OBSERVATIONS

ON THE

NATURAL HISTORY,

CLIMATE, AND DISEASES

OF

MADEIRA,

DURING A PERIOD OF

EIGHTEEN YEARS.

By WILLIAM GOURLAY, M.D.

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To W. R. CRAUFURD, M.D.

PHYSICIAN AT CLIFTON.

My dear Sir,

PERMIT me to inscribe to you the present Work on a subject with which you are so conversant, and which formed so much the object of your study during your late residence at Madeira. In doing this, I am sensible I am only paying that due respect to your character, as an able and scientific Physician, which the public have long acknowledged; but I should reckon this motive insufficient, were not others of a private nature connected with it, equally creditable to your feelings as a Man. It is my wish to seize the present occasion, to express the sentiments of gratitude, by which I feel actuated for your unbounded and disinterested kindness to my family, and I trust it will remain a lasting testimony of affectionate friendship on my part, from

Your faithful and obliged

humble servant,

WILLIAM GOURLAY.

Madeira,
September 23d, 1808.

This work being printed in England, is necessarily deprived of such last corrections as it might have received from the pen of the author;---a circumstance which will also sufficiently apologize for such errors, as, under a dubious reference to the MS. may, without the imputation of negligence, have escaped the attention of the person to whom the superintendance of the publication was entrusted.

PREFACE.

NO particular History of the Climate and Diseases of Madeira has yet appeared in English, which is the more surprizing, from it having been so long the resort of the British, both from the intercourse produced by trade, and also as the dernier resource of the consumptive invalid, to escape the rigorous winter of his own climate. But the late changes in the political hemisphere, have given the British government a new interest in this island. A British garrison has been appointed for its defence, and the southern parts of Europe, being inaccessible to patients on the score of health, this spot has on both accounts a claim to particular attention. Every thing therefore relating to it at the present period becomes highly important, and I feel it peculiarly my duty to convey such information as I have acquired, during a residence there of no less than twenty-five years, accompanied with all the advantages of an extensive medical practice. Such information will,

I hope, prove useful, as it is grounded on long and attentive investigation of the subjects on which it is delivered. In regard to my Observations on the Climate, they have not only been made with particular care, but they are also illustrated by a Meteorological Register, accurately kept during a period of ten years. The Diseases of the Island I have arranged into two divisions, of Endemic, and Epidemic. To the former head belong Elephantiasis, the Cutaneous Affections of Itch, Oucas, Alfora, Sudamina, and Essera; Catarrh, Pneumonia, Phthisis, Obstructions of the Viscera, &c. &c. The latter includes Scarlatina, Dysentery, Small-Pox, Measles, Pertussis, &c. Of these diseases, Elephantiasis, Phthisis, Scarlatina, Dysentery, and Measles, have more than the others claimed my sedulous attention; and when treating of Phthisis, I have directed my remarks chiefly to that species of it, which appears in those patients who arrive from Britain to enjoy the benefit of the climate of Madeira.

To the work is subjoined a small Appendix, containing an Account of the Mineral Waters of St. Miguel.

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7		In marginal note, *for* Loo beech, *read* Loo rock
10	8	*for* Labo, *read* Cabo
	10	*for* Venta, *read* Ponta
13	2	In the marginal note, *for* Toa Affrico Conrea, who died at Comera de Labos, *read* Joa de Betencourt, who died at Camera de Lobas
	6	*for* arevo, *read* arobe
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PART I.

NATURAL HISTORY OF MADEIRA.

CHAP. I.

Discovery of the Island.

THE Island of Madeira, ever since its discovery, has formed a valuable possession of the Portuguese crown. The only authentic accounts of it, therefore, are to be found in the Portuguese writers. Cordeyro, the most accurate historian on this subject, gives the credit of its first discovery to the English, and in this he is confirmed by the unanimous testimony of other authors. According to this writer, an English nobleman, of the name of Machim, having carried off a young lady, named Arfet, with intention to land in France, then at war with England, was driven from Bristol, whence he set sail in consequence of a tempest, which tost his vessel to and fro for a great many days to a point of land, from the summit of which

was discovered a river emptying itself into the sea. This happened in the reign of Don John the First of Portugal, and Edward the Third of England, and the land thus discovered proved to be Madeira. Having disembarked with his crew for the purpose of refreshment, the return of the tempest compelled them to remain, and during the violence of it, on the third night after their landing, their vessel disappeared. The fatigues of the voyage proved fatal to the lady on the sixth day after reaching land, and this melancholy event so affected her lover, that he followed her in a few days after; having first, on the spot where she died, erected a monument to her memory. These circumstances are thus pathetically described by the poet—

" He laid her in the earth,
" Himself scarce living; and upon her tomb,
" Beneath the beauteous tree where they reclin'd,
" Plac'd the last tribute of his earthly love."

His unhappy followers, thus left to themselves, resolved to quit the island, and in a boat formed from the wreck of their vessel, or the trunk of a tree, according to other accounts, they once more committed themselves to the perils of the ocean. They happily, however,

in a few days, reached the coast of Barbary, where they encountered a fresh hardship in being sent prisoners to Morocco. On their arrival in this capital they met the remainder of their companions, who had been separated from them by the storm, and reached the Barbary coast in the same manner. Thus situated, the memory of their past misfortunes occupied entirely their minds, and engaged their conversation, which excited the curiosity of a fellow-prisoner, a Spanish pilot, Toã de Amores. This person, during his imprisonment, made himself acquainted, from them, with the place of their departure, and the winds which blew during the course of their voyage, as well as the time it occupied. When set at liberty soon after, he was captured on his return to Spain by a Portuguese vessel, under the command of Toã Goncalves Zarco, off the coast of Algarve, and carried to Lisbon. On being captured, having communicated all the particulars of the new island to the captain, they both waited on the Infant Don Henry, a prince of an enterprising and gallant spirit, and by him were referred to his father, Don John the First.

A ship was immediately granted to Zarco, for the purpose of making good the discovery of this new island, with which he sailed from

Algarve upon the first of June, 1419. In a few days he reached the Island of Porto Santo, then governed by Bartholemeo Perestrello, and leaving it, in a few days more completed the object of his voyage, by discerning the new island, presenting the appearance of a perpetual black cloud.

His first landing was at point St. Lawrence, which he named from his ship, and sailing southward he entered a spacious and beautiful bay, where he cast anchor. Here one of his followers, Rui Paes, was sent on shore to make observations on the situation and appearance of the island. He landed exactly on that spot the English had formerly occupied, it being the only place that permitted him to disembark, from the impenetrable trees which reached to the water's edge, and logs of wood brought down by the river, heaped on the beach. The report of this observer, however, was favorable on the state of the country, which he found fertile, abounding with green fields and groves of trees. In his investigation, having at last, by marks of footsteps, traced the tombs of the lovers, Machim and Anna, he returned to the vessel with his discoveries. On this information, Zarco, accompanied by two priests, disembarked on the second of July, 1419, at the

spot of the sepulchre, and there took possession of the island, having performed the ceremony of first returning thanks to Heaven for the fortunate discovery of it, which was followed by the celebration of mass in a small hut discovered to have been formed in the trunk of a tree. The service of the dead was then performed over the tombs of the lovers, and the business completed by founding a church dedicated to Christ.

Situation and Face of the Country.

Madeira is situated in 32 degrees, 37 minutes, 30 seconds, north latitude, and in 17 deg. 5 min. longitude, west of Greenwich, about 80 leagues N. by E. from Teneriffe, 120 leagues from Cape Cantin, on the coast of Africa, nearly 100 leagues from the Isle of Terno, and about 17 leagues S. W. from Porto Santo. It is about 120 miles in circumference, its greatest length from E. to W. being 45 miles, its greatest breadth from S. to N. 15 miles, and its least breadth $8\frac{1}{2}$ miles.

It is formed of lofty mountains, of hills, and fruitful vallies, and in figure makes an oblong irregular quadrangle. Its capital is Funchal, which is situated on the south side of the island,

at the bottom of a spacious valley, open to the sea, and surrounded by lofty mountains, having all the appearance of an amphitheatre gradually ascending to a great height. Its mountains and hills generally rise with a slow ascent, the highest points of land being about 8250 feet, or one mile and a half, above the level of the sea. The situation of Madeira, in some places, presents a most picturesque and enchanting appearance, while in others, huge perpendicular rocks, lofty precipices, prominent ridges, deep excavations and chasms, innumerable cascades, liberally supplied with rivulets, beautiful vallies, deep gullies and ravines, containing immense torrents of water, afford a highly varied, sublime, and no less alarming picture of nature.

CHAP. II.

Soil of Madeira.

There can be no doubt that this, like most islands, has sustained, at different periods, several violent concussions and derangements, from the action of subterraneous fires and volcanic eruptions. In innumerable places of the island, there are the most convincing proofs of this

fact. There exist evident marks of two craters, and in all parts of the island the stone has compleatly the appearance of lava: strata of pumice, and scoria perfectly vitrified every where abound. *

The soil of Madeira was for many years, I apprehend, after its discovery extremely fertile, and yielded in great luxuriance every production of nature, especially towards the coast where the lands are flat; but it must have materially changed since that period, having been under cultivation for now nearly four hundred years. In this time it has furnished a constant succession of crops, with the assistance of little or no manure. Besides it is presumable, from the extreme steepness of some of the lands, that the greatest part of the soil proper for vegetation, has been carried off by the occasional torrents of rain in the winter months; for many situations, which formerly produced some of the finest wines in the island, now present nothing but bare rocks, or, perhaps, small hillocks of earth.

