles has not excluded.

The French, it is ſaid, cannot perfect their cloth-manufacture without ſome proportion of Engliſh wool. In reſemblance therefore of their practice, why ſhould we not, in our turn, make free with their political ſtaple; and interweave ſo much of their juriſprudence, a may ſerve to render our own fabric more compleat and valuable? "*Fas eſt et ab* hoſte *doceri.*" Let us not be deaf to inſtruction, even though it comes from our *rival*; for ſuch is the import that I would wiſh to give to the word *hoſtis.*

The CODE-NOIR, or NEGROE-CODE; publiſhed, at Verſailles, March, 1685 [*a*].

LOUIS, by the Grace of GOD, &c.

ART. I. We will and intend, that the edict of the late king, of glorious memory, our ever-honoured lord and father, of the 23d of April, 1615, ſhould be executed in our iſlands. To which end,

[*a*] Deniſart mentions, that this edict is regiſtered with the ſovereign council at Hiſpaniola, but has never been regiſtered in any of the French parliaments. The reaſon of this probably was, that, the proviſions being merely local, it was thought ſufficient that it ſhould be regiſtered in the colony only where they were to take effect.

we enjoin our officers, in every department, to baniſh thence all Jews whatſoever who have taken up their reſidence therein; which Jews (being avowed enemies to the name of Chriſt) we hereby command to retire from the ſame within the ſpace of three months, to be computed from the day of publication of theſe preſents, on pain of forfeiting their lives and goods [*b*].

II. All ſlaves that are in our iſlands ſhall be baptized, and inſtructed in the Catholic, Apoſtolic, and Romiſh religion. We enjoin the inhabitants, purchaſers of ſlaves newly-imported, to give notice thereof to the governor and intendant of the ſaid iſlands reſpectively, within eight days at the fartheſt, on pain of incurring an arbitrary fine. And ſuch governor and intendant ſhall give the neceſſary orders for cauſing them to be baptized, and inſtructed, at convenient times.

III. We forbid the public exerciſe of any other than the Catholic, Apoſtolic, and Romiſh religion. We will, that all perſons, who act contrary to this prohibition, ſhall be puniſhed as rebels, and contemners of our authority. In this view, we forbid all heretical aſſemblies; declaring the ſame to be illegal and ſeditious conventicles, ſubject to the like puniſhment; which alſo ſhall be inflicted upon thoſe maſters who permit their ſlaves to attend ſuch aſſemblies.

IV. No one ſhall be appointed an overſeer of Negroes who does not profeſs the Catholic, Apoſtolic, and Romiſh religion. And, in caſe any other ſhall be ſo employed, the Negroes, belonging to the maſter ſo appointing, ſhall be forfeited; and the perſon, accepting ſuch employment, ſhall be ſubject to arbitrary puniſhment.

V. We

[*b*] I would not recommend this article to the imitation of our Jamaica legiſlature: it is clearly founded in ſuperſtition and bad policy. The French, indeed, out-numbering us in people, can better afford ſupplies than we, from their European hive, to inhabit and ſtrengthen their Weſt-India colonies. But what muſt our loſſes of trade and inhabitants have been at Jamaica, had we copied from this precedent, and (as our council once fooliſhly petitioned the crown) proſcribed theſe uſeful people from our iſland? In fact, this meaſure of the French government has been, comparatively ſpeaking, almoſt as beneficial to us, as their perſecution of the Hugonots, many years ago, proved to England. We gained a large acceſſion of ſubjects, who brought not only their wealth with them, but their knowledge in trade; and, having incorporated themſelves immoveably with our ſociety, by the purchaſe and ſettlement of lands among us, their gains in commerce, or planting, are permanently attached to our iſland. "There are two duties" (ſays Mr. Voltaire) "which the Jews conſider as the moſt indiſpenſable of all others, namely, *the getting of*

"*money*

V. We forbid our ſubjects, of the Proteſtant, Reformed religion, to give any trouble or impediment to our other ſubjects, or their ſlaves, in the free exerciſe of the Catholic, Apoſtolic, and Romiſh religion, on pain of being puniſhed in an exemplary manner.

VI. We enjoin all our ſubjects, of what quality or condition ſoever, to obſerve the Lord's-day, and the holidays that are kept by our ſubjects of the Catholic, Apoſtolic, and Romiſh religion. We forbid them to labour, or cauſe their ſlaves to labour, on thoſe days, from the hour of mid-night to the following midnight, whether it be in the culture of land, or manufacture of ſugar, or any other kind of work; on penalty that the maſters ſo offending ſhall be ſubject to a fine, and arbitrary puniſhment, and the forfeiture of all ſuch ſugar, as well as of the ſlaves, detected at work by our officers [*c*].

VII. We forbid likewiſe any Negroe or other markets to be kept on the ſaid days, upon the like penalties, and forfeiture of the merchandizes that ſhall be brought to any ſuch markets; beſides an arbitrary fine, to be levied upon the ſellers, or dealers.

VIII. We declare all ſuch of our ſubjects, who are not members of the Catholic, Apoſtolic, and Romiſh religion, to be incapable, for the future, of contracting lawful marriage.

We declare the children, born of any other pretended marriage, to be baſtards; and we will that every ſuch pretended marriage be held and reputed to be actual concubinage.

IX. Free men, who have one or more children born during concubinage with their ſlaves, as well as the maſters of ſlaves who

"*money and children.*" But, admitting this to be true, it is ſo far from being matter of reproach, that it rather reflects very great honour upon them; for what ſubjects can better deſerve the appellation of good citizens, than thoſe who give their conſtant endeavour to introduce, into the ſtate where they have fixed their reſidence, not money alone, but population alſo; which is the true political wealth of every commercial country? And as this people never diſſipate unprofitably the riches thus acquired, ſo they do not conſume their health and vigour in debauchery and exceſs. Have not theſe frugal and abſtemious Iſraelites much greater merit, and do they not conduce far more benefit to the ſociety of which they are members, than all thoſe profligate beings (an enormous multitude they are!) who, inſtead of contributing in either way to the public good, do what they can towards the depopulation of their country, the impoveriſhment of their families, and the abridgement of their own contemptible lives?

[*c*] In the laws enacted by king Canute, there is one which frees a ſlave whoſe maſter had obliged him *to work on a holiday*, beſides puniſhing the offence by a fine, or mulct, to the king. "But it may be queſtioned, whether this was the effect of humanity, or merely of ſuperſtition."

Lyttelton, Hen. II.

The like obſervation may be made on the ſubſequent article.

ſuffer ſuch concubinage, ſhall be condemned each in a fine of two thouſand pounds weight of ſugar. And, if any maſter ſhall have children by his own ſlave, we will, that, over and above the like fine, he ſhall be deprived of ſuch ſlave and children; and that both ſhe and they ſhall be forfeited to the uſe and benefit of the hoſpital, with diſability of their becoming enfranchiſed. We mean not, however, that the preſent article take effect, in caſe the father, not being a married man at the time of ſuch his concubinage with his ſlave, ſhall afterwards intermarry with his ſaid ſlave (according to the forms obſerved by the church); in conſequence whereof, ſhe ſhall become enfranchiſed, and the children free and legitimate [*d*].

X. The ſolemnities regarding marriage, preſcribed by the ordinance of Blois (art 40, 41, 42), and by the declaration of the month of November, 1639, ſhall be obſerved, as well with reſpect to ſlaves as free perſons; provided, however, that it ſhall not be neceſſary to obtain the conſent of the father or mother, but only that of the maſter.

XI. We forbid clergymen to ſolemnize the marriage of ſlaves, unleſs they can produce the conſent of their maſter. And we likewiſe forbid maſters to uſe any conſtraint towards their ſlaves, to make them marry involuntarily.

XII. The children, produced from the marriage of one ſlave with another, ſhall be ſlaves, and belong to the maſter of the wife, and not of the huſband, if the huſband and wife have different maſters.

XIII. We will, that, if a male ſlave ſhall intermarry with a free woman, the iſſue of ſuch marriage, as well male as female, ſhall follow the condition of the mother, and be free like her [*e*], notwithſtanding

[*d*] The policy of this law is very obvious. The co-habitation of a maſter with his ſlave brings them into a connexion inconſiſtent with their reſpective conditions: they become parents of the ſame offſpring, which, by the laws of nature, muſt be deemed to owe them a reciprocal duty and obedience. If the children are left in a ſlaviſh condition, this degrades their natural claim of inheritance; for, in right of parentage on the father's ſide, they ought to enjoy freedom; if they are raiſed from the indignity of a ſpurious birth by their father's ſubſequent intermarriage, they do not break-in upon the fences which the law has ſet up, in favour of the legitimately-begotten heirs, by receiving a patrimony, or eſtate, from their father for their maintenance. The inſtitution of marriage is wiſely promoted; and the chaſtity of female ſlaves, in ſome meaſure, guarded againſt that violence and conſtraint which may be ſuppoſed to follow the abſolute power and authority of their maſters.

[*e*] This is contrary to the antient feudal cuſtom; according to which, if a free woman was married to a *villein by birth*, ſhe loſt her freedom during the life of her huſband; and their children were

withſtanding the ſlavery of the father; but, if the father be free, and the mother a ſlave, her children ſhall in like manner be ſlaves.

XIV. Maſters ſhall be obliged to cauſe their baptized ſlaves to be interred, after their deceaſe, in holy ground, in the cœmeteries allotted for that purpoſe. And, in regard to thoſe ſlaves who may die before receiving the ſacrament of baptiſm, they ſhall be buried, in the night-time, in ſome field near to the place of their deceaſe.

XV. We forbid ſlaves to carry any offenſive arms, or clubs, on pain of whipping and forfeiture of ſuch arms to the uſe of the ſeizer; with exception only of ſuch as are ſent a hunting by their maſters, or carry their tickets, or known tokens.

XVI. We likewiſe forbid ſlaves, belonging to different maſters, to aſſemble together, by night or by day, under pretence of weddings, or any other account, whether it be at the plantation of their maſter, or any other; or more particularly in any highway, or in unfrequented places; on pain of corporal puniſhment, which at leaſt ſhall be by whipping, and burning on the right ſhoulder with a red-hot iron, impreſſed with a fleur-de-lis. And, in caſe of frequent repetition of the ſame offences, or other aggravating circumſtances, they may be puniſhed with death, or according to the diſcretion of the judges. We enjoin all our ſubjects, whether officers or others, to purſue the offenders, and to apprehend and conduct them to priſon, even although no warrant may have been iſſued againſt them.

XVII. The maſters, who ſhall be convicted of having permitted or ſuffered aſſemblies compoſed of any other ſlaves than their own, ſhall be adjudged, at their own proper expence; to make good all damage that may ariſe or be done to their neighbours in conſequence of ſuch aſſemblies; and ſhall pay a fine of ten crowns for the firſt offence; which fine ſhall be doubled, upon every ſucceeding offence.

XVIII. We forbid ſlaves to ſell ſugar-canes on any account or pretence whatſoever, and notwithſtanding any permiſſion from their

were born to the ſame ſtate of ſervitude, which was continued to all the ſucceeding generations, unleſs their lord enfranchiſed them by his own act. The French ordinance in this caſe follows the old rule of the civil law, which we likewiſe adopt in our colonies, of, "*partus ſequitur* "*ventrem.*"

maſter,

maſter, on penalty that ſuch ſlaves ſhall be whipped; and the maſter ſo permitting ſhall be fined in the amount of ten French livres; and the buyer of ſuch canes in the ſame ſum.

XIX. We likewiſe forbid them to expoſe at public ſale, or to carry into any private houſes for the purpoſe of ſale, any kind of commodity, not even fruits, pulſe, fire-wood, pot-herbs, or ſallads, and cattle, without leave of their maſters expreſſed by a ticket, or ſome known token, on penalty that their maſters may claim the things ſo ſold, without making any reſtitution of the price paid by the purchaſers thereof, and receive alſo from ſuch purchaſers a fine of ſix French livres, to be appropriated to their own uſe.

XX. To this intent we will, that two perſons be appointed, by our officers, for every market, who ſhall examine the commodities and merchandizes brought thither by ſlaves, as well as the tickets and tokens of their maſters.

XXI. We permit all our ſubjects, living in the iſlands, to ſeize every article they find in poſſeſſion of ſlaves not carrying tickets, or known tokens, from their maſters; in order that ſuch articles may be immediately reſtored to their maſters, if their plantations be near the place of ſuch ſeizure; otherwiſe, that they may be forthwith ſent to the hoſpital, to be there kept in ſafety until due notice thereof ſhall have been given to their maſters.