The most common soil is pumice stone, of the consistence of soft rock, mixed with a pro-

* This scoriated appearance, and other marks of the action of fire, are very evident at the landing place, which is opposite to the Loo beech.

portion of clay, sand, and marle,* and also a dark red earth, consisting of the three latter ingredients, only without the pumice. Several of the smaller hills, consist of a black or grey sand, a great proportion of which is lava or scoriated matter. These varieties of soil are all proper for the vine; but, being very poor, they require the frequent assistance of manure; for otherwise the plants soon decay, or produce very scanty crops. It is however a curious fact, that the lands which produce the best wine, are in general rather poor; thence a great deal must also depend on local situation.† In some places near the river, a black mould, of a shingly nature, is met with, while in the small flats, at the bottom of declivities, and near the shore, there is found a stiff clay. In some of the higher lands there is a kind of marle, intermixed with layers of stone, which is very pulverisable, and is soon decomposed. When this last soil is properly manured, it answers

* Pumice stone, in its natural state, being easily worked upon, the natives frequently make fences of it for their vineyards.

† Two of the principal circumstances necessary to vegetation, are known to be a certain degree of moisture and a proper temperature. Whenever these are properly applied to the vine, it is certainly always productive of good wine.

well for a variety of vegetables, especially the potatoe. The mountainous parts of the country, and what the natives call *serras*, are poor meagre lands, from which the natives have a scanty crop of rye, once only in six or seven years, when the soil has been previously manured by the ashes of the broom, which has been suffered to grow upon it, in order to be burnt for this purpose. In some places, also, they grow potatoes, by means of the dung they procure from the cattle they feed. There can be no doubt, however, that these lands, though naturally of a poor quality, might be rendered more productive, if a proper mode of cultivation was introduced; and by the same improvement also, it would be possible to rear a greater number of cattle.

The rocks of this island consist, in general, of a blue stone, called by the natives *pedra viva*, something like our whin stone; but, in reality, lava—there are several varieties of this stone. It is often found having the appearance of basaltes; and, at other times, as at Mexico, a village ten miles from Funchal, in the form of glass embedded in loose earth. Of the free stone, there are here two kinds in common use, the one of a hard, the other of a soft nature; of the first there are two species, of which that

species only which is got in *Estreito* parish, is used in Funchal, the other being, from the coarseness of its grain, too hard to work, and incapable of receiving a good polish. Of the second there are also two species, generally distinguished from each other by their colour; in the one it is red, in the other grey. They are both used in Funchal, and procured from *Labo Geram*, a few miles to the westward. There is also another kind of this stone at Venta de Parga, about twenty-eight miles to the west, which has much the appearance of grey marble, and though little used takes a very fine polish. In some parts of the island too there is a kind of lime stone, or gypsum, but at too great a distance to be used in Funchal, which has its supply from Porto Santo.

CHAP. III.

Vegetable Productions.

From this general view of the soil of Madeira, it will readily be conceived, that if properly cultivated, it might be rendered capable of yielding the productions of every quarter of the world, from the advantage of its temperate climate and mild atmosphere. It is known that not only tropical, but also European, and

even more northern fruits, grow here to perfection. The island affords a great variety of indigenous plants. When first discovered it was literally an entire wilderness; groves of trees, chiefly cedar, and some of them of a very great size, reaching to the sea shore. But the cedar, then in such plenty, is now seldom to be found, except in the interior parts of the country, which are of difficult access. The tree which thrives best, and is most generally cultivated in the upper lands, is the *pine* tree. It arrives at a considerable size, and is highly useful for most domestic purposes. Besides it is not nice in the soil required for its growth, and answers on waste lands fit for nothing else. The chesnut tree is also one very common here, and grows with the same luxuriance and beauty as the others enumerated. Its fruit also is in great abundance, and in times of scarcity forms a useful substitute for the farrinaceous grains. The poplar tree is also one not less common than the others, and here preserves its verdure for a longer period than in Europe. I may also numerate the wild olive, the orange tree, the laurel, and many others distinguished either for their beauty or use. I cannot however omit the nasso wood or, lignum klodium, which furnishes the beautiful fine coloured boards that vie with mahogany for

domestic uses. The aloe plant is also a common production here, as well as the species of laurel, from which the camphor is produced.

This island also boasts of being the first situation in the western world where the *Arundo Saccherifera*, or sugar cane, was cultivated. The sugar of Madeira is uncommonly fine, and possesses a peculiar violet smell. At what period it came here from the east cannot be accurately determined, but it must have been soon after the discovery of the island. From Madeira it was transplanted to the Brazils, and in consequence of a severe blight which affected its cultivation in this island, it came to be discontinued, and to give place to that of the vine, as an article of easier management, and more profitable growth. Hence it has been neglected ever since; though political reasons may have also had some share in its being so completely given up.

The vine was introduced into Madeira from the Island of Cyprus, but at what period it is difficult to learn. Chaptal, whose authority claims the first respectability for philosophical research, relates, "En 1420 plusieurs Souverains de le Europ voulouret obtenir de vins de liquer de vignes, qui croisent dans les territoires de leur domination les Portugais avoient introduit

dans l'Ile de Medere, de plants de celle de cypre dont le vin passoit alors pour le premiers de l'univers et cet essait reussit." It is somewhat to be doubted however that it was introduced at so early a period. If it had been so, it would have been cultivated in a very small quantity, as the island was only discovered the year before, and then abounded with such a quantity of wood, even down to the sea shore, as shewed it to be quite in an uncultivated state. Some time must have elapsed before much land could be cleared or prepared for any purpose, and it is most natural to suppose that the land so cleared would in the first instance be appropriated to the necessaries, rather than the luxuries of life.*

* It is however to be observed, that in one of the *Register Books* of Wills that one Toa Affrico Conrea, who died at Comera de Labos, in the year 1491, left behind him memorandums of some debts which were due to him for sugar he had sold to different persons at the current price of 300, or 1.---6. sterling per Arevo. These debts it was his desire should be employed in purchasing a sheep, a quantity of wine, and a sack of wheat, to be given as an offering on occasion of the first mass being said at an altar he had ordered to be erected in the Church of Nossa Senhora de Cathoa, and also it is said he left some lands, cultivated with the sugar cane and vine, for similar purposes. Hence it is evident that the vine plant, if not introduced exactly at the

In Madeira the vine is generally propagated from cuttings, as the preferable mode of culture, rather than from the seed. In former times it was planted with the plough, to a depth pretty much the same as that which the vine is now planted in France, being a depth of 12 or 18 inches. But at this first period the soil must have been much richer, and the nature of it, as much as the circumstance of climate, determines the depth to which the vine should be planted, as regulating its fitness for vegetation. It is probable also, that the rains at that period must have been more regular, from the island then abounding more with wood. The case however now is very different, from the poverty of the soil, and the frequent droughts. Hence it is found necessary to plant the vine to the depth of from 3 to 6 feet. It being protected from the hard ground at the bottom of the trench, by a quantity of loose earth placed underneath.

Although the vine grows in any soil when attention is paid to the depth of planting it according to the nature of the land, yet it seems to delight in one kind of soil more than another. Thus a free light sandy or gravelly soil, is preferable for it to any other, by allowing its

date of Chaptal's account, might have been so at least not long after the discovery of the Island.

roots to spread wider, and to draw nourishment with ease from the extensive surface. While a stiff claey soil, by opposing its growth, is unfavourable in the same degree. A very great variety of grapes are produced in Madeira, such as the Negro Mole---Verdelha---Bual Barterdo Preta---Boalerdo Branca---Babosa Tarantey---Neprinha---Marotta---Casuda Neprinha de Agoa de Mel---Lestrong Galija---Castelhaw---Bringo---Malvazia---Malvazia Rocho---Malvaziam---Sercial---Sercial Groça---Uva de Lisboa---Alicant---Preto---Alicante Branca ---Ferral---Muscatel---Dodo de Dama, &c. &c. &c. But if this great number of kinds was reduced to the Negro Mole, the Verdelha, and the Bual, the wines would certainly be of much better quality.

The vintage in Madeira begins early in September---the process of making wine is extremely simple. The grapes immediately when cut are put into the press, which is a machine of great simplicity in its construction, and not unlike the instrument used in England in the making of cyder. It consists of the *Paixa,* or reservoir, with the Fuzo, or spindle, and the *Vara,* or lever. The *paixa* is of a square or oblong square figure, made of the plank of chesnut tree, about two feet thick, and sup-

ported on three large beams. The vara, or lever, goes across the reservoir, which extending nine or ten feet beyond the paixa, is connected at its furthest extremity, where there is a female screw, with the fuzo, or spindle. The upper end of the fuzo is a male screw, while its lever end is fastened by means of an iron spindle to a large stone, the size of which is proportionate to that of the press. When the grapes intended to be prest are all cut and placed in the reservoir, three, four, or more labourers enter that part of the machine, and with their feet tread the grapes so long as any juice can be expressed from them. The juice is allowed to run into a vessel under this *paiza*, through a hole at its middle, or at one corner, over which is generally placed a small basket by way of a sieve, in order to prevent any of the husks, seeds, or stalks from escaping. After this first pressure, or treading, the mashed grapes are collected into one heap, which being surrounded by a cord in close circles, and having boards and pieces of wood laid about it, is then placed under the lever, which is forthwith sunk upon it, and allowed to remain in this situation till the liquor ceases to flow. It is then raised, the boards and cords are taken off, and the mass being broken in pieces by tools something like hoes, is made to

undergo a second treading or pressure, and again also subjected to the operation of the lever. This process is even repeated to a third time, with the view of obtaining a further quantity of wine from the grape; and lastly, a fourth time, for the purpose of procuring the *Aqua hé*. In this fourth or last time however the mass when broken up is as dry as a piece of chip, and therefore previous to treading it, it is necessary to add to it a quantity of water in the proportion of two barrels to every pipe that has been obtained of juice. Thus if twelve barrels of wine or juice have been obtained, two of water are added. The mass for procuring *Aqua hé* is generally put under the pressure in the evening, and allowed to remain in this situation till next morning, when the *Aqua hé* is drawn off, and put into casks for immediate use.

The manner of making the *Tinta* wine from the black grape, called *Negro Mole* and Verdelha is somewhat different, for the grapes only undergo one pressure by the lever, and are afterwards drained through a common sieve, which allows the husks and seeds also to pass, the stalks only remaining behind. The whole is put into a vat, open at top, and stirred three or four times a day for about a fortnight, and when the fermentation is finished, it is racked off into

casks. The treatment of the must, or unfermented wine, is also simple. It is taken out of the *receiving cask* the same day it is prest, and put into others in order to undergo fermentation. In fine weather the fermentation begins almost immediately, which appears by the liquor rising and evolving a considerable quantity of fixed air, or carbonic acid gas: but in damp or cold weather, this process is somewhat more tardy. Wherever the grapes when cut have attained a proper degree of maturity, the fermentation is rapid, and the wine turns out good. The ebullition generally ceases in about a month or six weeks, or perhaps sooner; but, still a certain degree of fermentation continues to go on, especially in the case of rich full wines.

In order to clarify Madeira wine, there is generally mixed with it a kind of gypsum alabaster, called *geco*, brought chiefly from Spain. The mixture is stirred twice a day till it begins to have a vinous smell, and the carbonic acid gas is evaporated. This clarification is in Madeira the last part of the process in the manufacture of wine, nothing further being considered requisite, than to rack it off from the lees, which is generally done about the beginning of the year. The wines from the north

side of the island, and those from some of the upper lands in the *Serra*, are allowed to ferment in the casks, without any assistance or addition whatever. From the variety of grapes found in Madeira, it might be concluded, that there would be a corresponding variety of wines, and indeed from each of the particular species of grapes detailed, a particular kind of wine may be obtained; but the different grapes are generally all mixed together in making Madeira wine, except the Malmsey and Sarceal grapes; the former giving a wine which is reckoned *superior* to any *sweet wine;* and the latter another, *superior* to any *dry wine,* much esteemed on account of its scarcity and high flavour. *Tinto* grape also, gives a wine much the flavour of Burgundy, but it is commonly mixed with the other wines.

There is made annually, upon an average, from 25 to 30,000 pipes of wine in Madeira; one half of which is exported, and the other half, and sometimes more, is consumed in the island. This wine is reckoned superior to any of the southern wines, and certainly contains a greater proportion of saccharine matter, of alcohol, and of aroma, than any of them; the aroma however is not properly evolved, nor indeed does the wine acquire its peculiar degree

of activity, till it has lost somewhat of its austerity and ascerbency, by the regular application, for a length of time, of a certain degree of heat, or of heat and motion, which is found best obtained by allowing it to acquire a certain age in Madeira, or transporting it to a warmer climate, and there depositing it for a longer or shorter period. Hence has arisen the practice of giving such wines as are intended for British consumption, a voyage to the West Indies, or round the East Indies, China, and the Brazils, and occasionally allowing them to remain in one or other of those climates, for a few years before they are sent to England. The merchant generally ships such wines, when he has it in his power, on board large vessels nearly full of cargo, and if placed at the bottom of the hold the wine is found to improve most. Indeed it must be admitted, that the most improved Madeira wines are those that have undergone such voyages.

Besides the trees already mentioned, which grow on the higher lands of the island, the mountains are also covered with several varieties of brush wood. The principal of these is the heath, which reaches here to a great size; as also the broom, and a kind of beech, called zayō; a species of bilberry, vaccinium. In

the midst of these the strawberry is found, growing wild and in great abundance, yielding its fruit from March to July; the myrtle likewise is found in great plenty.

Several varieties of pot-herbs grow here with the greatest ease, such as succory, fennel, water cresses, samphire and beet. Of the plants too styled medicinal there is a great variety; as the common wormwood, maiden hair, agrimony, winter cherry, lavender, the different species of mint, rosemary, wild lily, and daffodil. The fences chiefly consist of brambles, prickly pear, wild rose, honeysuckle, and some other thorny bushes, which render them almost impenetrable.

It would be foreign to my plan to enumerate more particularly the plants which grow here spontaneously. I must not, however, pass over in silence the majestic palm tree, which grows to a great height, flowers and bears fruit in great abundance, though it never comes to perfection, nor do the seeds, when planted, vegetate: all which proves that the plant in Madeira is a female, and that there is no male one in the island by which it might be fecundated. The branches of this tree, when blanched, are used as ornaments in the religious processions on Palm Sunday.

Of the vegetables produced by culture, there are also in Madeira several varieties; and by a little more attention, the table might be supplied with abundance for the whole year round. Under this head are the several varieties of pulses, herbs and roots. The roots, in particular, are much used by the inhabitants in diet, such as the yam, potatoe, sweet potatoe, turnip, onion, &c. &c. The yam grows generally in low situations, where there is a plentiful supply of water, and is very easily cultivated. The potatoe has proved of late years, an useful production, and could still be cultivated to much greater advantage: indeed the island might, during the whole year, be plentifully supplied with this article, the nature of the soil in those situations, where nothing else could be planted with advantage, being most favorable to its growth. The sweet potatoe is now very generally propagated, is of easy growth, and like the common potatoe forms a cheap and nutritions article of diet. Here the onion grows to the greatest degree of perfection, and to an uncommon size, being extolled for its mildness, and wanting that acrimony which distinguishes the onion of northern climates: so abundant is its growth in this island, as to have been made an object of exportation.

It has been formerly observed, that northern and tropical fruits grow here in great plenty, and might be brought to the greatest perfection, if a little more attention was paid to their culture: most of the fruit trees grow here spontaneously, but are, unfortunately, often subject to the *blight,* which entirely destroys their produce.

Of the stone fruits, there are the cherries, plumbs, peach, nectarine and apricot.

Of the apple tribe, the common apple, pear, medlar, quince, pine apple, orange, lemon, lime, bergamot, pomegranate, guava and banana.

Of the small seeded fruits, the strawberry, red and white currant, gooseberry, bilberry, mulberry and grapes, are the principal ones.

Of the farinaceous fruits, the cucumber, melon and pompion, are the chief: the last is much used as an article of diet.

CHAP. IV.

Animals.

Madeira is known to afford a plentiful supply of cattle, at all seasons of the year, and were proper precautions taken by the inhabitants, to procure a sufficient supply of dry provender, for seasons when the grass is scarce, no want would be felt at any time on this head. The beef here is of good quality, and during the summer months, when provender is abundant, not much inferior to English beef: but in winter, when the grass is poor, and no dry fodder to assist in feeding the cattle, the meat becomes uncommonly lean, and also very scarce; especially when there has been a want of rain, and the proprietor of cattle is unable to bear the expence of feeding them. Mutton is not so much cultivated here as it ought, and consequently not so fine and well-flavoured as in England. The flesh of the kid, or young goat, is here preferable to lamb, and generally used in its place; nor is the pork equal to that of America or Britain, though in this climate, all the quadrupeds of Europe might be reared to advantage,

and brought to equal perfection as in the more northern regions.

Fowls are here in abundance, and easily reared, from the quantity of vegetables and fruit with which the country abounds. Of small birds this island possesses a great variety, of which may be particularly enumerated, chaffinches and canaries. The canary is generally here of a grey colour, but now and then is yellow, being of a mixed breed, perhaps owing to tame white ones having from time to time made their escape from the cage. The swallow is also here in great abundance, at certain seasons; and a grey bird, with a black head, which the natives call *tinto* negro, and is greatly admired for the beauty and melody of its note. Rock and wood pigeons are also here numerous; the latter is of a much larger size than in other countries, and much esteemed for its delicacy as food.

Fish, the next class of animals to be noticed, is in this part of the world in great variety, and in favorable seasons the market is plentifully supplied with them. Of the large kind, the most esteemed are the taõ fish, caught in deep water by the line, which is sometimes of a great size; the grey and sur mullet, which are taken by the net; the *salmoneto de alto*, a

very scarce and delicate fish; the dore, pargo, and abrato, or nape; the piscado, or pike, anchovy, and tunny. Of small fish, there is the same variety caught at all seasons, in the bays or harbours. Some however come more frequently in shoals, as the mackerel, pilchard, and mullet, at stated periods of the year. Of the fresh-water fish, there is only the eel: the rivers are here too rapid in their course to admit of any other. Of the shell-fish, the lobster, crab, shrimp, perriwinkle, and lampern, abound here; as also that delicate fish, called by the natives *craco*, and the hawksbill turtle, are in plenty at certain seasons. The hawksbill turtle, when of proper size, and kept for some time previous to use in fresh water, is certainly, if properly drest, not much inferior to the green species.

CHAP V.

View of the Inhabitants of Madeira.

After the observations on the natural history of the island, it may not be foreign to the subject, as an introduction to the remarks on its diseases, (to be afterwards offered), to take a

brief view of the temperament of body and mind peculiar to the natives, with their customs and manners.