XXII. Maſters ſhall be obliged to furniſh, every week, to their ſlaves of ten years old, or upwards, for their ſubſiſtence [*f*], three pints (of the country meaſure) of caſſava-meal, or three bunches of caſſava-roots, weighing each two pounds and an half at the leaſt; or ſome other vegetable food equivalent; together with two pounds of ſalted beef, or three pounds of fiſh, or of ſome other animal food in proportion; and to children, from the time of their weaning to the age of ten, half the aforeſaid quantity of like proviſions.

XXIII. We forbid maſters to give their ſlaves any ſpirituous liquors, extracted from ſugar-canes, in lieu of the ſubſiſtence mentioned in the preceding article.

[*f*] This appears to be rather a ſcanty allowance. We find, that the Romans commonly gave their ſlaves, in general, at the rate of three pints of corn *per diem*; and, to the better ſort, two quarts.

"The magiſtrate ought to take care, that the ſlave has his proviſions and cloathing; and this "ought to be regulated by law."

Monteſquieu.

XXIV. We

XXIV. We forbid them likewiſe to exempt themſelves from the ſupport and ſubſiſtence of their ſlaves, by permitting them to work for themſelves certain days in the week.

XXV. Maſters ſhall be obliged to furniſh each and every of their ſlaves, yearly, with two ſuits of linen cloth, or five yards of light cloths, whichſoever the ſaid maſters ſhall judge moſt proper.

XXVI. Slaves, that are not ſubſiſted, cloathed, and maintained, in the manner we have directed by theſe preſents, may give notice thereof to our attorney, and put their caſe into his hands; in conſequence of which, or even without them, if the cauſe of complaint ſhall come to his knowledge by any other means, the maſters ſhall be proſecuted at his inſtance, and without any expence; which proceſs we would alſo have obſerved in regard to thoſe maſters who abuſe [g] or treat their ſlaves in a barbarous and inhuman manner.

XXVII. Slaves, that are become infirm by old age, ſickneſs, or otherwiſe, whether their diſeaſe be incurable or not, ſhall be ſubſiſted and maintained by their maſters; or, in caſe of being abandoned by their maſters, they ſhall be ſent to the hoſpital, to which ſuch maſters ſhall be adjudged to pay ſix-pence *per diem* for the ſubſiſtence and maintenance of every ſuch ſlave [h].

XXVIII. We declare ſlaves to be incapable of poſſeſſing any thing, except to the uſe of their maſter; and whatever they may acquire, either by their own induſtry, or the liberality of others, or by any other means, or under what title ſoever, ſhall be and accrue to their

[g] So the evangelical precept, Epheſ. vi. 9, "and, ye maſters, do the ſame things unto "them, *forbearing threatening*; knowing, that your maſter alſo is in heaven; neither is there "reſpect of perſons with him." And to the ſame effect was that conſtitution of Clement, "*cave*, "*ſervo aut ancillæ imperes acerbo animo.*" For which, Seneca gives us a very juſt reaſon: "*fiet* "*enim formidoloſus et contumax, niſi eum tactu blandienti permulſeris.*" So the Jewiſh Law, in reſpect to the leſſer modes of puniſhing: "*non opprimes eum, non dominaberis ei durè.*"

[h] Plutarch ſpeaks of it as a moſt ſcandalous practice of the elder Cato, that he uſed to ſell his ſlaves as ſoon as they grew old. So Monteſquieu: "the laws ought to provide, that care be "taken of them in ſickneſs and old age." Claudius decreed, "that the ſlaves, who in ſickneſs "had been abandoned by their maſters, ſhould, in caſe they recovered, be free."

A regulation in this reſpect is much wanted in our iſland; where ſuperannuated ſlaves, becoming burthenſome, may, from the vile principles of avaricious owners, attract ill uſage, inſtead of compaſſion. An exemption from taxes, for all ſlaves above fifty years of age, would be an uſeful public grant in their favour.

reſpective

respective master in full property [i], in bar of all claim to the same by the children, parents, or relations, of such slaves, or any other persons, free or slaves, by any deed of gift or grant, or by inheritance or succession, or last will and testament: we declare all such dispositions null and void; as well as all promises, engagements, and obligations, made or entered into by such slaves; the same being deemed to have been made, entered into, and given, by persons incapable of contracting and disposing in their own name.

XXIX. We will, nevertheless, that masters shall be bound by the acts of their slaves, done in obedience to their order and command; as also for what business, or affairs, they may transact and negotiate in trade: and as for any private species of commerce, entrusted to them by their masters, they shall be answerable only so far as it turns to the profit of their masters. The emoluments of the said slaves, which their masters have permitted them to acquire, shall be held liable to secure their masters in payment of what is due on their property of the stock in trade; but, if the emoluments consist wholly, or in part, of goods which the slaves are permitted to hold and traffic with separately, their masters shall only come in for an equal dividend with other creditors [k].

XXX. Slaves shall not be capable of holding, or exercising, any office, or commission, that is attended with public functions; nor be appointed agents for any other than their masters, to manage and conduct any business, or arbitration; nor be witnesses in any civil or criminal matter; or, if admitted to give testimony, their deposition shall be considered as no more than a bare narrative, from

[i] This is agreeable to the civil law, mentioned by Justinian, "*ipse servus, qui in potestate alterius est; nihil suum potest habere.*" Among some nations, however, it was customary to indulge their slaves with a right of acquiring property to themselves. And Pliny tells us, that he permitted his slaves to dispose of their effects by a kind of testamentary distribution. This property, which, in some places, and to a certain extent, they were allowed to hold, enjoy, or give away, independent of their masters, was called their *peculium*. But the villeinage-laws did not admit of this privilege.

[k] The design of this article seems to be, that the slaves shall not be part or sole owners of stock in trade; that their gains shall lay at their master's disposal; and, in case of insolvency, that the goods shall be liable to an equal distribution, in which the masters shall not, by being such, be entitled to any advantage, in preference to common creditors. I cannot be certain of having given the exact sense of this article, as the French copy before me is imperfect.

which it ſhall not be lawful to draw any preſumption, or conjecture, or the leaſt circumſtance corroborative of proof.

XXXI. Neither ſhall ſlaves be capable of becoming parties in any trial, or in any civil matter, whether as plaintiffs or defendants; nor be parties-civil in matters criminal; nor proſecute, in any matter criminal, for reparation of outrages and exceſſes that have been committed againſt ſlaves.

XXXII. Slaves may be proſecuted criminally, without its being neceſſary to make their maſter a party in the cauſe, except he be an accomplice. The ſaid ſlaves, when accuſed, ſhall be brought to trial, in the firſt inſtance, before the ordinary judges; and, in caſe of appeal, to the ſovereign council, the proceſs ſhall be carried on with the ſame formalities as in the caſe of free perſons.

XXXIII. The ſlave that ſtrikes his maſter, or the wife of his maſter, his miſtreſs, or any of their children, ſo as to cauſe an effuſion of blood; or that gives them, or any of them, a blow upon the face; ſhall be puniſhed with death.

XXXIV. And, in regard to outrages and acts of violence, committed by ſlaves againſt free perſons; we will, that they ſhall be ſeverely puniſhed; and even with death, if neceſſary.

XXXV. Certain kinds of theft, as of horſes, mares, mules, oxen, and cows, committed by ſlaves, or by others who have been made free, ſhall be puniſhed effectually; and even with death, if the caſe require it.

XXXVI. Slaves, guilty of ſtealing ſheep, goats, hogs, poultry, ſugar-canes, caſſada, peas, or other kinds of pulſe, ſhall, according to the nature and quality of their crime, be puniſhed by the judges; who may, if they think fit, order them to be whipped by the common hangman, and branded on the ſhoulder with a fleur-de-lis.

XXXVII. Maſters ſhall be adjudged, in caſe of theft, or other damage committed by their ſlaves, to make good the loſs at their own proper expence; unleſs they ſhould rather chuſe to give up the offending ſlave to the perſon who has ſuſtained the injury; but on this point the choice muſt be made within three days, at fartheſt, from the time of paſſing the ſentence; otherwiſe they ſhall be precluded.

XXXVIII. A fugitive ſlave, that ſhall continue out for a month, computing from the day of his being publickly advertiſed by his maſter, ſhall have both his ears cut off, and ſhall be branded on one of his ſhoulders with a fleur-de-lis. In caſe of his repetition of the ſame offence, computing in like manner from the day of his being publickly advertiſed, he ſhall be ham-ſtrung, and be branded on the other ſhoulder. But, for the third offence, he ſhall be puniſhed with death [*l*].

XXXIX. Freed men, convicted of harbouring or concealing fugitive ſlaves in their houſes, ſhall be condemned in a body to pay to the maſter of ſuch ſlaves a fine of three hundred pounds weight of ſugar *per diem* for every day of their harbouring ſuch ſlaves.

XL. A ſlave, who ſhall be puniſhed capitally upon the accuſation of his maſter (provided the maſter be not an accomplice in the crime for which ſuch ſlave ſhall have been condemned), ſhall be valued, before his execution, by two principal inhabitants of the iſland, appointed to this office by the judge; and the price, ſet upon him, ſhall be paid to the maſter, for ſatisfaction of whom, a tax ſhall be laid, by the intendant, equal to the amount of the appraiſement, proportionably rated *per* head on every Negroe paying taxes; and, to ſave expences, the ſame ſhall be levied by the farmer of our royal Weſtern domain.

XLI. We forbid the judges, our attornies, and their regiſters, to take any fees in criminal proſecutions carried on againſt ſlaves, on pain of being puniſhed for extortion.

XLII. Maſters may, as often as they think their ſlaves deſerving of puniſhment, cauſe them to be put in irons, or chaſtiſed with rods, or the whip; but they are not, in any caſe, to put them to the torture, nor puniſh them by mutilation of limb or member [*m*], on pain of forfeiting ſuch ſlaves, and of being themſelves proceeded againſt in an extraordinary manner.

XLIII. We

[*l*] Compare this with our Jamaica law againſt run-aways, and applaud the ſuperior humanity of the French, in this inſtance at leaſt.

[*m*] Bracton ſays, that, in the days of villeinage, the lives and limbs of ſlaves were under the protection of the king; ſo that, if a lord killed his ſlave, he would not be leſs puniſhed, than if he killed any other perſon; but it was uſually by fine. The penalty here inflicted, of forfeiting the ſlave, is perfectly agreeable to juſtice. So, by a law of the Greeks, a ſlave, too roughly treated by his maſter, might inſiſt on being ſold to another. In the latter times, there was a law of the ſame

XLIII. We enjoin our officers to commence criminal actions against those masters, or overseers, who shall kill any slave under their authority, or direction; and to punish such masters according to the atrocity of the circumstances; and, in case there be room for acquittal, we permit our said officers to discharge, as well the masters as overseers, without their being obliged to solicit us for a pardon.

XLIV. We declare slaves to be moveables, and as such to make part of the personal estate of their masters; and not mortgageable, but to be distributed equally among co-heirs, without regard to precaption [*n*], or the right of primogeniture; without being subject to the customary dower, or to the power of redemption by the feudal lord, or nearest of kin, or to feudal or signorial rights, to the formalities of decrees in chancery, or to the defalcations of the four-fifths, in case of disposition at death, or by last-will.

XLV. We mean not, however, to preclude our subjects from the power of appropriating them to their own persons, or to those of their kindred and family, in the same manner as is usually done with sums of money, or other moveables.

XLVI. The same forms shall be observed, in the seizure of slaves, which we have prescribed by our ordinances and customs for regulating the seizure of other moveables. We will, that the money thence arising be distributed in the same order in which the seizures are made; and, in case of insolvency, that the dividend be extended even so far as to a penny in the pound, after the privileged debts are first paid. In general, the condition of slaves shall be in

same nature at Rome. "A master, displeased with his slave, and a slave with his master, ought "to be separated."

Lenity and humane treatment may prevent the dangers to be apprehended from the multitude of slaves in a moderate government. Men grow reconciled to every thing; and even to servitude, if not aggravated by the severity of the master. The Athenians treated their slaves with great lenity; and this secured them from the commotions raised by the slaves among the austere Lacedemonians. The primitive Romans lived, worked, and ate, with their slaves; they behaved towards them with great justice and humanity; the greatest punishment they made them suffer was, to make them pass before their neighbours with a forked piece of wood upon their backs; their manners were sufficient to secure the fidelity of their slaves; there was no necessity for laws.

Montesquieu.