The natives of Madeira, particularly the peasantry, are distinguished by an olive or tawny colour of skin, and a swarthy complexion; nor is it improbable that they are of a Mulatto or Moorish origin. Indeed only a few of the first families, at all resemble in complexion the fair inhabitants of northern Europe, and these are unequivocally of Portuguese extraction. The people of Madeira are, in general, athletic, well made, active, and of a middle stature. Those of the lower class, or the country people, are sober, inoffensive, economical, and capable of enduring much hard labour; in the prosecution of which they are often reduced to great emaciation of body, and debility of constitution, and thus a premature old age is brought on. The higher classes, on the contrary, are inclined to corpulence, and at the same time more disposed to indolence, attended with a moroseness of temper, and disposition to melancholy: though sober in respect to drinking, they are apt too often to indulge in eating to excess; from this circumstance, joined to the sedentary life they lead, they become subject to a variety of chronic disorders,

and also early arrive at a premature old age; nor is it to be concealed that of late years, the use of spirituous liquors has become common here among all ranks, which has opened a new field for the production of a long train of maladies.

Women here suffer more in their health than the other sex, for premature old age is the consequence of their early marriages and numerous offspring. They have often from six to twelve children in one family, and as they generally suckle, they often protract this task for two or three years, in order to prevent their having so numerous a progeny. Another source here of female disease, is the sedentary life women are forced to lead; for, except in the summer months, they seldom stir out, except to go to church, or in a moon-light night, and on both these occasions they are accompanied by attendants. Their rigid abstemiousness also from animal food, as a religious duty, on fast days and during Lent, must prove very pernicious to their health: nor is the adoption of the monastic life by females less to be censured; a practice here too common among the younger branches of the first families, and once adopted, or the veil taken, they never after are allowed to go without the walls of the convent, which

being a poor institution, and its regulations severe, its wretched inhabitants suffer all the inconveniencies that generally attend want and poverty, added to the rigorous and dull monotonous course of religious exercise, they are unremittingly condemned to perform, " shut up as they thus are from the common air, and the common use of their limbs."

The temper of the Portuguese is impetuous and irascible; the slightest injury too often transports them to such a pitch of anger, as occasions in them serious if not fatal disorders. The practice of stabbing however, the stigma of the Portuguese nation, from time immemorial, is by no means common in Madeira, and when resorted to, which is very seldom, it is only by the lower classes, and seldom are they known to do any injury to strangers.* No nation is possest of more elegant manners, with a greater degree of courteousness, condescension, and contentment, than the Portuguese, although placed under an abitrary govern-

* Since the arrival of the British troops, several instances of stabbing have been committed by the natives on the soldiers, one of which proved immediately fatal; it is to be lamented that the murderer has suffered no punishment as yet but imprisonment, as he cannot be tried for a capital punishment but at the court of Portugal.

ment, and subject to great oppression; to strangers particularly, their kindness and generosity overflow. The continuance of the practice of stabbing, may be ascribed, in a great measure, to the penal laws not being enforced as they ought, for death is here very seldom inflicted, even for murder. Interposition is made by some person, in favour of the criminal, by a form termed *empenho;* and when this *empenho,* or friendly interposition, is made by a lady, though the crime is of the blackest dye, it is considered a virtue, and even a point of honour, out of respect to the application, to protect him. This is carrying the remains of the system of chivalry to an extravagant height.

PART II.

CLIMATE OF MADEIRA.

HAVING detailed in the preceding part of this work, in a concise manner, the situation, natural history, and productions of Madeira, I proceed to consider what is deemed its chief excellence—the state of its climate, and the general course of weather prevalent at different seasons. This information is highly necessary for invalids, and will enable them to regulate their proceedings, in respect to their voyage to this quarter, when meant solely on the score of health.

CHAP. I.

Climate and Weather

The salubrity of the climate in this island, so highly extolled, is greatly attributed to the uniformity of its temperature. A regular succes-

sion of land and sea breezes, cool and purify its atmosphere during the whole year, and especially during the hottest months. Hence a drop of dew seldom falls, except in the higher parts of land, and any deleterious effluvia, which may arise from the surface of the earth, or from other sources, are dissipated as soon as they are produced.

During the summer months the thermometer ranges from 68 to 76, in the course of the day, its medium heat in the shade being from 73 to 75. In winter it ranges from 57 to 65, its medium in the shade being from 60 to 64, and during this colder season it only drops below 57, when the northerly winds prevail on the heights with falls of snow. It seldom also rises above 65, except when there are easterly winds. During the summer it sometimes rises to 80 and upwards, and during the prevalence of hot winds it stands even so high as 85.—Indeed during the *Sirocco* winds, it has risen at times to 130 and upwards, when the heat was sufficient in a few seconds to melt wax. The hottest time of the day, during the whole year, is between the hours of one and three, P. M. and the coolest period, a few hours after midnight. During the day the whole range of the thermometer will seldom at any season exceed two, or at most

four degrees, and frequently for several days together the same degree of heat is indicated. The meteorological observations from which these deductions on the subject of temperature are drawn, were made in the town of Funchal; but, in this, as in all other low situations, at all seasons of the year, the temperature is 10, 12, or more degrees greater than it is found to be in the higher parts of the island. Indeed every mile of ascent from Funchal, to the summit of the mountains immediately above it, shews the thermometer to fall four degrees. These situations, on account of the gradual rise, are at least three or four miles distant from each other.

Where such uniformity of temperature exists, combined with purity of atmosphere, and where such a pleasing variety marks the climate, one would conceive that the inconveniencies of seasons would be unknown; and that neither the excessive heats of summer would molest, nor the colds of winter pinch the frame; but it is found that this pleasing picture is not entirely realised, and though it may be truly said, that in general, spring and autumn compose the whole year; yet it is not to be concealed, that during the months of July, August, and September, which are the hottest months, the heat becomes

excessive and intolerable, and that on one or two occasions, the winter has been distinguished by a severe storm. Still, however, the winter may be said to be known only perhaps by a gale of wind, which may drive the vessels in the roads from their anchorage, or by a torrent of rain, which produces a rapid flow of the rivers down the ravines.—In 1803 such a storm was experienced here, that for the destruction it occasioned deserves particular notice.

Betwixt the 30th of September and 8th of October, there prevailed constant rains without intermission. On the 9th of October, after a still hazy morning, during which the thermometer stood about 75, at half past ten A. M. the rain again commenced, and continued to increase without intermission during the day. At sun-set it began to fall in immense torrents, accompanied by flashes of lightning, uncommonly vivid, and by dreadful peals of thunder; a violent storm of wind also prevailed, and such a swelling of the rivers took place, that seemed to bear down every thing before them; for shortly they rose to such a height as to overflow their banks, when they impetuously swept away whole vineyards and other plantations, cattle, wine, stores, and the huts of the inhabitants, who, with their whole

families perished. Stones of immense size, as well as the largest trees torn up by the roots, were carried down by them, from the mountains to the sea. The remains of this dreadful flood are still to be seen along many of the ravines, in large patches of wood-lands and cultivated fields, which had been swept down there by the inundation; while their original situation presents only bare rocks, and the neighbourhood around these rocks exhibits no marks of destruction whatever. At *St. Antonio da Serra* there is said to be a crater about three-fourths of a mile in circumference, surrounded by lofty mountains, covered by brush wood. In the superfices of this crater, there is now to be seen a large segment of its larger circumference, with brush wood growing upon it. This segment had been borne down into the bottom of the crater on this occasion, the former site of this piece of transposed land exhibiting, as in most other such instances, only bare rock; while in the immediate neighbourhood, nothing more than the ordinary effects of rain are to be observed. But the greatest havock and devastation occasioned by the rivers, was in Funchal. Here, as in the twinkling of an eye, whole streets of houses, with their inhabitants, were swept into the sea, churches, bridges, and edifices of every descrip-

tion, were involved in the same general wreck, leaving hardly a stone or other vestige behind them, to be discovered on the following morning, when the storm abated. It is computed that no less than 300 souls perished on this occasion: such were the consequences of this storm; and the causes producing such a scene of destruction, were certainly adequate to the effect. The following nervous lines of Lucretius well apply as delineating such a picture.

Ac cum mollis aquæ fertur natura repente.
Flumine abundanti, quod largis imbribus auget,
Montibus ex altis magnus decursus aquai:
Fragmina conjiciens sylvarum, arbustaque tota;
Nec validi possunt pontes venientis aquai,
Vim subitam tolerare: ita magno turbidus imbri,
Molibus incurrens validis cum viribus amnis
Dat sonitu magno stragem; volvitque sub undis
Grandia saxa, ruit qua quid quid fluctibus obstat.

Lucretii, lib 1. 272.

But still one effect of the storm, the transposition of large fragments and pieces of ground, is not accounted for, by the mere fall of rain, and swelling of the rivers. On this subject many absurd hypotheses have already been published, and the author finds therefore less difficulty in stating his opinion on this point: what he is

to state, however, must be considered as mere conjecture. This phenomenon, is, in his opinion, to be ascribed to the same cause, which produced the great increase of the rivers, and this cause, he apprehends, is to be looked for in the manner in which the water falls from the clouds upon the island. The general lowering appearance of the atmosphere, accompanying the phenomena in question, indicated an immense evaporation from the surfaces of the land and water, to have taken place in the heavens. This appearance was no other than that of immense clouds of vapour, which, during the thunder storm, had descended considerably below the summits of the mountains. In this low situation, and during the thunder storm, it is reasonable to conjecture that the clouds had become so concussed, charged, or otherwise affected by the electric fluid, and had further acquired such an additional increase from another mass of water, suddenly formed from the accidental inflammation of the superincumbent hydrogen gas, as to have become unable to continue longer suspended in air; but been precipitated, not in the form of rain, but of *cloud* cataracts, which cataracts were the cause both of the swell of the rivers, as well as the transposition of the lands.

In Madeira the coldest months of the year, are certainly January, February, and March; the winds then generally blow from N. NE. and in the mountainous parts of the island frequent heavy falls of snow are also apt to take place: this severe state of weather, during some seasons, continues occasionally to occur till the end of May. The other months are always attended by refreshing land and sea breezes, which at stated periods regularly set in, unless during the prevalence of the hot suffocating easterly wind, called *sirocco*; this wind visits the island for a few days at a time, twice or thrice every year, and at this time, the lower situations of the island are found the coolest and most bearable. The effects of this wind, on both animal and vegetable creation, are peculiar; in man it occasions diminished perspiration, succeeded by languor and general restlessness; in immediate exposure to its influence, the body is felt as if parched, and the air blows on the surface with a warmth like the blast from a furnace. In the same manner vegetables become dry and parched by it, and an interruption is put to their farther growth. So powerful is its effect, that even household furniture cracks and becomes warped by it.

CHAP. II.

Meteorological Register of Weather.

The preceding observations on the climate of Madeira, have been drawn up from an accurate account kept of the state of the weather, for a period of no less than sixteen years: this information thus derived from an unerring source, has been the result of much attention and labour, and kept for such a length of time, it cannot be subject to fallacy. The advantage of such registers has been pointed out by the writers on epidemics; and in a steady climate, such as that of Madeira, a physician, who is attentive to this subject, will be able to prognosticate the appearance and disappearance of disease, by this standard, and to regulate his precautions accordingly. The register is accompanied with some remarks on the state of vegetation, which it is proper to insert here, as corroborating the facts delivered in the former chapter. The vintage being the principal object in Madeira with the inhabitants, the remarks have been chiefly directed to mark the progress and changes upon it.

METEOROLOGICAL REGISTER.

State of the Thermometer, Barometer, Winds, and Weather, from January, 1793, to December, 1802, according to Observations made in the City of Funchal, Island of Madeira.

	THERMOMETER.			BAROMETER.		
1793	Highest.	Lowest.	Medium.	Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
Jan.	66	55	61	30 3	29 ½	30

Wind.—N. and NE. to the 20th—after variable from NW. SE. and E.

Weather.—Clear, cloudy, heavy showers and small rain.

The heavy rains of this month have greatly relieved the country, and enabled the people to sow their grain.

Feb.	66	55	59	30 3	29 9½	30	½

Wind.—N. and NE. alternately.

Weather.—Fair, clear, shady, cloudy, small rains, blowing fresh.

The spring very forward; orange trees coming luxuriantly out, and every other plant, though rather a want of rain.

Mar.	66	54	58	30 3	29	30	½

Wind.—Most frequently NE. and N.—often NW.—sometimes E.

Weather.—Fair, clear, light showers, at times heavy rain, cloudy.

An uncommon quantity of snow lying on the mountains. The crops variously talked of.

Apr.	69	55	59	30 2	29 2	29	3½

Wind.—Changeable from NE. to N. W. NW.

Weather.—Clear and shady alternately; heavy rains and showers.

This month, until latterly, has been accounted uncommonly cold and bleak, which has kept back the vines, and said to have hurt the budding grapes, by occasioning too rapid growth

1793	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
May.	74	58	64	30 3	29 8	30

Wind.—Twenty-four days NE.—after E. and N.

Weather.—Clear, shady, cloudy, light showers frequently.

This month has been colder than usual, but there have come out a great shew of grapes, and nothing material happened to hurt them, though the cold keeps them back.

June.	74	63	66	30 1½	29 9	30 ⅔

Wind.—NE. to the 17th—after N. and NE.

Weather.—Calm and breeze alternately, clear, shady, foggy, small rain.

The fog in the beginning of this month accounted to have hurt the vintage in the middle lands, especially where the vines were chiefly in flower; and the raw cold weather kept back things generally.

July.	81	67	74	30 1½	29 9	30 ⅔

Wind.—E. to the 11th—sixteen days NE.—one N. and NW.

Weather.—Clear with breeze, siroco wind calm, strong current to the east.

The strong hot wind which prevailed the beginning of this month, has injured considerably the vintage; the growth of the grapes apparently stopt, and the fruit falling from the stalks.

Aug.	75	66	69	30 1	29 9	30

Wind.—Alternately NE. and N.—two days E.

Weather.—Most frequently clear, sometimes shady with light showers.

The vintage better talked of, even in the places accounted worst, so that no beginning is yet spoke of.

Sept.	77	66	73	30 2	29 9	29 1

Wind.—Changeable from NE. to N.—one day NW.

Weather.—Clear, shady, small rains.

This month on the whole has proved very favourable for gathering the vintage, which has been desirably kept back; and though the grapes render not overmuch, the quality is expected to be uncommonly good.

1793	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
Oct.	74	60	68	30 2	29 9	30

Wind.—NE. and N.—sometimes SW. and S.

Weather.—Clear, cloudy, frequent heavy showers and light rain.

The south vintage was principally over before the remarkably heavy rains, which happened towards the end of the month, which are accounted greatly in favour of the vines and country in general. The rivers never seen higher.

Nov.	72	60	65	30 2	29 ½	29

Wind.—N. NE. E. NW. W.—from the 23d to the 30th N.

Weather.—Clear, shady, cloudy, squalls, showers and small rain.

The early favourable rains have encouraged the commencement of country labour, which appears going on with uncommon spirit, especially as all the old wines have been bought up.

Dec.	67	56	58	30 2	29 4	30

Wind.—Variable from S. NW. to W.—sometimes NE. and N.

Weather.—Clear, cloudy, much heavy rain, and frequent light showers.

From the abundant seasonable rains, the vines and plants of all kinds appear uncommonly healthy and vigorous.

1794.

Jan.	65	54	57	30 3	29 9	30

Wind.—Sixteen days N.—Nine days NE.—after E. SE. and NW.

Weather.—Clear, cloudy, heavy showers, unsettled.

Accounted the coldest season for many years past, the snow has been constantly covering the tops of the mountains.

Feb.	69	59	62	30 2	29 7	30

Wind.—Variable, chiefly NE.

Weather.—Clear, cloudy, sometimes blowing fresh, showers.

The cold weather that has prevailed kept back the vegetation, but the vines, trees and plants of every kind remarkably strong and healthy.

1794	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
Mar.	68	55	61	30 2	26 9	30

Wind.—Most frequently N. and NE.—sometimes SE. E. and NW.

Weather.—Clear, cloudy, much rain, blowing fresh, small showers.

The season backward from the bleak cold weather which has generally prevailed, but the plants accounted strong and healthy.

Apr. 72 59 64 | 30 2 29 8 30

Wind.—N. NE.—sometimes E. and NW.

Weather.—Shady, showers, clear, calm.

The country exceedingly in want of rain, for the grain crops especially, it having approached nearly to siroco wind sometime past, which has brought every thing forward. The vines in many places in flower.

May. 77 60 65 | 30 2 29 8 30

Wind.—NE. to the 11th.—after N. E. and NE.

Weather.—Clear, shady, blowing hard, light rain.

The high wind in the middle of the month has done some harm in exposed places, but the expectations of the vintage are very sanguine.

June. 74 63 66 | 30 1 29 9 30

Wind.—NE. and N. alternately.

Weather.—Clear, shady, light rains, hazy.

However changeable the weather has been, and the destructive thick haze, which at times prevailed, may have hurt the very high lands, where the vines were yet in flower, great expectations are entertained of the general vintage.

July. 78 66 63 | 30 2 28 ½ 29 1

Wind.—Nineteen days NE.—changeable from NE. and NW.

Weather.—Cloudy; most frequently clear and settled.

The vintage much forwarded by the hot weather which has prevailed, and expected to be very favourable in all respects.

1794	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
Aug.	79	69	73	30 2	28 ½	29 1

Wind.—Twenty-five days NE.—after E. and N.

Weather.—Clear; sometimes shady.

As the weather has been through the whole month favourable as could be wished, the vintage is generally well spoke of in all respects.

Sept.	76	69	72	30 2	28 ½	29 ½

Wind.—Thirteen days NE.—twelve days N.—after E. NW.

Weather.—Clear, cloudy, light showers.

The weather auspicious as could be wished for the vintage, which has encreased every way beyond expectation; in some parts treble.

Oct.	76	65	68	30 2	29 8	30

Wind.—Most frequently NE. and N.—five days NW.—three days E.

Weather.—Clear, shady, hazy, light rains.

The vintage finished in the north as well as the south, with the most favourable weather; since which, the continuation of drought is complained of.

Nov.	71	59	65	30 2	29 7	30

Wind.—NE. N. NW. SW. E.

Weather.—Clear, cloudy, heavy rain, light showers, hail.

The rains which have fallen accounted by no means sufficient for many parts of the country, though enough to admit of labour going on.

Dec.	66	57	65	30 2½	29 6	30

Wind.—Most frequently NE. and N.—often NW.

Weather.—Clear, cloudy, light showers.

Although a good deal of rain has occasionally fallen, it has not amounted to that abundance called for in the country, and required for planting.

1795	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
Jan.	75	55	64	30 2	29 4	30 ½

Wind.—Changeable from NW. N. SW. S. SE. to E.

Weather.—Heavy rain, fair, cloudy, light showers, hazy; much lightning and thunder on the 12th.

The plentiful rains which have fallen prove fully satisfactory.

Feb.	74	56	63	30 2	29 4	29 8

Wind.—Variable from E. NW. W. N. to NE.

Weather.—Clear, shady, light showers, hazy.

Every thing coming out fast, so much so that the country people are difficulted to overtake their different branches of labour. Whether from the uncommon variableness of the weather or otherwise, there rages an epidemic cough of a severe kind.