[*n*] In the original, *préciput*; a term which means the portion of an estate, which, by custom, or the gift of the testator, descends to one of the co-heirs, over and above his equal share with the rest.

every thing regulated in the ſame manner as other moveables, with the following exceptions.

[o] XLVII. The huſband and wife, and their young children, ſhall not be ſeized and ſold ſeparately, if they are under the power of the ſame maſter, we declare ſuch ſeizures and ſales to be void; which reſtriction we mean ſhould extend alſo to thoſe who alienate a part of ſuch divided families of ſlaves. The ſellers in ſuch caſe ſhall forfeit the reſidue of the parcel, which ſhall be adjudged to the purchaſers of the other part aforeſaid, without being compellable to the payment of any further or additional ſum for the whole number.

XLVIII. Slaves, actually employed in ſugar-works, indigo works, and plantations, from the age of fourteen to ſixty, ſhall not be ſeized for debt; unleſs it be for what may be due for their purchaſe-money; and unleſs the ſugar or indigo works, or plantations, wherein they are employed, are at the ſame time actually under extent or ſeizure. We forbid, on pain of nullity, to proceed with ſuch ſeizure and judicial ſale of any ſuch ſugar or indigo works, and plantations, without comprehending therein all ſlaves of the above age, and actually employed upon them.

XLIX. The lawful renters, or leſſees, of ſugar or indigo works, and plantations, actually attached, together with the ſlaves, ſhall be obliged to pay the full rent or value of their leaſe, without being allowed to deduct any thing for the children of the leaſed ſlaves, born during the courſe of the proceſs.

L. We will, that, notwithſtanding all conventions or agreements to the contrary, which we hereby declare null, the ſaid children ſhall belong to the leſſor of the premiſes, in caſe the creditors are otherwiſe ſatisfied; or to the party to whom the eſtate ſhall be adjudged in purſuance of a decree; and to this effect mention ſhall be made, in the laſt publick notice given, before the iſſuing of ſuch decree, of all ſuch children born of ſlaves ſince the final ſeizure; and in the ſame public notice a liſt or account ſhall likewiſe be

[o] The proviſions, contained in the 47th, 48th, 51ſt, and 53d, articles, are founded upon the wiſeſt policy; and are well deſerving our adoption in Jamaica, where the ſeverance of Negroes from land has been always productive of infinite hardſhips to them, of ſtupendous loſs to the iſland, and impediment to its further improvement and cultivation.

given

given of all ſlaves deceaſed ſince the ſeizure wherein they were comprehended.

LI. We will, that, for avoiding expence and unneceſſary delays, the whole price of the lands and ſlaves, as fixed by the adjudication, together with what may be produced by ſale of the leaſes, ſhall be diſtributed among the creditors, according to the order of their rights, and mortgages, without making any diſtinction between what ariſes from the ſale of lands, and what accrues from the ſale of the ſlaves.

LII. Provided, that the feodal and ſeignorial dues ſhall only be paid in proportion to the proceeds of the land.

LIII. It ſhall not be lawful for the next of kin, or the feodal lords to redeem the lands thus adjudged to another, unleſs they redeem the ſlaves alſo, which paſſed with the lands; nor for the perſon to whom the eſtate is adjudged to retain the ſlaves without the land.

LIV. We enjoin guardians, whether nobles or commons, uſufructuaries, leſſees, and all others in poſſeſſion of lands, to which labouring ſlaves are annexed, to govern the ſaid ſlaves as good fathers of families[q]; they ſhall be obliged, after their adminiſtration is finiſhed, to account for the value of all ſuch as have died, or whoſe numbers have been diminiſhed by ſickneſs, old age, or other means, not occaſioned through their fault or neglect; and this too, without their being allowed to retain, for their own benefit, any children born of the ſaid ſlaves during ſuch adminiſtration; which we hereby order to be kept and ſurrendered up to thoſe who are to become their maſters and proprietors.

LV. Maſters, having attained the age of twenty, may manumit their ſlaves by any deed during their life-time, or by laſt will and teſtament, without being obliged to aſſign any reaſon for ſuch enfranchiſement; nor ſhall they be under any neceſſity of conſulting the opinion of their parents thereupon, even although they may be under the age of twenty-five.

LVI. Slaves that are made univerſal legataries by their maſters, or are appointed tutors to their children, or named executors in their laſt

[q] So *Pliny* ſays, "Servis, reſpublica quædam et civitas, domus eſt." And *Priſcus*, ſpeaking of the manner in which the Romans treated their ſlaves, "Eos delinquentes *quaſi filios ſuos* "caſtigant."

wills,

wills, ſhall be held and reputed, and we do hold and repute them as enfranchiſed [r].

LVII. We declare their enfranchiſement, granted in our iſlands, to be equivalant to their being born free in thoſe iſlands; and ſlaves made free, have no need of our letters of naturalization, to qualify them for enjoying the advantages of our natural-born ſubjects of our realm, in the lands and countries ſubject to our obedience, even although they may have been born in a foreign country.

LVIII. We command all thoſe who have been manumiſed, to ſhew a particular reſpect to their former maſters, their widows, and children; ſo that any injury which they may do to them, or any of them, ſhall be puniſhed more ſeverely than if they had done it to another [s]. We declare them, however, to be intirely freed and abſolved from all other burthens, ſervices, and claims, which their former maſters may pretend to have, either on their perſons, their goods, or inheritances, in quality of patrons.

LIX. We grant to freed-men the ſame rights, privileges, and immunities, which are enjoyed by perſons born free. We will, that they merit the liberty they have received, and that the ſenſe of this benefit produce in them, both in regard to their perſons and property, the ſame effects that the bleſſing of natural liberty cauſes in our other ſubjects.

LX. We declare all the forfeitures and fines, that are not appropriated to any ſpecial uſe by theſe preſents, to belong to us, and to be paid to the perſons entruſted with the receipt of our revenues. We will, however, that one third of ſuch forfeitures and fines ſhall be deducted for the benefit of the hoſpital eſtabliſhed in the iſland, where the ſaid penalties ſhall be adjudged.

[r] This mode of granting enfranchiſement *by implication*, is agreeable to the villeinage cuſtoms. By which, if a man bound himſelf in a bond to his villein for a ſum of money, granted him an annuity by deed, or gave him an eſtate in fee, for life, or years, the villein became enfranchiſed; for this was reputed "dealing with him on the footing of a freeman; or veſting an ownerſhip, "truſt, or power in him, entirely inconſiſtent with his former ſtate of bondage."

But in caſe the lord indicted him for felony, it was otherwiſe; the lord could not inflict a capital puniſhment on his villein, without calling in the aſſiſtance of the law.

Blackſt. Comm. vol. II. *p.* 94.

[s] According to *Bracton*, a ſlave enfranchiſed might be deprived of his liberty, and brought back to his former ſervitude, for *ingratitude* to his maſter.

SECT. II.

EDICT of the KING,

Concerning Negroe Slaves in the Colonies; iſſued at Paris, in the Month of October, 1716 [t].

ARTICLE I.

THE edict of March, 1685, and the arrets iſſued either in execution or explanation of it, ſhall be put in force in our colonies, according to their tenor and purport; and conſequently the Negroe ſlaves, that are employed there for the cultivation of the land, ſhall continue to be brought up, and inſtructed in the principles and practice of the Catholic, Apoſtolic, and Romiſh religion.

II. If

[t] Mr. *Hargrave* ſays, that, notwithſtanding the former edicts, if Negroe ſlaves were carried from the French American iſlands into France, they were entitled to the benefit of the ancient French law, and became free on their arrival in that kingdom; to prevent which conſequence this edict was made; which permits the bringing of Negroe ſlaves into France, under various reſtrictions, all tending to prevent their long continuance there after their arrival, to reſtrain their owners from treating them as property whilſt they continue in the mother country, and to prevent the importation of fugitive Negroes; and that with a like view a royal declaration was made in December, 1738, containing an expoſition of this edict, and ſome additional proviſions. But that the antient law of France in favour of ſlaves "from another country," ſtill has effect; and the ſame, "if they are brought under circumſtances, to which the terms of theſe edicts do not extend." The latter remark ſeems hardly worthy of this ſenſible writer, ſince no one needs be told, that a penal law or edict, or any other law, *does not include* perſons or circumſtances, that *are not included* in it. He tells us further, that *Denifart* obſerves, they are not regiſtered by the parliament of Paris, "becauſe they are conſidered as contrary to the common law of the king-"dom." But in reference to this, if they carry the operation of laws in that kingdom, which none, I believe, will deny, it matters not at all, whether the parliament of Paris have regiſtered them not; at the ſame time it does not appear that the reaſon aſſigned for their not having regiſtered them is any other than the author's own conjecture.

Mr. Hargave ſays, that the ancient law of France has effect, "in caſe the terms of theſe edicts "are not ſtrictly complied with, or if the Negro is brought from a place to which they do not "extend." So, in 1738, a Negro having been brought from the iſland of St. Domingo, without obſerving the terms of the edict of 1716; and in 1758, a ſlave being brought from the Eaſt Indies, to which the edict doth not extend, they were in both theſe caſes declared to be free: in regard to the firſt caſe, Mr. Hargave ſeems miſtaken in ſaying, that the Negroe became free by the antient law of France; it is plain he became free under the *5th Article* of the edict, which declares, that, "in caſe of neglecting to obſerve the formalities in the articles required, the ſlaves "ſhall be free, and not reclaimable." The ſecond caſe relates to a ſlave not belonging to any of the French American or Aſiatic iſlands, and therefore not bound by the tenor of theſe edicts, which extend only to ſlaves belonging to thoſe iſlands. It would ſeem, however, from this latter caſe, as well as from the edict itſelf of 1716, that the French law of the land ſtill operates, where

II. If any of the inhabitants of our colonies, or the officers employed in their government, are desirous of bringing any black slaves of either sex into France with them, in the capacity of domestics, or otherwise,

where it can, to take off the yoke of slavery from all persons coming into that kingdom from *foreign countries*; following their antient maxim of, "*servus peregrinus*, simul atque terram Francorum tetigerit, eodem momento liber fiat;" which maxim, however, if strictly taken, and agreeable to its original meaning, extended only to slaves belonging to foreign states, who might flee to, and take refuge in, their kingdom; but by no means extended to their own slaves, coming from any distant part of their own territories. It is plain, that the French government, weighing well the ill consequences which might ensue to their colonies from the loss and emigration of labourers from thence; and to the mother state, by their too frequent introduction into it, and intermixture with their white subjects, has taken a most effectual means, by the ordinances of this edict, to keep them employed on those spots, where alone their labours can redound to the advantage of the kingdom. For want of some controul of the like sort, enacted by the English parliament, our colonies at this time sustain a loss of many thousand labouring hands, who answer no other purpose, by their residence in the mother country, except those of adding to her list of vagabonds or beggars, and generating a numerous race of walnut-coloured beings, by way of foil to the complexion of her genuine breed.

I have already hinted my suspicions that the French code, or edict, of 1685, however its regulations may seem calculated for repressing the inordinate severity of masters, and mitigating the hardships of slavery in their colonies, is not obeyed, nor executed, with that energy, which their government, in a remarkable manner, compels in most other instances; this remissness is the more faulty, since, in other cases, to order and to be obeyed, is the same thing: the remark I made has been confirmed by the late publication of one who calls himself an officer in the French service. Speaking of the manner in which their slaves are treated at the island *Mauritius*, he gives the following horrid account: "At day-break, three cracks of the whip are the signal that "calls them to work; each man appears in the plantation with his mattock, where he works, al-"most naked, in the heat of the sun. Their food is ground maize boiled in water, or bread "made of the cassava root. Their cloathing is a scrap of linen. For the least neglect they are "bound hand and foot on a ladder. Their overseer, armed with a postillion's whip, stands "over them, and gives them, on their naked posteriors, fifty, an hundred, or two hundred lashes. "Every lash brings off a portion of the skin. The poor wretch, covered with blood, is then "let loose. An iron chain is put round his neck, and he is dragged back to his work. Some "of these miserable creatures are not able to sit down for a month after; and the women are "punished in the same manner."

"There is a law made in their favour, called the *black code*. This law ordains that at each "punishment they shall receive no more than thirty lashes; that they shall not be obliged to "work on Sundays; that they shall have their provisions weekly; their cloaths yearly; *but "this law is not observed*. Sometimes when they grow old, they are turned adrift to get their "living as they can. One day I saw one of them, who was nothing but skin and bone, cutting "some flesh from a dead horse to eat. It appeared to be one skeleton devouring another. When "a fugitive slave is taken, he has one ear cut off, and is whipped. On a second desertion, he "is whipped, has one ham strung, and a chain fastened about his neck. On a third, he is hanged; "though this seldom happens, the masters being unwilling in general, on such a score, to lose "their property. A slave almost white (*they are mostly brought from Madagascar, whose inha-"bitants differ in almost every respect from the natives of Africa*), threw herself one day at my "feet; her mistress made her rise early, and watch late. If she chanced to sleep, she rubbed "her mouth with *ordure*; and if she did not lick her lips, she commanded her to be whipped.

"She

wiſe, in order to confirm them ſtill further in our religion, as well by the inſtructions they may receive, as by the example of our other ſubjects, and their learning at the ſame time ſome art, or trade, from which,

" She begged of me to ſolicit her pardon, which I obtained. Sometimes, the maſters of theſe " wretches grant ſuch requeſts, and within two days double their puniſhment, reckoning in " tale of laſhes, what they had profeſſedly forgiven. I have daily beheld men and women whip- " ped, for having broken a pot, or forgotten to ſhut a gate; their bloody limbs afterwards " rubbed with vinegar and ſalt, to heal them. I have ſeen them, in the exceſs of their anguiſh, " unable to cry any longer. I have ſeen them bite the cannon on which they were bound. I " ſicken at the recital of theſe horrors. My eyes ache with ſeeing them; my ears with hearing " them!" &c.

" It will be alledged, that the *black code* was inſtituted in their favour. Be it ſo; the ſeverity " of their maſters ſtill exceeds the allotted puniſhments; and their avarice withholds the proviſions, " the repoſe, and rewards, that are their due. If the unfortunate creatures would complain, to " whom can they complain? *Their judges are often their greateſt tyrants.*"

What heart is there, retaining the leaſt degree of human feeling, but muſt revolt at this portrait of French barbarity! how ineſficacious are all the boaſted rules of this *code*, in a country, where the ſubjects univerſally act in diſobedience to them; and what abſolute dominion muſt tyranny and cruelty, the thirſt of blood and revenge, have eſtabliſhed, where even the boſoms of the ſofter ſex are ſteeled to every tender ſenſation, and can indulge in all the wantonneſs of indelicate, and ſavage barbariſm! a ſlavery ſo conſtituted is diſgraceful to any government that knowingly permits it; it were but juſtice to the rights of mankind, that ſuch beſtial inclemency ſhould be ſwept from the face of the earth; if any thing could provoke the divine vengeance, this is apparently of a magnitude to call for its exertion. If the condition of ſlavery be, as ſome inſiſt, in every caſe an evil, here it is the worſt of all poſſible evils; no argument in favour of national trade can juſtify, no pretended delinquency of the ſlave, can excuſe, or palliate it.

The character of the French is not that of a cruel and hard-hearted people, but the contrary; how then ſhall we reconcile this excruciating treatment of their ſlaves, in a manner ſo oppoſite to their character, and to the compaſſionate injunctions of their ſovereign? I am apt to think, that ſuch ſcenes, as this writer has deſcribed, are very rarely exhibited in their older and better eſtabliſhed colonies; for this of Mauritius appears to be in its ſtate of infancy, and the planters reſident in it extremely different from thoſe who are found in their American territories, in manners, morals, education, and character. According to this writer, the firſt ſettlers at Mauritius were ſome French planters from the Iſle Bourbon; who carried with them great ſimplicity of manners, good faith, hoſpitality, and even an indifference about wealth. But when the iſland came to be conſidered as a medium for the Indian commerce, people of all characters reſorted to it. The laſt war brought an inundation of bankrupts, ruined libertines, and cheats; who, driven by their crimes out of Europe, and out of Aſia by the misfortunes of France, here attempted to repair their finances out of the public ruin. " The people here, ſays he, are totally inſenſible to every thing that conſtitutes " the happineſs of an honeſt man. No taſte for letters, or the fine arts. The ſentiments of nature " are utterly depraved. Even the relative affections are extinguiſhed. This indifference extends " to every thing around them. Their houſes are huts of wood that one might carry away upon a " wheelbarrow. Their windows have neither glaſs nor curtains. There is no poſſibility of uſing " carriages, for want of roads, &c."

In a ſociety of people fallen into ſo ſhocking a ſtate of depravation, we are not to look for either the feelings or virtues which civilization produces. The Mauritians muſt be placed far below the ſtandard of the American Indian tribes in the ſcale of mankind. They live in a ſtate of abſolute anarchy;

which upon return of the ſaid ſlaves, the colonies may derive advantage; the ſaid proprietors ſhall be obliged to obtain permiſſion for that purpoſe, from the governor general, or commandants in each iſland reſpectively, which permiſſion ſhall contain the name of the proprietor, and the names of the ſlaves, together with their age, and deſcription.

anarchy; in the practice of every thing that is brutal, vicious, ſhameful, and derogatory to human nature.

It requires all the vigour of the executive power of the French government to reclaim them, by diſcipline, and examples of ſeverity, from their barbarous habits; but as this ſtrictneſs is cautiouſly adminiſtered towards colonies which are but recently planted, and have ſcarcely taken root, ſo we may conclude that no ſuch checks will be applied, until that iſland is more fully peopled; and, therefore, that theſe miſerable ſlaves can have no proſpect of being treated with humanity, until their maſters are firſt humanized; which will only happen by bringing them under the compulſion of wiſe laws, impartially and rigidly inforced.

The worſt effects muſt follow in theſe diſtant members of the empire, when the planters of beſt rank and fortune give bad examples to their inferiors. The writer, before quoted, mentions, that a counſellor (I ſuppoſe he means one of the royal council, who, *ex officio*, is next in dignity *to the governor* and *intendant*) of whom ſome of his ſlaves had made a complaint to the governor, aſſured him (the writer), "that although they were exempted from puniſhment that day, the next he "would have them flead from head to foot." The influence which a declaration of this ſtamp, coming from a perſon of ſo high authority in the colony, muſt carry with it over the minds and practice of the inferior planters, is obvious; as well as, that all the wholeſome regulations of the royal code can avail but little, when they are ſet at nought by thoſe whoſe ſtations require that they in particular ſhould pay the moſt implicit obedience to them. In the Britiſh iſlands, at leaſt the more populous of them, ſuch examples would have no weight with the other ranks of men; for all here are upon a footing of more equality; nor could a privy counſellor either hope to ſcreen his turpitude under the dignity of his ſtation, or expect that his example would incline others to countenance it by their own practice; every one here being at liberty to judge for himſelf, and to judge of others, he muſt expect to have his conduct publicly arraigned, cenſured, and condemned, in proportion as it is found not to conſiſt with the duties and honour of the place he holds. Upon this head, I cannot but eſteem it a happy circumſtance in our iſland, that it ſupports no leſs than four printing-preſſes, which are open to the communication of private as well as public wrongs; to the ſtrictures paſſed on baſe and wicked actions, by whatſoever perſon committed, no leſs than to the approbation of ſuch as are virtuous, and commendable. If theſe engines are neceſſary to the conſervation of liberty, they may alſo tend very eminently to the mitigation of ſlavery; not merely by bringing to light the private abuſes of it, but by the moral leſſons they are capable of inculcating; the refinement they may produce on mens way of thinking and behaving; the caution and reſtraint which they may impoſe upon evil diſpoſitions; the boldneſs of their impeachments; the ſting of their ſatire and ridicule; the force of their perſuaſion; the pleaſure ariſing from their encomium; the efficacy of their caſtigation, and the dread of their popular appeals: the variety of their means, and the happy effects they are capable of producing, give them nearly the ſame degree of power which was formerly comprehended in the offices of tribune and cenſor among the Romans, and render them ſubſidiary to religion and the laws, in the reformation of manners, the diſperſion of knowledge, and the poliſh of ſociety.

That they may effect theſe, and many other beneficial conſequences, is my ſincere wiſh; and that they may be applied here ſucceſsfully, not only to the correction of errors in our political, but in our domeſtic government likewiſe, ſhould be the endeavour of every honeſt and intelligent planter of Jamaica.

III. The

III. The ſaid proprietors ſhall likewiſe be obliged to cauſe ſuch permiſſion as before-mentioned, to be entered in the regiſtry of the juriſdiction of the place where their reſidence is, before their departure; and alſo in that of the Admiralty, at the place of their landing, within eight days next after their arrival in France.

IV. If at any time maſters of ſlaves intend ſending any of them over to France, the perſons charged with their conveyance thither ſhall obſerve what is ordained in regard to maſters; and the names of ſuch perſons ſhall likewiſe be inſerted in the permiſſion aforeſaid, of the governors general, or commandants, and in the declarations, and regiſter, above preſcribed.

V. Negroe ſlaves of either ſex, brought into France, or ſent thither, by their maſters, may not pretend thereby to have obtained their freedom, by coming within our realm; but ſhall be obliged to return to our colonies, when their maſters think proper. If however the maſters of ſlaves neglect to obſerve the formalities required in the preceding articles, the ſaid ſlaves ſhall be free, and ſhall not be reclaimable.

VI. We forbid all perſons to carry off, or inveigle into France, Negroe ſlaves from under the authority of their maſters, on pain of being liable to make good their value, in reſpect of age, ſtrength, and induſtry, according to an eſtimate to be made thereof by the officers of our Admiralty, to whom we have aſſigned, and do hereby aſſign, the cognizance of theſe matters in the firſt inſtance. And in caſe of appeal to our courts of parliament, or ſuperior councils, we will, beſides, that the offenders be condemned for every delinquency, in a fine of two thouſand livres; one third part whereof to enure to us, one third to the admiral, and the remaining third to the maſter of the ſaid ſlaves, when the fine is awarded by the officers of the general court of *marble tables*; but, in caſe the ſaid fine be adjudged by the officers of the eſpecial courts of admiralty, then one moiety ſhall be to the admiral, and the other moiety to the maſter of the ſaid ſlaves, and that without poſſibility of moderating ſuch fines, under any pretence whatever.

VII. Negroes of either ſex, brought or ſent by their maſters into France, ſhall not marry there without conſent of their maſters; and

if theſe conſent to their being married, ſuch ſlaves ſhall thereby become free, and ſo continue.

VIII. We will, that, during the abode of the ſaid ſlaves in France, all that they acquire by their induſtry, or profeſſion, until they are ſent back to the colonies, ſhall appertain to their maſters, provided ſuch maſters maintain and ſupport them.

IX. If any of the maſters having brought or ſent Negroe ſlaves into France ſhall happen to die, the ſaid ſlaves ſhall continue under the authority of the heirs of the deceaſed maſter; which heirs ſhall ſend back the ſaid ſlaves to our colonies, in order to be diſtributed with the other parcels of the eſtate, conformable to the edict of March 1685, unleſs their deceaſed maſter ſhall have enfranchiſed them by his laſt will, or otherwiſe; in which caſe ſuch ſlaves ſhall be free.

X. If Negroe ſlaves ſhall happen to die in France, their peculium, or private acquiſitions, if any they have, ſhall belong to their maſters.

XI. Maſters of ſlaves ſhal lnot ſell or exchange them in France, but ſhall be obliged to ſend them back to our colonies, in order to be there ſold, and employed according to the edict of March 1685.

XII. Negroe ſlaves, being ſubject to the power of their maſters in France, cannot appear there on trials for any civil matters, otherwiſe than as under the authority of their maſters.

XIII. We forbid the creditors of maſters of Negroe ſlaves to cauſe ſuch ſlaves to be ſeized in France, for payment of debt. We reſerve, however, to the creditors aforeſaid the power of cauſing them to be ſeized in manner and form as preſcribed by the edict of March 1685.

XIV. In caſe any Negroe ſlaves ſhall elope from the colonies, and withdraw into France, without permiſſion of their maſters, they muſt not pretend to have acquired their freedom by ſo doing. On the contrary, we permit their maſters to reclaim them, wherefoever they may be found, and to ſend them back to our colonies; for which purpoſe we enjoin the officers of the admiralty, commiſſaries of the marine, and all other our officers whom it may concern, to aid and aſſiſt the ſaid maſters in ſeizing ſuch ſlaves.

XV. The inhabitants of our colonies, who, after coming to France, may be inclined to ſettle there, and to diſpoſe of their plantations in the ſaid colonies, ſhall be obliged, within twelve months, reckoning from the day of the ſale of ſuch plantations, and of their ceaſing

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to be coloniſts, to ſend back to our colonies all Negroe ſlaves, of either ſex, which they may have brought or ſent into the kingdom; and, in caſe the ſaid inhabitants or officers ſhall fail of ſending them back within the term preſcribed, the ſlaves ſhall be free.