Mar.	69	55	62	30 2½	29 7	29 8

Wind.—Most frequently E. NE. and N.—sometimes NW.

Weather.—Fresh breeze, clear, light showers; three days heavy rain; one day thunder.

The weather uncommonly cold, and much snow on the mountains; but no complaints of its being of any prejudice.

April.	71	54	63	30 2	29 3	29

Wind.—N. NE.—variable from SE. W. and NW.

Weather.—Clear, hazy, shady; heavy showers with thunder; light showers, cloudy.

The rains in the first part of the month highly serviceable, to the grain most especially; the high wind hurtful to the vines, in exposed situations.

May.	75	62	66	30 ½	29 7	29 8

Wind.—NE. E. and NW.

Weather.—Shady, clear, light rain and mist.

The grain crops well spoke of, but the vines by no means promising.

1795	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
June.	75	62	67	31 2	29	30

Wind.—N. NW. most frequently NE.

Weather.—Variable, clear, cloudy, light showers with haze.

The uncommon coldness and uncertainty of the season much complained of. The grain, of which the prospect was very favourable, by no means answers expectation, and the grapes wear an unpromising aspect.

July.	76	63	67	31	30	29 1

Wind.—N. most frequently NE.

Weather.—Clear, shady, hazy, light rain, breeze.

The vintage gives no sanguine expectations, but the higher lands in particular are extremely complained of, as bare beyond example.

Aug.	77	67	70	30 2	29 9	30

Wind.—N. chiefly NE.

Weather.—Clear, shady, breeze; much thunder on the 2d.

Since the warm weather which has prevailed in this month, the vintage, in the lower lands especially, is better talked of than would be well expected.

Sept.	78	64	71	30 1	29	29 7

Wind.—N. NE. sometimes NW.

Weather.—Clear, cloudy, light showers.

The south vintage chiefly over, and by no means favourably talked of in the general quality of the grape, has proved very short in the upper lands especially.

Oct.	74	64	67	30 2	29 6	30

Wind.—Most frequently N. and NE. sometimes NW.

Weather.—Clear, shady, showers.

Though no adequate fall of rain has taken place with us in the south, the northern vintage has been much annoyed by wet weather, which gives no favourable prospect of the quality, and there it has also proved short.

	THERMOMETER.			BAROMETER.					
1795	Highest.	Lowest.	Medium.	Highest.		Lowest.		Medium.	
	Deg.	Deg.	Deg.	Inches.		Inches.		Inches.	
Nov.	70	58	64	30	2½	29	7½	30	

Wind.—Frequently NE. and N. sometimes NW. and SW.

Weather.—Shady, showers, hard squalls with rain.

The continued drought much complained of through the country, on every account, a greater danger of absolute want of bread of every kind than has been ever known.

Dec.	73	59	63	30	3½	29	6	30	

Wind.—SE. E. SW. NW.—from the 18th N. and NE.

Weather.—Clear, shady, heavy showers, windy and clear.

The rains which fell towards the middle of the month serviceable, but by no means adequate to the wants of the country, for the vines in many situations.

1796

Jan.	66	57	62	30	2½	29	5	30	

Wind.—NE. S. SW.—most frequently NW.

Weather.—Clear, shady, heavy showers, two days thunder, heavy squalls.

The rain which has fallen in the course of this month, though useful, has by no means been sufficient for the vines, in the strong grounds particularly, and in some places they are shooting out very unseasonably.

Feb.	67	55	64	30	3	29	6	30	

Wind.—Six days NW.—twelve days NE.—eight days N.

Weather.—Clear, shady, light showers—one day heavy rain.

The occasional falls of rain which have occurred, though serviceable, are not by any means equal to what the country requires. The vines accounted prematurely forward, though never thoroughly refreshed to the roots, and this has occasioned pruning generally more early than customary.

1796	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
Mar.	66	54	60	30 2	29 7	29 8

Wind.—N. to the 8th—after variable from SW. NW. NE. to E.

Weather.—Clear, cloudy, shady—six days showers—two days heavy rain.

The heavy falls of rain this month have been acceptable; but the very cold weather is said to have hurt the vines, from the forward state they were before in.

April.	69	55	60	30 2	29 7	29 9

Wind.—Eighteen days NE.—sometimes NW.—from the 24th to the 30th NE.

Weather.—Clear, shady, cloudy—six days light showers—three days heavy showers—one day thunder.

The heavy rains which have fallen in this month, have abundantly made up for the past drought, but accounted out of time; and the cold have occasioned the vines failing in the formation of fruit, but running into wood. The crop of grain looked upon as very favourable on the whole. The spring uncommonly backward and severe.

May.	74	60	65	30 2	29 7	30

Wind.—Variable—most frequently NE. N. and NW.—two days E.

Weather.—Shady, clear—four days showers—fresh breeze.

Although part of this month proved warm, and favourable for the bringing forward the vintage, the greatest part has been otherwise, which occasions fears how it may turn out, in the upper lands especially.

June.	75	62	67	30 1½	30	30

Wind.—Twenty-two days NE.—after N. and E.

Weather.—Clear, shady, hazy, light showers.

The very favourable weather which has on the whole prevailed this month, for forming the grapes, occasions the vintage to be better talked of, in the upper lands especially, than could be well looked for.

1796	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
July.	75	65	69	31	29 9	30

Wind.—To the 14th NE.—afterwards changeable from N. E. NE. to NW.

Weather.—Clear, shady, cloudy.

Though this month has proved on the whole favourable, yet the vintage is most inauspiciously spoken of; where there were the best shew of grapes, 'tis said, they have fallen from the stalks.

Aug. 76 66 60 | 30 1½ 29 8½ 30

Wind.—Twenty-three days NE.—thirteen days N.—and one day NW.

Weather.—Clear, cloudy, shady.

The weather has continued favourable during the whole month, and in consequence, the vintage is somewhat more favourably spoken of, but still as short and extremely poor in different places.

Sept. 75 62 67 | 30 1½ 30 30

Wind.—NE. N.—sometimes E. and NW.

Weather.—Clear, shady, cloudy, and blowing with showers.

This month has on the whole proved favourable for the vintage, which falls generally short of even that of last year; though the higher lands, but begun upon, are the most plentiful, and may compensate.

Oct. 77 61 67 | 30 2 29 8 30

Wind.—N. NE. NW. E. SE. S. and E.

Weather.—Cloudy, clear, shady, squalls, heavy rain with thunder.

The plentiful rains which have fallen this month, greatly in favour of the south generally, though some of the highest vintage suffered with that of the north.

Nov. 70 59 62 | 30 2½ 29 7 29 9½

Wind.—N. NE. NW. W. SW.

Weather.—Clear, light showers, cloudy, heavy rain, showers with thunder.

The abundant rains which have fallen, accounted favourable in all respects for the country—such have not happened for three years.

1796	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
Dec.	70	59	64	30 1	29 ½	29 6

Wind.—Changeable—most frequently NW.—sometimes S. and SW.

Weather.—Heavy showers, cloudy, frequent light showers—much thunder.

Such a continuance of rough and wet weather never remembered, it has occasioned inconveniencies, but accounted a happy forerunner.

1797								
Jan.	69	58	61	30 4	30 1½	30 1

Wind.—S. NE. E. NW.—most frequently N. and NE.

Weather.—Cloudy, clear, light showers.

Every thing coming fast out; but the drought of this month is complained of on account of the grain, the ground being much crusted.

Feb.	70	60	64	30 3	29 8	30

Wind.—Variable from NE. SE. SW. NW. W. to E.

Weather.—Clear, shady, cloudy, six days heavy showers, squalls, and light rain.

The frequent rains of this month highly favourable to the grain in particular—every thing coming fast forward—pruning generally earlier than usual, mostly finished in the month.

Mar.	67	53	60	30 3½	29 5	29 9

Wind.—Most frequently NE. and N.—often NW.—one day W. and SW.

Weather.—Nine days light showers, four days heavy rain; squalls and thunder; snow above.

The extreme and universal cold which has prevailed, has been hurtful to the first grapes come out, but the vines appear strong.

Apr.	69	75	60	30 3	29 8½	30

Wind.—Nineteen days NE.—ten days N.—one day W.

Weather.—Strong breeze, fair, shady, light showers, sometimes hazy.

The extreme cold of the spring has kept every thing much back, and even hurt the first shew of grapes; some fruit trees hardly shewing signs of life.

1797	THERMOMETER Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
May.	72	59	65	30 1½	29 8½	30

Wind.—Twenty-four days NE.—after variable from N. to NW.

Weather.—Clear, shady, cloudy, light showers.

This month has promised so favourable, that the hopes of an uncommon great vintage are most sanguine.

June.	73	62	67	30 2½	30 ½	30

Wind.—Nineteen days NE.—the remainder N.

Weather.—Clear, shady with light showers.

The cold which prevailed part of this month has proved hurtful both to the upper grounds, where the grapes were not yet formed, and to those further advanced; but on the whole great expectations obtain of the vintage.

July.	75	65	72	30 1	29 9	30

Wind.—Twenty-four days NE.—afterwards N. and NW.

Weather.—Clear, shady, cloudy, sometimes drizzling.

Although this month has proved throughout favourable, the prejudice results from the cold, and bleakness of the last appears considerable.

Aug.	78	68	71	30 1	29 9½	30

Wind.—Twenty-three days NE.—alternately N. E. and NW.

Weather.—Clear, misty, cloudy, dropping occasionally.

The whole of the month has proved favourable, and the vintage is again talked of as a good one, provided the weather keeps up.

Sept.	78	68	61	30 1½	29 8½	30

Wind.—Most frequently NE.—often N.—once NW.