SECT. III.

Progreſs of the French ſettlement at *Cape Nicola Mole*.

If the principles and genius of the French government are at all conſpicuous in the preceding example, which has been given of their civil and political ordinances reſpecting their Negroe ſlaves, and ſlave-owners; they are ſtill more ſo, in the other departments of their colony-ſyſtem. Theſe manifeſt a degree of forecaſt, prudence, and vigour, that are not ſo obſervable in any movement of our own torpid machine. There is a ſpirit in the French monarchy, which pervades every part of their empire; it has ſelect objects perpetually in view, which are ſteadily and conſiſtently purſued; in their ſyſtem the ſtate is at once the ſentient and the executive principle. It is, in ſhort, *all ſoul*; motion correſponds with will; action treads on the heels of contrivance; and ſovereign power, uſefully handled and directed, hurries on, in full career, to attain its end. With us, the liberty to which every corporate ſociety, and every individual member of thoſe ſocieties, lays claim, of independent thinking and acting, excludes almoſt a poſſibility of concurrent exertion, to any one finite and determinate point.

If the inhabitants of Hiſpaniola were abandoned to their own conduct and free agency, their iſland would probably be deſtitute of artificial defences. It is, beſides, a natural effect of the continental ſituation of France, the vaſt number of her fortified and garriſoned towns, and large ſtanding army, that ſhe is always in condition to ſpare an ample ſupply of regular troops for protection of her diſtant provinces; of the ableſt engineers for conſtructing or improving their fortifications; and of choſen induſtrious ſubjects, for extending their ſettlements. Her colonies are not only well fortified and garriſoned, but well peopled, and all under the vigilant meaſures of her government. If the income of the French planters is diminiſhed by ſubſidies for theſe ends, ſo that they are unable to vie with *princes of the blood* in expenſive living, when they viſit the metropolis of their mother country, they have ſtill the ſatisfaction left them, of enjoying a competent remainder,

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in full ſecurity, againſt foreign or domeſtic enemies. In ſuch advantages we are glaringly defective; yet we need not deplore the want of them, ſo long as we are provident for our internal ſafety, and our marine force continues, beyond compariſon, ſuperior to any other in Europe. It is however not uninſtructive to remark the activity and ſolicitude with which France has perſevered in ſtrengthening her colonies, by thoſe inſtruments wherein her ability and power have moſt conſiſted; and which are evidently employed to ſuſtain them againſt that counterpoiſe of naval power, which ſhe is ſenſible we poſſeſs. In ſome foregoing paſſages I incidentally touched upon her plan of fortifying *Cape Nicola mole*, as a reſtraint upon our navigation and trade. Some authentic materials, obligingly put into my hands by a friend, have enabled me to diſcloſe her progreſs ſince the late war, in that important undertaking. It cannot be, without very well-grounded reaſons, that the French government has been, and ſtill continues, at an enormous expenditure, ſo earneſtly bent upon the completion of this object. It is doubtleſs intended to ſecond, in future time, ſome very capital machination againſt our commerce in this part of *America*. So deliberate a preparation for offending us in a future war ought not to be ſlightly regarded. It calls on us, in the moſt articulate terms, to ſtand on our guard; that, whilſt the French are ſtrenuouſly occupied in erecting a ſecond *Dunkirk* at Hiſpaniola, we may not too long neglect the ſame peaceful interval, to counteract their favourite ſcheme, by forming a receptacle for our own ſhips of war, at *Port Antonio*, in Jamaica, which is ſo happily circumſtanced to ſerve as a curb upon their fortified port, and a protection for our homeward-bound veſſels, in time of war.

When we ſee our competitors ſo bent on a ſcheme, which can have no poſſible nor adequate object, except that of giving us annoyance, it would be downright folly, if we ſhould continue ſupine, and not catch the alarm. Whoever meditates ſeriouſly on the probable iſſue of their deſign, cannot believe that it forebodes any other than miſchief to Great Britain. But, although this ominous meaſure was very early eſpouſed after the commencement of peace, and ſo publicly diſcourſed of among merchants of the firſt eminence in Jamaica, as to leave no room for queſtion but that their friends *at home* were ſeaſonably apprized of it, yet we do not find, that any ſtep has been taken

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on our part to obviate its malignant consequences. The most politic and necessary counter-arrangement with us would be, the making Port Autonio one principal station for his Majesty's ships.

The French, it is true, have destined their port at the Mole for a naval rendezvous, but it is not their only one. It is however of great moment to them, as it opens immediately into the *Windward Passage*, and, in conjunction with Port Louis, guards the North-west and Western side of their island. They will nevertheless be obliged to divide their force, and keep part of their squadron at Cape François, to defend the Eastern coast. So, in reference to Jamaica, although it may be highly proper that Port Royal should remain the chief station for protecting the Southern coast of the island, yet it is most necessary that detachments should be constantly attendant upon the N. E. and N. W. ends, to cover those parts from attack, and give safer conduct to our navigation; the N. E. in particular, because, like Cape Nicola, it commands the Windward Passage, which if we should be able to scour with a fleet of superior strength, all the expensive preparations made or making at the *Mole*, will be rendered unprofitable to the French, and harmless to ourselves; for our navigation through the Passage, in time of war, might, in this event, be as safe as that of the British channel. We cannot indeed be certain, nor ought to indulge a confidence, that we shall always hold this superiority in a future war. But, sanguine as our expectations may be in this respect, it is wise to provide even against a despicable enemy, and keep even pace with him in taking precautions, as well for attack, as defence. Where-ever such a station is projected, there ought to be a competent establishment of fortifications, and troops, to secure the port from insult, and the magazines of stores and implements from depredation, whilst the ships are on service at sea. This is a material branch of the French plan. Their mole is to be made as impregnable, as forts, batteries, and cannon, can render it, in order that it may shelter their men of war and privateers, while refitting, or when they are too weak for hazarding an engagement. The conveniences preparing for them, joined to the natural advantages of the place, will enable them, after a battle, to repair their damages in a very short time, and proceed upon their cruize again, long before our fleet could possibly reach Port Royal, to refit,

refit, and work against the trade wind and current, to regain their post in the Windward Passage.

In such a tedious interval, our trade cannot fail of being very much exposed. This should furnish an additional reason to shew the propriety of destining a considerable part of our squadron to Port Antonio; not to mention the speedy assistance, which a force so stationed, and collected at the Windward part of the island, might occasionally afford to the Leeward coasts and channels, whenever they might be in need of it.

I have thrown out these arguments, not with a view of anticipating the reader's judgement, but rather as fair and unaffected deductions from the following state of the French port, and the works there carried on, or (rather) by this time perhaps already perfected.

Previous to the commencement of the late war, this place was intirely unsettled; the lands surrounding it, for the space of four or five leagues, being rocky, barren, and incapable of producing any sustenance for man or beast. During the heat of the war, it was much frequented by our cruizers, but chiefly the privateers, as well for the sake of taking in wood and water, as for the conveniency it afforded them to annoy the enemy, and distress their homeward-bound merchant ships, in their passage from the Bite of Leoganne and the Southern coast of Hispaniola. Here too they generally careened their vessels in the bason, which is so shut up within the land, that they could not be discovered by any ships in the Offing.

The French, determining to preclude us from holding so advantageous a post in future wars, have entered at the same time into a more extensive speculation, and bethought themselves how to render it, not only an asylum to their own fleets, but a source of never-ceasing annoyance to us. They resolved to fortify the harbour in the strongest manner, and settle the adjacent country, as far as it might admit. With these intentions, the present peace was no sooner ratified, than they brought near five thousand *Acadians* to this place, and fixed a colony likewise of between two and three hundred German families, at about fifteen miles distance, in the back country, who were to cultivate provisions, for support of the new town at the *Mole*, from which a most excellent road of communication was also made to their settlements. In the first three years these Acadians were subsisted

ſubſiſted at the expence of the government; during which time great numbers of them died, particularly the men, owing chiefly to the badneſs of their habitations, which they provided for themſelves, and which were little better than huts, covered with thatch, by no means ſufficient to defend them from the inclemency of the weather; ſo that at preſent very few of the men are alive; the women fared better. Moſt of the female inhabitants at the Mole are Acadians, and ſeveral others of them married, and removed to other ſettlements of the colony.

About five years ago, the French, following our example, declared this a *free port*; in conſequence of which, the towns-people have derived a ſubſiſtence, that the land adjacent could not afford. The houſes, which at firſt were very mean, have been all, within theſe laſt three years, rebuilt, with materials from North America, framed and ſhingled. The town now conſiſts of four hundred good houſes, and contains the following public edifices; a houſe for the commandant; a very excellent one, of free-ſtone, for the ſecond in command; houſes for the commiſſary, intendant, treaſurer, collector, and other dependent officers; a large repoſitory for the king's ſtores; a maſt-houſe, of ample dimenſions, and well filled with maſts and ſpars; an hoſpital, and a church.

On the South ſide of the town a ſmall river diſcharges itſelf into the harbour; this is taken up at ſome diſtance, and conducted to the higheſt quarter of the town, from whence it is diſtributed in ſmall rills to every ſtreet, in order to furniſh the inhabitants with good water for their domeſtic uſes, and for refreſhing their gardens, in which figs, grapes, plantane-trees, and a variety of pot-herbs, thrive remarkably well: this is intirely owing to artificial irrigation; for without it, the ſoil, conſiſting only of the ſea-ſand with a very ſmall intermixture of mould, would be incapable of producing theſe plants.

Remarks on the Harbour and Fortifications.

The harbour lies Eaſt and Weſt, in depth about two miles and an half.

The Northern ſhore ſeems to be iron-bound for ſix to twelve feet from the water's edge, then extending in a level for about one hundred

hundred and fifty feet, and beyond this it appears to rise gradually like a *glacis* till it attains an elevation of about thirty perpendicular feet; and here a flat begins, which continues the whole length of the harbour, and is covered with coarse grass and straggling bushes, such as are commonly produced near the sea-side.

The level on the Northern point, at the entrance of the harbour, seems much broader than what has been just mentioned, and extending from two to three hundred yards. Upon this are thirteen cannon, belonging to a battery that was formerly erected here.

The Southern shore appears likewise to be iron-bound, very steep and lofty, and covered with brush-wood; the point on this side has a flat of about 150 yards over.

The entrance is about one mile from the Northern to the Southern point; the channel is upwards of sixteen fathoms deep, but near in with the Northern shore there is ground from nine to seven fathom. Under the Northern battery the anchorage is in fifteen fathom; but ships in tacking to come to an anchor, are very much exposed to this and another battery erected at the bottom of the harbour.

The king has *four hundred and fifty* Negroes employed under the direction of an able engineer, in carrying on the fortifications, and other public works. The two batteries above-mentioned are constructed at each end of the town. The Southern mounts twenty-one guns; thirteen in one line, and four in each of the flanks. The Northern has embrazures for thirty-nine pieces of cannon; within this battery are built forty-seven houses, disposed in regular streets, each house about twenty by twenty-four feet diameter, framed and shingled; forty of these are allotted for soldiers, and the remainder for their officers. There are likewise two guard-houses, one at the Parade near the Southern battery and commandant's house; the other at the Point where the boats land, and adjacent to the custom-house, treasury, and king's house.

At some distance from the Northern fortress, stands the powder-magazine.

About six hundred yards from this fortress, to the N. North-east of the town, a sandy point stretches out into the harbour, shutting in a very fine bason of about three quarters of a mile in breadth, in which is excellent anchorage, and where ships of any burthen

may ride with perfect ſecurity even in a hurricane. Cloſe in with this ſandy point there is a depth of water, ſufficient for the largeſt veſſels to careen; and here the neceſſary buildings and works are to be erected for heaving down, and careening the king's ſhips; it is fortified with four pieces of cannon, ſo diſpoſed as to rake any veſſel that might attack the Northern battery; and, in order to render the acceſs more difficult to an enemy's fleet, a citadel is projected to be built on the North point at the entrance of the harbour, which is to mount one hundred guns, and co-operate with a ſtrong battery intended on the oppoſite point on the South ſide.

Trade and Commerce.

In order to facilitate their communication with the ſettlements inland, to accommodate the merchants, traders, and planters, and expedite the king's ſervice, a very good carriage road is formed from this town to Cape François, and a regular poſt eſtabliſhed. North-American lumber is at all times permitted to be imported, and melaſſes exported. At particular conjunctures the port is open for all North-American commodities, ſuch as flour, fiſh, *&c.* At other times theſe articles are prohibited. This prohibition ſeems to ariſe from complaints which are lodged by the merchants trading from France, when they cannot find vent for their European commodities of a ſimilar nature, depreciated by what are introduced from North-America, which are furniſhed at a much cheaper rate. Upon ſuch applications made by the French merchants, the *general* frequently orders the port to be ſhut, with reſpect to ſuch articles as particularly interfere with their home manufactures. But the inhabitants being always diſpoſed to purchaſe the goods they want, at as low a price as they can, find ways and means of coming at whatever the North-Americans bring for their market. Upon entry at the cuſtom-houſe no oath is impoſed on the maſter when he reports his cargo; and, by the help of a generous fee, their veſſels may obtain a permit to diſcharge their cargoes, at ſome or other of the different Barquadiers within the Bite of Leoganne; by which means they have opportunity of buying a load of ſugars, which the planters are ever ready to furniſh, as they obtain a better price from the Americans than from the French traders.

Theſe veſſels can at all times procure licence to take in a lading of melaſſes at any port in St. Domingo; this affords them another opportunity of vending any prohibited articles; and they are further aſſiſted in this illicit commerce by the French ſloops which ply in the offing, and receive their goods before they come into port; the American veſſels then enter light, and may embark whatever commodities of the iſland they pleaſe, only taking care to lay melaſſes in their upper tier. Not only the planters, but the officers, find it advantageous to give them encouragement; and the latter connive at many little irregularities, which happen in the mode of conducting this trade; ſo that it is no wonder that the Americans are able, ſomehow or other, to buy or to diſpoſe of whatever articles are moſt convenient for them.

Now and then, upon violent complaints of the French merchants, ſome ſeizures have been made of theſe interlopers, for having ſugars on board; but, after detaining them for ſome time, they have generally been releaſed, and ſuffered to proceed on their voyages.

It does not appear that the Dutch carry on any trade either at the Mole, or any other port of Hiſpaniola; and if they have any with the Spaniards, it is probably of very little conſequence; ſo that the Americans now ſtand almoſt unrivalled, without excepting ſcarcely even the ſhipping of France; and may with truth be affirmed to have contributed nearly as much as the French themſelves, towards the eſtabliſhment of this new port, its town, and trade in particular; and in a general view, to the advancement of moſt of the other trading ports of Hiſpaniola, the encouragement of its ſtaple productions, and its preſent very flouriſhing and formidable ſtate.

Port Duties.

The duty on anchorage is from ſix to twelve dollars, according to the tonnage of every veſſel.

On ſalt-fiſh, one pound *per cent.* on the ſale.

Lumber, flour, and other articles, two pounds *per cent.*

Thus theſe duties can never be oppreſſive on the American importer, becauſe they are levied *ad valorem*, and paid in effect by the French conſumers. Their product is applied towards the carrying on the fortifications and other public works, and contingent expences

pences of the port; the deficiency, if any happens, is made up from the treasury of the island.

Foreign Shipping.

The number of vessels cleared in the year 1772, from the custom-house, amounted to between two and three hundred sail, consisting chiefly of brigs and snows, with some few ships, all from different ports of North America. Adding to these the other foreign vessels, the French coasters, and European traders; the whole amount is not much short of four hundred sail. Most of the vessels bound to Jamaica from North America call in here, and few of them but are complaisant enough to pay another visit on their return.

The vessels which load or unload here, for the greater part lie close to the town, with their stern anchors on the beach, which shews how conveniently this place is adapted, in every point, to invite trade, and expedite mercantile transactions.

When we reflect that less than ten years ago it had neither house nor inhabitant, it appears next to incredible, that in so short a time, this desart should be filled with people, the harbour crowded with shipping, and its whole aspect changed, from poverty and desolation, to a well-established, secure and opulent *emporium*, advancing still by hasty strides to a superiority and grandeur beyond the oldest and most boasted seats of trade in any of the British islands. We may envy, but I fear we never shall equal, this wonderful pattern of French policy, in founding; industry and ability in accomplishing; so truly noble a fabric: unconcerned spectators of it as we are at present, we must expect that the very next war in which we engage against France, will make us most thoroughly sensible of its vast importance.

SECT. IV.

On the antient Indian *Inhabitants of* Jamaica.

The Decades of Peter Martir (which till lately I had not an opportunity of consulting) afford us very little information relative to the ancient state of this island; a few particulars however are to be found in his collection, which may throw some light on those matters in our Jamaica-history, that have been doubtfully or erroneously treated of.

The

The name *Jamaica* [*u*], or *Jàmica* [*w*] was given to it by the Indian inhabitants; yet ſome Spaniſh authors have thought that it was alſo the *Babeche*, or *Bohio* (land of cottages), to which Columbus was directed by the people of the *Lucayo* or Bahama iſlands; for when he enquired the place, whence they furniſhed themſelves with gold and pearls, they told him there was abundance at *Bohio*, pointing to the Eaſtward, which courſe brought him to Hiſpaniola; but even this iſland was called by its natives *Quiſqueya*, (the great country) and alſo *Ayti*, or *Hayti* (uncouth), by which latter appellation it was likewiſe known to the *Caribes* of the windward *Antilles*. It is probable, that the Lucayans only meant ſome particular diſtrict or province, as (for example) the territory of the cacique *Bohechio*, which lay between Cape Nicholas and Tiburon, on the North-weſt part of Hiſpaniola, and neareſt to Cuba, conſequently the part with which they were beſt acquainted.

Columbus was afterwards led into a ſimilar miſtake at Hiſpaniola, when, upon a like enquiry about their gold, the Indians there mentioned ſeveral different provinces, or petty kingdoms, where it was found in greateſt plenty, and which the admiral miſtook at firſt for the names of as many different iſlands; beſides, Jamaica produced but very little gold in compariſon with Hiſpaniola; and, by the Spaniards who firſt ſettled in it, was believed to contain neither that precious metal, nor pearls. The like opinion was formed of Cuba, when it was firſt diſcovered.

Jamaica was compared by Columbus to the iſland of Sicily, both in regard to its extent and fruitfulneſs; he ſuppoſed it about one hundred and fifty miles in length, and ſixty in its utmoſt breadth, which comes near to exactneſs, and ſhews what a degree of accurate geometrical knowledge that able navigator poſſeſſed. At this time, the hills adjacent to the coaſt were covered with thick woods; and to this cauſe he attributed, that, in paſſing along the South-weſt end, very heavy rains came off ſhore [*x*] with great regularity every afternoon.

[*u*] Primam reperit Inſulam, quam Incolæ Jamaicam vocant, p. 7.

[*w*] Devenit ad Inſulam, quam Inquilini appellant Jamicam. De Chriſtoph. Columb. Navigat. Pet. Mart. p. 91. Cap. 98.

[*x*] In the month of July.

The

The plants and fruits of this country were found to be much the ſame as thoſe of Hiſpaniola; with this difference, that the proviſions were better flavoured and more abundant, and the cotton eſteemed of a finer ſtaple, than in the adjacent iſlands. It was commended for the agreeable temperature of its air, the fertility of its ſoil as well near the coaſt as inland, and the multitude of its convenient harbours. Martir calls it, "a rugged theatre for military opera-"tions;" and, no doubt, if the Indians had been of a diſpoſition to maintain it againſt their invaders, they might have held out a long time, by withdrawing into the mountains. When Columbus circumnavigated the coaſt, they ran from all quarters with arms in their hands, and menacing looks, to diſpute his landing; this induced him to think that they were more warlike than their neighbours, among whom he had met with a different reception; but, like the people of *Otaheite*, after one or two ſkirmiſhes, in which the Spaniſh fire-arms eaſily prevailed, they contracted friendſhip with the admiral, ſhewing a far ſtronger inclination to commerce than to war. When therefore he was ſome time after forced by diſtreſs to take ſhelter here, he acknowledged it a great bleſſing, that Providence had conducted him to a place, where proviſions were ſo abundant, and the natives ſo humanized, and deſirous of trading with him.

They are repreſented by all authors, as a tractable, docile people; equal to any employment; modeſt in their manners; of a quick and ready genius in matters of traffic, in which they greatly excelled the neighbouring iſlanders; more devoted alſo to mechanic arts; more induſtrious; and ſurpaſſing them all in acuteneſs of underſtanding. They dwelt in cottages; and the iſland was ſo populous, that it appeared to Columbus to be full of villages. Theſe conſiſted of ſeveral houſes, and the buildings muſt have been extenſive, ſince the cuſtom was for a whole generation to live together in one houſe; we read of a village in Cuba, conſiſting only of fifty houſes, that contained about two thouſand perſons, or twenty to each houſe. The principal articles of their food were the *guana*, and the *utia* (or Indian coney). They had no other edible quadrupeds, unleſs we reckon the younger alligators. Fiſh, ſalted and freſh; crabs; parrots; fowls, tame and wild; caſſava, whoſe root they called *yucca*;

yucca; maize, tomatoes, potatos, cocos, pulſe of various ſpecies, and a pepper named *axi* (Indian pepper); to which may be added ſeveral other indigenous fruits; they had likewiſe a fermented liquor reſembling ale, which was prepared from the maize; this does not appear to have been their common drink, but produced only on feſtive occaſions, when it anſwered the purpoſe of intoxication full as well as our European ſtrong liquors.

Cotton they cultivated in ſuch vaſt plenty, as would incline us to think they exported a conſiderable quantity; for they conſumed but little of it themſelves in their cloathing; they went almoſt naked; their cotton manufacture conſiſted chiefly of *hamacs* or beds, muſkeeto-nets for theſe beds; a ſort of caps to cover their heads; and ſmall aprons for decency. Their fiſhing-lines and nets were of bark. They reſembled the people of Hayti or Hiſpaniola in cuſtoms, religion, hiſtorical ſongs; in their tools for agriculture and other work, their domeſtic utenſils, and their weapons of war. The ſtructure of their canoes was likewiſe the ſame. The larger ſort of theſe veſſels were called piraguas. They were made of cedar, or the great cotton tree, hollowed, and ſquare at each end like punts. Theſe piraguas were not flat-bottomed like the canoes, but much deeper. Their gunnels were raiſed with canes braced cloſe, and ſmeared over with a bituminous ſubſtance, to render them water-tight; and they had ſharp keels. The canoe was probably intended only as a fiſhing-ſkiff to ply in ſhoal water along the coaſt, or up the rivers; but the piragua for voyages at ſea, and carrying on trade with their neighbours. Some of their habitations were furniſhed with chairs of highly poliſhed ebony; and none were deficient in variety of utenſils, both earthen and of wood, very curiouſly wrought.

From the reſemblance which the language of theſe iſlanders bears, in ſome reſpects, to the Spaniſh, I am apt to ſuſpect that many of their words have been altered by the Spaniſh mode of pronunciation, and the difficulty which the diſcoverers found in articulating and accenting them, without ſome intermixture of their own patronymic. In ſome this is exceedingly obvious, where the letter *b* is uſed indiſcriminately for *v*, agreeably to their idiom. This perverſion may eaſily lead us to aſcribe a Spaniſh or Mooriſh origin

to the names of places, ſuch as rivers, mountains, head-lands, *&c.* which in fact are of Indian derivation. Thus the article *gua*, ſo commonly met with both in theſe iſlands and on the Southern continent, was often prefixed or appended to the Indian names of places and things, and even of their provincial *caciques*. Of the latter were Gua-rionexius, Gua-canarillus, Gua-nabo, and others. Of the former a vaſt multitude occurs, as Gua-nama, Xa-gua, Gua-há-gua, Camayá-gua, Aicay-azá-gua, Má-gua, Nicará-gua, Verá-gua, Xará-gua, Gua-ríco, Ni-gua (Chigger), *&c.*; which may ſeem to confound them with derivatives from the Spaniſh or Mooriſh word *agua* (water). So the terminations, *ao*, *ana*, *coa*, and *boa*, or *voa*, as Manabax-ao, Cib-ao, Gu-ana, Magu-ana, Yagu-ana, Ligu-ana, Zav-ana, (Savannah), Furac-ana, (Hurricane), Caym-ana, Guaiac-ana, (Guiacum), Haba-coa, Cauna-boa, and ſo forth. The names therefore occurring in our iſland of Liguanea, Cagua, Tilboa, Guanaboa, Guadibocoa, and others of ſimilar finals, are with more propriety to be traced from the Indian than the Spaniſh dialect. There ſeems to be no queſtion, but that theſe iſlands were peopled by emigrations from the continent ſo near to them; but it is no abſurd conjecture, to ſuppoſe that they did not all proceed from one part or diſtrict of it. Cuba lays convenient to receive ſupplies from Eaſt Florida, and the gulph of Mexico; from Cuba to Hiſpaniola and Jamaica, the progreſs was equally eaſy; but as the Indians of this latter iſland were ſo ſtrongly diſcriminated from the others in ſeveral qualities, ſuch as their ſuperior ingenuity, ſpirit for traffic, induſtry, and bold temper, it is probable that they drew ſome acceſſions from thoſe provinces which border upon the gulph of Honduras, and more particularly that of Yucatan, lying in the ſame parallel of latitude. It is not unlikely, that traders from that great commercial province might reſort hither at certain ſeaſons of the year, to take off their ſuperfluous cotton, an article in vaſt demand on the continent, and particularly in Mexico. Such voyages could, even in thoſe days, with the greateſt facility, be made to Jamaica, which lies ſo near to Honduras and Campeche, from whence the paſſage is marked out by nature, by a line of little iſles and cayes, as the Santanillas, Serranas, Serranillas, and others, continuing the track almoſt the whole way. Their larger veſſels were capable of