Weather.—Generally clear; sometimes shady with light showers.

The month on the whole has proved happily favourable for gathering the vintage, which is increasing beyond expectation, especially in the middle and upper lands.

1797	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
Oct.	77	69	72	30 1½	29 8½	30

Wind.—Thirteen days N.—nine days NE.—after NW. SW. and W.

Weather.—Clear, calm, cloudy, showers and drizzling; some heavy rains.

The south vintage finished in the happiest manner, but from constant rains in the north side, a reverse was there experienced.

Nov.	72	60	65	30	1	29	7	30

Wind.—S. SE. NW. W. E. NE.—very variable the whole month.

Weather.—Heavy rain; stormy, thunder. Five vessels lost. Light showers.

The very plentiful rain which have fallen this month, are every way favourable for the country.

Dec.	73	62	65	30	2	29	9½	30

Wind.—Changeable from NW. W. SE. E. N. to NE.

Weather.—Light showers, cloudy, clear.

The extraordinary drought that has lately prevailed, threatens plants of every kind with a premature growth no ways desirable.

1798

Jan.	70	60	65	30	2½	29	9	30

Wind.—NE. and N.—one day E.

Weather.—Clear, light showers, cloudy, fair.

The drought every where prejudicial and alarming.

Feb.	70	56	60	30	3	29	7	30

Wind.—Most generally N. and NE.—sometimes E. SW. NW. and W.

Weather.—Light rains, fair, clear, windy and shady.

The rains which have fallen at different times this month, a great relief to the country, and serve to inspire new hopes, as well of the vines not prematurely coming to blossom, as of the grain crop yet proving favourable; and pasture being supplied for the cattle, of which there has been the greatest want.

1798	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
Mar.	68	54	60	30 2	29 5	30

Wind.—Variable from N. NE. E. SE. W. and NW.—most frequently NE.

Weather.—Fair, cloudy, light showers; sometimes heavy rain with thunder.

The rains which we have had this month highly beneficial every way, but particularly to the pasturage.

Apr.	71	58	60	30 1	29 6	30

Wind.—Most generally N. NW.—changeable from NE. NW. SW.

Weather.—Shady, light showers, drizzling, sometimes with squalls.

The uncommon degree of cold which has prevailed through the greatest part of this month, has proved detrimental to the vines.

May.	80	60	65	30 1½	29 7½	30

Wind.—Nineteen days NE.—six days E.—changeable from N. SW. to SE.

Weather.—Fair, clear, shady, cloudy, light showers, hazy all round.

The season, until these few days, not accounted favourable.

June.	74	62	67	30 2½	29 9	30

Wind.—Twenty-three days NE.—variable from N. E. to NW.

Weather.—Calm, shady, light showers, clear.

The vintage nor no kind of fruit has come forward well. It seems difficult to account for the unfavourable appearance, but a degree of blight has seized every thing since the hot wind of last month.

July.	77	66	70	30 1	29 9½	30

Wind.—Variable from NE. N. and NW. to the 20th—the remainder NE.

Weather.—Clear, hazy, shady; one day light rain.

The vintage very indifferently thought of in the south and low lands.

1798	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
Aug.	80	70	74	30 1	29 8½	30

Wind.—Sixteen days NE.—thirteen days N.—the remainder NW.

Weather.—Breeze, clear, shady and cloudy.

The weather having proved uniformly favourable this month, the vintage is better spoke of, the upper south lands and all the north especially.

Sept.	81	68	74	30 1	29 8½	30

Wind.—E. to the 4th.—most generally N. and E.—sometimes SW. W. and NW.

Weather.—Calm, clear, shady, cloudy, light showers; one day heavy rain.

The vintage very defective hitherto, and even the quality precarious.

Oct.	80	65	71	30 2	27	29 9

Wind.—Variable from N. NW. E. SE. SW.—W. to the 15th—NE. N. and NW. to the end.

Weather.—Clear, showers; one day heavy rain.

The vintage finished with little expectation of its proving good, excepting in the north, where the latter fair weather favoured it.

Nov.	73	59	65	30 2	29 7	29 9

Wind.—Variable from N. NW. E. SE. and SW. to the 15th.—NE. N. and NW. to the end.

Weather.—Clear, showers; one day heavy rain and squalls.

The vintage finished with little expectation of its proving good, excepting in the north, where the latter fair weather favoured it.

Dec.	73	62	65	30 2½	29 6	30

Wind.—Changeable from NE. N. NW.—generally NE.

Weather.—Fair, cloudy; one day heavy rain, light squalls and light showers.

The want of a sufficient fall of rain, for various parts of the country, complained of.

1799	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
Jan.	68	55	60	30 3	29 8½	30 1

Wind.—Twelve days N.—sixteen days NE.—the remainder NW.

Weather.—Calm, clear, snow above, six days light showers, four days heavy rain.

The drought complained of very generally.

Feb.	72	58	67	30 3	29 7½	30

Wind.—Variable from NW. N. NE. SW. to S.—generally NE.

Weather.—Clear, fair, cloudy, shady; four days light showers.

The recent heavy rains have served greatly to relieve the country, and to give a favourable prospect of the year.

Mar.	68	55	62	30 2	29 8	30

Winds.—Changeable from NW. N. and NE. to the 13th.—NE. to the 13th.—the remainder NW.

Weather.—Cloudy, hazy, clear; six days light showers; strong breeze.

Things breaking out with much vigour. The wind hurtful.

Apr.	67	54	61	30 2	29 8	30

Wind.—To the 18th variable from N. NE. to NW.—generally NE.

Weather.—Fair, cloudy, seven days showers, breeze.

Good expectations entertained of the vintage, notwithstanding the cold which has prevailed, being considered rather as unfavourable.

May.	70	59	63	30 1½	29 8	30

Wind.—Twenty-three days NE.—six days N.—one day W. and NW.

Weather.—Clear and shady alternately; four days light showers, high wind and cloudy.

The high wind on the 5th complained of in high and exposed situations, yet the hopes are generally sanguine of the vintage; the vines are strong.

1799	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
June.	71	60	64	30 2½	29 8	30 1½

Wind.—To the 11th NE.—after variable from N. NW. to NE.—generally N. and E.

Weather.—Shady, clear, four days light rain, windy at times.

There has been less sun and warmth than could be wished to bring forward the grapes, in the higher lands particularly, where complaints, in consequence, prevail, but expectation good on the whole.

July.	77	71	73	30	1½	29	9½	30

Wind.—Twenty-seven days NE.—after N. E. and NW.

Weather.—Clear, strong breeze, cloudy all round, light showers on the 27th.

Notwithstanding of the warm fine weather, of this month, the vintage is not well thought of, the grapes having from the cold spring come by no means forward, in a favourable manner.

Aug.	81	79	75	30	1	29	1½	30

Wind.—Thirteen days E.—sixteen days NE. and two days NW.

Weather.—Clear all round, a few days shady, one day showers.

Notwithstanding of the intense heat which has prevailed during this month, the vintage is very backward.

Sept.	82	71	76	30	1½	29	9	30

Wind.—Changeable from NE. N. NW. to SW.—generally NE.

Weather.—Most frequently clear; four days showers, cloudy, one day thunder.

The weather has on the whole been favourable for gathering the vintage, and continues to every appearance so; some of the lower lands better off than expected.

Oct.	80	64	72	30	1½	29	9	30

Winds.—Generally NE. and N.—sometimes NW.

Weather.—Hazy, shady, six days light showers, one day heavy rain; blowing hard.

The south vintage finished with very favourable weather; and though in the north they were not quite so successful, there appears not great reason for complaint.

1799	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
Nov.	76	61	63	30 3½	29 8	29 8

Wind.—Very changeable from W. NE. E. N. W. to SW.

Weather.—Clear, shady, eight days light rain, five days heavy rain, blowing much; thunder and lightning on the 22d.

The rains that have fallen in this month have given universal relief to the country, where work is going busily on.

Dec.	66	54	59	30 2	29	5½	30	

Winds.—Changeable from N. NW. N. SW. to W.

Weather.—Much heavy showers and continued rain, with frequent light showers; blowing.

The continuance of rain and bad weather has been greater than for a good many years past, but which is thought to lay the foundation of a fruitful season.

1800.

Jan.	65	55	59	30	2½	29	5½	29 9½

Winds.—Variable from SW. S. W. to NW. to the 22d.—most generally NW.—to the end N.

Weather.—Cloudy, heavy rain, hazy and squalls; thunder on the 28th.

Uncommon wet and boisterous weather has continued during the whole of this month, but not unfavourable for the country.

Feb.	65	55	59	30	1½	29	8	30

Winds.—Variable from N. NE. E. NW. SW. to S. to the 20th—afterwards NW.

Weather.—Shady, fair, windy, light showers, rain and thunder on the 20th.

Every thing forward and coming out uncommonly strong; so severe a winter has not however been known for many years.

Mar.	67	53	60	30	3	29	4	30

Wind.—Fifteen days N.—eight days NE.—changeable from NW. N. to NE.

Weather.—Fair, light showers, cloudy, snow on the hills on the 23d; breeze.

The month has proved favourable to the country.

1800	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
April.	67	56	60	30 3	29 8	30

Wind.—Alternately NE. and N.—one day NW.

Weather.—Clear, shady, light showers and cloudy.

The want of rain complained of for the grain crops; but the vines promise favourably in all respects, and coming fast into flower.

May. 70 58 62 | 30 1½ 29 7 30

Wind.—Variable—from NE. N. SW. and NW. to the 20th—but generally NW. afterwards.

Weather.—Clear, shady, cloudy, frequent showers, some heavy rains, and high wind.