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much more arduous expeditions; for at Cuba Columbus found canoes ninety-five ſpans in length, and able to hold fifty perſons. At Hiſpaniola he ſaw ſome piraguas of twenty-five oars, as large as brigantines; and what is ſtill more to our purpoſe, in paſſing through the Honduras Gulph, he fell in with one as long as a Spaniſh galley, eight feet in breadth, manned with twenty-five hands, laden with Weſtern commodities, and bound, as he imagined from the province of Yucatan; in the middle of it was an awning compoſed of mats, made of palmeto leaves, and underneath it were diſpoſed ſeveral women and children, and their goods, in ſuch ſecurity, that neither the rain nor ſpray of the ſea could annoy them. The lading conſiſted of great abundance of cotton cloths dyed with ſeveral colours and curiouſly wrought; ſhort ſhirts or jerkins of the ſame materials, but without ſleeves or collars; and clouts or aprons for men and women in their undreſs. They had wooden ſwords edged with ſharp ſtones grooved in, and fixed with thread and bitumen, copper hatchets for hewing wood, ſmall bells and plates of the ſame metal, crucibles for melting it, and cacao nuts, which, on the continent, paſſed current as money.

That the Indians, therefore, on this coaſt were in no want of convenient means for tranſporting whole families, nor unſkilled in trade and navigation, muſt be very apparent; add to this, that the clearneſs of the heavens, and brilliancy of the ſtars in this hemiſphere at night, muſt have greatly aſſiſted their navigation, and enabled them to ſhape their courſe with tolerable accuracy. It is ſaid of the Indians of Yucatan, that, in order to know the hour of the night, they obſerved the evening ſtar, the Pleiades, and the conſtellation of Orion. By day they had particular names aſſigned to different quarters of the heaven, and governed their reckonings of time by them. But their voyages at ſea were probably made by night, to which they had ſeveral inducements: a cooler atmoſphere, which leſſened their toil of rowing; a calmer ſea, and leſs wind to contend againſt; laſtly, a diſtinct view of thoſe ſtars or planets which ſerved for their guides. They lay by, perhaps, in the day-time under ſhelter of ſome little caye, or iſle, of which there are ſuch multitudes in this ſea.

The people of the continent, and of this diſtrict in particular, had neither the uſe of iron nor letters; yet gave ſuch proofs of advanced

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ſkill and ingenuity in arts and ſciences, as juſtly raiſed the admiration of their European diſcoverers. The Spaniards looked with aſtoniſhment on a race of men, who, in this ſequeſtered part of the world, by mere dint of natural genius, unaided by books or information, had attained ſuch lengths towards perfection in contrivance, delicacy, elegance, and utility, as appeared in their various fabrics, apparel, and ornaments; edifices, and utenſils; public works, and regulations; their methods of computing time, and of communicating or recording events: ſo apt and lively were their faculties, that, as ſoon as the Spaniards inſtructed them in the art of writing, they immediately wrote their prayers, and traditional odes or ſongs, which before that period they had been uſed to recite; and quickly copied every other European model introduced among them. We are, I think, upon the whole, to conſider Mexico and Peru as the two grand ſeats of Indian arts, civilization, knowledge, government, and trade; that the iſlands were peopled with colonies emigrating from theſe mother ſtates; that they were children of the empire, but paid no tribute, nor acknowledged any fealty or dependance; that they retained ſome traits, but thoſe extremely imperfect, of the religion, manners, and cuſtoms, of the larger body, from whom they had ſeparated, loſing, by conſequence of that ſeparation, in proceſs of time, much of the civility, and thoſe arts, inventions, and refinements, which diſtinguiſhed the Indians of the continent ſo greatly above theſe ſmall and diſperſed communities.

The Caribes, or inhabitants of the leſſer Antilles, ſeem to be a tribe proceeding from the more Southern parts of the continent, and maritime anceſtors.

We find them ſtigmatized by the other iſlanders with the name of canibals, yet they were not wholly deſtitute of mechanic ſkill; for when Columbus firſt landed at Guadaloupe, he diſcovered in one of their huts a large quantity of ſpun cotton, and a curious ſort of loom for weaving it; this diſcovery proves alſo, that they practiſed agriculture, and cultivated cotton, as well as the natives of the larger Antilles. But they differed very widely from the latter in many other reſpects, for they were fierce, ſavage, and rapacious; led a roving piratical kind of life, like the corſairs of Barbary, and made frequent deſcents on the larger iſlands, even as far as Cuba, carrying off captives, but forming no ſettlements on their coaſt. Theſe were the only foreign enemies

which the Indians of Cuba, and adjacent iſlands, appear to have encountered, until the Spaniards came among them.

We are not aſſured whether the Indians of Jamaica had more than one cacique; but as their form of government reſembled that of the Haytians, it is likely that the iſland was quartered into provinces ſubject to the authority of their reſpective chiefs. Theſe caciques, if we may believe what is related of the Indians in Hayti or Hiſpaniola, maintained their power chiefly by working on the ſuperſtition and credulity of the common people by means of their *cemis*, or oracular idol: this was a hollow wooden image, within which the prieſt could conceal himſelf, and deliver mandates or reſponſes through a tube or pipe. They had alſo in their cuſtody three conſecrated ſtones; one of which was efficacious for promoting the ſucceſs of their crops; the ſecond, for the ſafe and eaſy delivery of pregnant women; and the third, for obtaining rain, or favourable weather: but theſe ſtones appear to have been regarded rather as a kind of amulets than divinities. The *behiques*, *buutios*, or phyſicians, acted likewiſe in the capacity of prieſts and conjurors, and made themſelves extremely uſeful to the caciques; for by combining all theſe trades, they were better enabled to influence the people in conformity to the pleaſure of the cacique, and the juncture of affairs. We cannot, however, depend implicitly on the accounts which the Spaniards have given of their religious ceremonies and opinions; for they are allowed by ſome writers to have believed in one God, the immortality of the ſoul, and a ſtate of future bliſs; whereas, others repreſent them addicted to groſs idolatry, and their notions of a Deity, or the ſoul, extremely confuſed and abſurd.

We may venture to believe, that each cacique, with his confederate band of jugglers, framed whatever model of religion he thought fit for his own reſpective province, only taking care not to aboliſh any favourite popular ſuperſtition. Their government, taking its colour from the ſimplicity and mild diſpoſition of their ſubjects, ſeems to have been eſtabliſhed more on policy and cunning than violence; gentleneſs characteriſed the ſpirit of public authority, no leſs than their private manners. Columbus relates, that when he firſt arrived at Hiſpaniola, the cacique of the neighbouring territory paid him a viſit: it ſeems the iſle of Tortuga was likewiſe ſubject to the dominion of this chief. On the following day, a piragua came in from Tortuga, with forty Indians on board,

board, who no doubt had heard of theſe wonderful ſtrangers, and were attracted by a very natural curioſity to ſee them and their ſhips. The cacique, however, was highly diſpleaſed at their intruſion, and, ſtanding up on the beach, threw ſome water and ſtones at them in token of his reſentment; upon which they very ſubmiſſively tacked about, and returned home again without a murmur. Their attachment to theſe chiefs was unbounded and inviolable. In their temper they had no ſpark of cruelty. Of the placability of their diſpoſition they exhibited many ſhining examples. They frequently diſdained to kill the Spaniards, when they had them in their power, although thoſe propagators of Chriſtianity, impelled by a mixture of bigot rage and avarice, committed the moſt bloody and tyrannical exceſſes; which ſeemed to call for, and to juſtify, the moſt vindictive retaliations. During the war they proſecuted in Cuba, the Indians ſlew as many of theſe enemies as they could, in fair open combat; but whenever they ſurprized a party by ſtratagem, and took them priſoners, they only ſeized their cloaths and weapons, but ſpared their lives. They were unqueſtionably the moſt generous of foes, and their natural diſpoſition truly amiable, benevolent, and noble.

This character ſtands fully atteſted and confirmed by that of the modern Indians on the *Moſquito Shore*, who are repreſented by all the Engliſh, who have been the beſt acquainted with them, as a mild, honeſt, docile, faithful, modeſt, friendly, inoffenſive, and naturally enlightened people; who require only that artificial culture and civilization, which religious inſtitutes, and ſcholaſtic improvements, beſtow, to make them rank among the moſt virtuous, and uſeful ſubjects of Britain. Upon ſuch minds, the endeavours of the Miſſionaries, that have been employed by the *ſociety de propagandâ fide*, were ſucceſsfully and laudably exerted. Theſe people are moſt worthy of being taught the principles of the Chriſtian faith, for they already almoſt practiſe its doctrines from their natural propenſity to good, and abhorrence of evil. Let me here take occaſion to expreſs a wiſh, that the noble and patriotic ſpirit of that ſociety may ſtill perſevere with unabated zeal; and ſhould their comprehenſive, generous plan, admit of ſtill further extenſion, it might likewiſe embrace the free *wild Negroes*, eſtabliſhed in our iſland, who would indiſputably be more confidential and uſeful ſubjects, if they were reclaimed from their preſent barbariſm, and raiſed

raiſed above the common herd of Blacks, by the neceſſary effects of baptiſm, and religious precepts. The experiment, at leaſt, is worthy trial, and with great propriety may be commenced in the pariſh of St. George, where there is a fine glebe of ſix hundred acres of land aſſigned near Crawford Town. The zeal of the ſociety, if not its munificence, might here be well employed in founding a miſſion, or, perhaps, adding an annual ſum to the parochial ſtipend, as an encouragement, and to enable the miſſionary or rector to engage heartily in ſo pious and politic a work, which the legiſlature of the iſland would doubtleſs ſecond with every co-operation in their power. In reſpect to the miſſion on the *Moſquito Shore*, much advantage might be reaped beyond what hitherto has been experienced, if, in addition to a good and intelligent mind, the gentleman appointed ſhould likewiſe poſſeſs ſome ſkill in botany, and other branches of natural ſtudy. The foundation of proper ſchools is an indiſpenſable ſtep; chapels, or houſes for public worſhip, are not leſs ſo. Theſe particulars may at firſt demand an extraordinary charge; yet their operation bids ſo fair for attaining many deſireable and important objects, that, I truſt, they will engage a ſerious and favourable attention from *the ſociety*.

In the year 1507, Alonzo de Ojeda, and James de Nicueſſa, procured from Ferdinand a very extenſive grant on the continent, and the vice-royalty of Jamaica. James Columbus, ſon of the admiral, repreſented in vain that the iſland had been diſcovered by his father, and ſuch a grant was injurious to the claims of his family [*y*]. He could only obtain, after a long courſe of ſolicitation, the titles of admiral, and governor of the Indies [*z*]. In virtue of theſe nominal poſts he repaired to Hiſpaniola, with a full determination to ſupport his pretenſions againſt the appointment made by the crown, and to obſtruct his

[*y*] By the original condition or charter granted to Columbus, in 1492, he was conſtituted admiral of all diſcoverable iſlands and countries, for his own life, with remainder to his heirs for ever, and all pre-eminencies and prerogatives to ſuch office appertaining, in the ſame manner as enjoyed by the grand admiral of Caſtile; alſo vice-roy, and governor-general; but the crown reſerved to itſelf the right of appointing ſub-governors. He was to enjoy the tenth of all mines, jewels, and other valuables, and merchandizes; the other nine ſhares to enure to the crown. And, upon his contributing one-eighth part of the expence of fitting out any ſhips to be employed in trading to ſuch countries, he was to be entitled to one-eighth part of the profits of ſuch ſhips.

[*z*] But although the family was in diſgrace at this time, through the envy, and falſe repreſentations of ſeveral needy court-dependants; yet, in conſideration of his father's merits, he was reſtored, in 1520, to the vice-royalty of Hiſpaniola, and the other iſlands diſcovered by his father, and to his rights as admiral, but under ſome reſtrictions.

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two competitors as much as poſſible, that they might not reap all the benefits they expected. Fortunately for him, they had both turned their thoughts at this juncture to the making further diſcoveries and conqueſts upon the continent, ſo that he was left more at liberty to purſue his ſcheme without interruption.

He made choice of Juan de Eſquivel, an experienced officer (who had ſerved ſome years in Hiſpaniola), and diſpatched him with ſeventy men to effect a ſettlement at Jamaica, of which he was to take the command as his lieutenant governor.

This officer, ſoon after his landing on the iſland, began to parcel out and diſtribute the country and inhabitants among his followers; which the Indians diſliking, betook themſelves to the mountains, and ſtood on their defence; but Eſquivel, after ſeveral engagements, in which the dogs he had brought with him were almoſt as deſtructive as his muſquetry, found means at length to cut off the chiefs, or leaders, of the malecontents; the reſt ſubmitted; and, after being divided according to his original plan, they were employed in planting cotton and proviſions. A breed of Spaniſh cattle, hogs, and horſes, was next introduced, which increaſed very faſt. The cattle improved prodigiouſly in bulk; and the hogs, by feeding on the plums, and other fruits of the country, not only grew to an immoderate ſize, but acquired ſuch excellence, that their fleſh was eſteemed the moſt delicious and wholeſome of all animal foods. Several ſpecies of garden-ſtuff were obſerved to come up ſurprizingly quick; lettuce, cabbage, borrage, radiſhes, and the like, were fit for gathering in ſixteen days from the time of putting in the ſeed; and gourds, cucumbers, and melons, within the thirtieth day. Eſquivel, perceiving the Indians more tractable than he had expected, ſoon won them over to ſubjection by the moderation of his government, and without any further effuſion of blood. This commander has been highly extolled for his prudent and temperate behaviour. His ſubjects continued to labour hard in their cotton plantations, and other improvements, which he had planned for rendering this a permanent and lucrative colony; ſo that the exportation from it about the year 1511 grew to be conſiderable, and it furniſhed copious ſupplies of proviſion to the Spaniards of the two neighbouring iſlands, who were chiefly occupied in quelling and extirpating the natives. At this period he had probably, with the aſſiſtance of the Indians, laid the foundation

foundation of Sevilla Nueva; which, from the following account, appears to have been ſituated very near to the inlet where Columbus ran his two ſhattered veſſels on ſhore. We are told by Herrera, "that "whilſt the admiral was detained here, waiting for a ſhip from Hiſpani-"ola to carry him off, a party of his crew, headed by Francis de Porras, "entered into mutiny. Theſe revolters, after rambling ſeveral days "about the country, committing violence on the peaceable natives, "marched towards the ſhips with intention to attack him;" and being advanced within a *quarter of a league's diſtance* from them, halted at an Indian town called Mayma, where ſome years afterwards the Spaniſh colony named Seville was eſtabliſhed." It is moſt probable, therefore, from this relation, that the inlet to which the admiral gave the name of Santa Gloria, was not, as ſome writers have ſuppoſed, what is now called Port Maria (which is many leagues further Eaſtward), but the cove known by the name of Don Chriſtopher's, which ſeems to correſpond with the event, and is not much more than a quarter of a league diſtant from Seville, or St. Anne's Bay.

It is uncertain at what time the ſugar cane was introduced into Jamaica. It is ſaid to have been brought firſt into Hiſpaniola, by one Aguilon, of that iſland, who in the year 1506, having carried with him ſome plants of it from the Canaries [*a*], they were found to thrive luxuriantly in this newly-diſcovered ſoil, inſomuch that every root produced from 20 to 30 canes [*b*]. The cultivation of it was, thereupon, very zealouſly encouraged by the Jeronomite friars, who held a large ſhare of authority, and, perhaps, of property, there. Theſe patriotic ſons of the church offered loans of five hundred pieces of eight to every adventurer who ſhould erect a ſugar-mill; and the premium operated ſo well, that three Spaniards ſet up one of theſe engines in co-partnerſhip, at Laguata, near the river Nizao; others followed their example, and in a ſhort ſpace of time the number of theſe works augmented to forty, either water or horſe-mills; for horned cattle were not as yet employed in them.

[*a*] Pet. Mart. p. 499.

[*b*] Moſt of our writers date their firſt introduction from Braſil; but Herrera affirms, they were brought from Old Spain into the Canary Iſlands; if ſo, we muſt draw their origin rather from Africa than America; but the plant was certainly common to both of them, as well as to Aſia.

This new labour of cane-planting, added to digging in mines, and a thouſand other drudgeries, contributed to wear out the poor Indians, who were every where treated as abject ſlaves; beſides, their bodies were not athletic, nor capable of enduring the fatigue of hard labour, and their ſpirits were quickly broke with rigorous uſage. The Spaniſh occupiers of land, therefore, increaſing as faſt as theſe Indians decreaſed, recourſe was had to the Portugueſe factories on the coaſt of Africa for Negroe labourers; and thus ſprung up the Guiney trade with this part of the Weſt Indies. The climate of Hiſpaniola proved ſo benign and natural to the Blacks, as to have it commonly ſaid, "that unleſs one of them happened to be *hanged*, none ever died "there."

The manufacture of ſugar, and traffic for Negroes, found their way doubtleſs into Jamaica likewiſe, as ſoon as the colony was opulent enough to enter upon the one, and pay for the other; for, by degrees, the Indian inhabitants, partly by eſcaping to the continent, partly by the harſh uſage of their new lords, and by the natural effects of deſpondence under ſo grievous and oppreſſive a change in their condition, became almoſt extinguiſhed in every one of theſe larger iſlands.

The foundation of St. Jago de la Vega by the vice-roy Jago, or Diego Columbus, has been fixed about the year 1520, or 1521, not long before his deceaſe, which happened in Spain about the year 1525. It ſeems, I think, evident, from the foregoing deduction, that this was never conſidered a *proprietary government*, in the ſenſe we underſtand of Georgia, Pennſylvania, and other provinces in North America. No territorial grant was made to Columbus of any of theſe diſcovered countries; the ſovereign reſerved to himſelf the dominion and ſignorial right of ſoil, with nine ſhares in ten of all its productions. At the period, conſequently, when it became an Engliſh conqueſt, it was a member of the Spaniſh empire, in the ſame predicament as Cuba and Hiſpaniola, over which the heirs of Columbus held only the ſame titular offices of admiral, vice-roy, and governor in chief.

Peter Martir beſtows many compliments on the climate of theſe iſlands; he dwells upon the ſubject with rapture; but as I fear that I have treſpaſſed too far already on the reader's indulgence, I ſhall quote only one of his fine ſpeeches, which may ſerve by way of concluſion.

"What greater happineſs can there be, than to paſs one's life, "where we are not obliged to ſqueeze ourſelves into little cabins, "frozen with cold, or ſuffocated with heat! We have no winter here, "to load our bodies with ponderous cloathing, or to ſcorch our ſkins "before a perpetual fire; theſe are the practices which ſhrivel us up, "bring upon us a premature old age, dim our eyeſight, conſume our "vigour, and draw after them a long train of diſeaſes [c]."

[c] Page 59.

FINIS.

from the lake to cities of thoſe names, are only navigable by ſmall craft. But the water-carriage from it to the Southern or Pacific ocean is no more than twelve miles. On the oppoſite ſide it diſembogues by three mouths into the North or Carribean ſea. At the entrance into it, and on the South-weſt point, where it is about two miles acroſs from bank to bank, the Spaniards have their caſtle of St. Juan, for commanding the channel up the river, and preventing acceſs into the lake. It is built upon a rock of eaſy aſcent, ſurrounded with a dry ditch, near ſix feet deep, and the height from the bottom of the ditch to the top of the wall is about ſixteen. It is mounted with eighteen braſs and ſeven iron cannon, from eight to eighteen pounders; and the garriſon generally conſiſts of one hundred men. The North ſide of the lake forms the boundary to the Moſquito ſhore, the Spaniards not daring to croſs over to the free Indians inhabiting on that ſide, who are ſtill able to aſſert their liberty againſt thoſe pretended conquerors of the other parts of this extenſive continent. In the year 1671, a body of the buccaniers, having taken Panama on the South Sea, marched from thence to the lake, plundering the cities of Grenada, Leon, Realejeo, and others, in their way; but, being hard preſſed by the Spaniards, they retreated down by the river Wanks or Wallis to Cape Gracias a Dios, where they met with a moſt hoſpitable reception from the Moſquito Indians, among whom many of theſe rovers remained, and taught them the uſe of fire-arms, at which they are now become remarkably expert.

The Nicaragua has a flux and reflux like the ſea, and abounds with a great variety of excellent fiſh. The Spaniards have been cautious of remedying the natural impediments which obſtruct the navigation from it to the North Sea, leſt their enemies might be invited to penetrate by this way into their rich provinces of Nicaragua. For this reaſon, the governor of fort St. Juan has ſtrict orders not to permit any Britiſh ſubject to paſs either to or from it; for the Spaniards ſay, that, if once the Engliſh come to gain a thorough knowledge of the great value and importance of it, they will ſoon make themſelves maſters of the interior parts of the country. The Spaniſh government, therefore, have been extremely attentive to guard every communication with it, knowing the facility of carrying on a very large and profitable traffic with the Indians, and others under their juriſdiction, or inhabiting in

the neighbourhood. Nevertheleſs, both the Spaniſh and Indian inhabitants ſpare no pains to encounter every riſque, and travel a prodigious diſtance, to meet the traders; by whom they are ſupplied with ſuch neceſſaries and manufactures, as they could not otherwiſe procure, except at the moſt exorbitant rates. This fully points out the vaſt advantages of extending our intercourſe, by means of theſe friendly Indians, to the confines of the Nicaragua lake, which opens to us a moſt lucrative trade, in which we can have no rival, and from which all the power of Spain cannot exclude us, ſecured as it would be by the natural barriers of the country, and the ſupport of ſo numerous a body of the native Indians, who are implacable enemies to the Spaniards, and faſt allies to the Engliſh. The Moſquito territory is defended every way on the land-ſide by mountains and moraſſes. The Indians here are ſaid to have from ſix to ſeven thouſand fighting men; ſo that the whole number poſſibly amounts to between twenty and thirty thouſand, including a variety of tribes who paſs under the general name of Moſquitos [*a*]. There are other diſtinct tribes alſo bordering on their country; who, we are told, are no leſs diſpoſed to cultivate the friendſhip of the Engliſh. The Moſquitos, a great many years ago (ſome ſay a hundred), put themſelves voluntarily under protection of the crown of Great Britain. When the duke of Albemarle was governor of Jamaica, in 1687, their king received a commiſſion from him, under the broad ſeal of the iſland. On the death of their monarch, the next heir repairs to Jamaica, with a few principal men, to certify his claim; and he is then inveſted with a commiſſion to be king of the Moſquitos: until this is obtained, he is not acknowledged by his ſubjects; ſo dependent do they hold themſelves on the Britiſh government. When theſe inaugurations happen, it is uſual for the governor to beſtow ſome preſent on the new ſovereign, and a few trifles on his attendants; to which his majeſty always makes ſome return. This cuſtom is extremely politic on our ſide, and ſerves to promote a mutual exchange of civility and good offices; which may ſtrengthen their partial attachment towards the Engliſh.

[*a*] Among them is a mixed race, called *Samboes*, ſuppoſed to derive their origin from a Guiney ſhip; which, tradition ſays, was wrecked on the coaſt above a century ago; certain it is, that their hair, complexion, features, and make, clearly denote an African anceſtry; from whom they have alſo inherited ſome of the true characteriſtics of the African mind; for they are generally falſe, deſigning, treacherous, knaviſh, impudent, and revengeful.

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Page.	Line.	
598	8	r. *in* it.
599	13	(from the bottom) place a *comma* (after) *firſt*.
604	12	r. *of* the.
619	21	r. *operation*.
632	3d	(from the bottom) r. had *furiouſly*.
649	1	(Note) r. *there* was.
699	15	del. *that*.
737	19	r. *piraguas*.
780	3d	(from the bottom) r. *mimoſa*.
820	17	(after) *one*, add, *of theſe trees*.
913	3	place an aſteriſk (before) *China tallow-tree*.
961	25	for *Georgia* r. *Maryland*.

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