The two or three windy days in the beginning of the month, and rains, are reckoned to have hurt the vintage in some exposed grounds; but the weather since has proved favourable as could be wished.

June. 72 62 66 | 30 1 29 7 29 9½

Wind.—Alternately NE. N. SW. and NW. to the 12th—afterwards NE.

Weather.—Fair, cloudy, drizzling, windy—heavy rain on the 8th.

This month has by no means been propitious to our hopes of the vintage; wind and rain have been prejudicial, and the cold chilliness of the weather generally yet more so.

July. 76 65 70 | 30 1 29 9 30

Wind.—Changeable from NE. and SW. to the 5th.—the remainder NE.

Weather.—Cloudy—one day light rain—clear.

Though the vintage by no means is allowed to promise being great, yet the lower and middling lands are tolerably well spoke of.

Aug. 77 66 68 | 30 1 29 8½ 30

Wind.—NE. NW. and E.—most frequently NE.

Weather.—Shady—heavy showers on the 3d—one day light rain and drizzily—clear.

The vintage in the middle and lower lands said to be better than was looked for: the rain on the 3d accounted serviceable.

1800	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
Sept.	77	66	69	30 1½	29 8	30

Wind.—Alternately NE. N. NW. and E.—most generally NE.

Weather.—Clear, shady, light showers, windy.

The month has proved remarkably favourable for gathering the vintage, which has encreased beyond expectation in most places.

Oct.	76	60	67	30 1½	29 8	30

Wind.—Changeable from NE. N. NW. W. S. SW. to SE. and N.

Weather.—Fair, shady—twelve days showers—some heavy rain.

The vintage finishing for some time—heavy rains are anxiously looked for.

Nov.	71	58	63	30 2½	29 5	30

Wind.—Variable from N. NE. NW. SW. to W.—most generally NE. and N.

Weather.—Fair, cloudy, frequent heavy showers, and light rains, blowing.

There has been no adequate fall of rain to reach the roots of the vines, but a sufficiency for the common country labour.

Dec.	64	57	60	30 3	29 7	30

Wind.—Generally NE. and N.—alternately NW. S. N. NE. and SE. E.

Weather.—Clear, shady—light and heavy showers—snow on the hills.

The want of rain universally complained of.

1801.

Jan.	67	52	58	30 2	29 9	30

Wind.—E. NE. NW. N. SE.—most generally NE.

Weather.—Clear, shady—nine days light showers—blowing.

An uncommon drought continuing to prevail, felt in every way.

1801	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
Feb.	65	52	58	30 2½	29 1½	30

Wind.—SE. E. NE. N. NW.—generally NE. and N.

Weather.—Hazy at sea—blowing—heavy showers on the 13th—uncommon fall of snow on the 14th—five days showers and light rain—shady and clear alternately.

The rains which fell in the middle of the month has in some degree relieved the country, particularly as to the grain sown, but they were not sufficiently abundant for the vines.

Mar.	71	56	62	30	2	29	8	30

Wind.—E. to the 9th—NW. W. to the 15th—afterwards E. and NE. most frequently.

Weather.—Clear, hazy, light rain, blowing occasionally.

Notwithstanding the uncommon drought continuing, the vines are coming out strongly, but all else much burnt up.

April.	67	53	60	30	1	29	6	30

Wind.—N. NW. W. NE. SW.—most frequently NE.

Weather.—Cloudy, clear, blowing fresh, light showers, afterwards fair.

The occasional little rain in this month, serviceable in some degree still to the grain, and greatly so to verdure of all sorts.

May.	67	52	62	30	2½	29	7	30

Wind.—N. SW. NW. W.—most generally N. and NE.

Weather.—Shady, showers, heavy rain, fair and clear.

The month has proved rather cold, and chilling for the vines; but the rain that has fallen has been serviceable to the grain and pasturage.

June.	73	60	66	30	2	29	9	30

Wind.—NE. N. NW. SE. E.—most frequently N. and NE.

Weather.—Clear, shady—six days light showers—breeze.

The crop of grain has turned out more plentiful than was looked for; but the vintage seems not to have come forward so favourably as imagined.

1801	THERMOMETER. Highest. Deg.	Lowest. Deg.	Medium. Deg.	BAROMETER. Highest. Inches.	Lowest. Inches.	Medium. Inches.
July.	75	66	69	30 1½	29 9	30

Wind.—Twenty-one days NE. alternately—afterwards NW. and N.

Weather.—Shady, clear, showers, dropping for three days.

The vintage by no means so well thought of as was looked for.

Aug.	79	67	64	30 1½	29 7½	30

Wind.—Variable from NE. N. E. SW. NW. to W.

Weather.—Clear, shady, misty, disky and dropping—on the 8th showers—heavy showers on the 20th.

The late rains not against the vintage, but not favourably thought of.

Sept.	77	68	72	30 2	29 9	30

Wind.—Most frequently NE. and N.—sometimes NW.—once E.

Weather.—Clear, shady—four days light showers, and one day heavy rain.

The vintage rather encreasing in the lower grounds, but the upper promise poorly: the rain having gone off will not hurt materially.

Oct.	76	64	72	30 1½	29 9	30

Wind.—Twenty-one days NE. alternately—frequently N. NW. and E.

Weather.—Fair, clear—three days light showers—sometimes blowing.

The drought much complained of, as well on account of the vines, as the new made wines not fermenting sufficiently.

Nov.	72	61	65	30 2	29 9	30

Wind.—Variable from NE. N. to SW.—generally NE.

Weather.—Calm, breeze, blowing fresh, cloudy, eight days showers.

The continued drought highly prejudicial, threatening even the vines which appear sickly, but rain is only wanting on the south side.

	THERMOMETER.			BAROMETER.				
1801	Highest.	Lowest.	Medium.	Highest.		Lowest.		Medium.
	Deg.	Deg.	Deg.	Inches.		Inches.		Inches.
Dec.	70	58	62	30	2	29	8	30

Wind.—Changeable from NE. E. N. SE. SW. most generally N. and NE.

Weather.—Fair, shady, windy, cloudy, thunder one day, disky, dark, three days showers and light showers.

The drought still continuing, to the inconveniency and prejudice of the country on the south side generally.

1802.

Jan.	65	51	58	30	3	29	5	30

Wind.—Changeable from NE. N. NW. to W. to the 12th—after N. E.—generally NE.

Weather.—Cloudy, six days showers, heavy rain after, clear.

The rains that have fallen in the course of this month highly serviceable, yet in many parts more are called for.

Feb.	67	54	60	30	2½	29	7½	30

Wind.—Variable from N. NE.—two days E.

Weather.—Fair and clear, a few days light rain, cloudy and windy.

The renewed drought is very alarming on every account; but what particularly presses on attention, is the absolute want of any kind of sustenance for cattle, in the south side of the island. In the north rains have been abundant.

Mar.	72	55	59	30	2	29	8	30

Wind.—Changeable from N. S. W. NE. to E.—generally N. and NE.

Weather.—Fair, clear, four days heavy showers continued, eight days light rain, dark and cloudy, for three days blowing; much snow on the hills on the 13th.

The rain of this month a great relief, but not sufficient for the vines.

1802	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium.
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
April.	67	54	61	30 2½	29 7½	30

Wind.—Variable from NE. NW. NE. to E.—generally NE.

Weather.—Cloudy, clear, seven days showers, two days heavy rain, breeze.

Until within these few days it was apprehended that the country was suffering in all respects from drought; as far as respects the crops of grain and pasturage there is now a better prospect,

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May. 69 56 62 | 30 1 29 7 29 9

Wind.—NW. N. and NE. to the 18th—afterwards variable from N. to NW.

Weather.—Fresh breeze, seven days showers, heavy rain on the 3d, blowing and cloudy.

The intervals of high winds have hurt the vintage in parts.

June. 70 61 65 | 30 1½ 29 8½ 30

Wind.—N. NW. and SE.—most generally NE.

Weather.—Clear, heavy rain on the 3d, four days light showers, breeze and calm alternately.

The crops of grain, contrary to expectation, have proved in general uncommonly good. The vintage but indifferently thought of, in the low lands especially.

July. 73 64 69 | 30 2 30 1 30 1½

Wind.—Two days N.—twenty-nine days NE.

Weather.—Calm, fair, shady, clear alternately; generally a steady breeze.

The vintage by no means favourably thought of, complaints of it more general than was imagined.

Aug. 80 68 73 | 30 1 29 9 30

Wind.—E. NE. and N.—most frequently E.

Weather.—Clear, hazy, blowing, disky sky, some rain on the 31st.

The late intense heats have served to force forward the vintage, but not in the gradual way, which would be more in its favour.

1802	THERMOMETER. Highest.	Lowest.	Medium.	BAROMETER. Highest.	Lowest.	Medium
	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.
Sept.	84	70	75	30 3	29 8½	30 ½

Wind.—E. NE. SW.—most generally E.

Weather.—Clear all round, cloudy, heavy rains with thunder, and hazy on the 26th. The thermometer exposed to the sun on the 11th rose to 120, and in a few seconds melted a piece of wax.

The weather has been very much against the vintage; from the occasional rains, and high winds, and it is feared it will prove a bad one.

Oct.	76	66	69	30 1	29 8½	29 9½

Wind. E. NW. NE. N. SW. and W. alternately.

Weather. Calm, fair, and clear; three days heavy rain; some light showers; cloudy, breeze; much thunder on the 1st and 2d, after clear.

The prodigious fall of rain, in the commencement of the month, brought down the rivers in an uncommon manner, and they did much damage, otherwise serviceable.

Nov.	70	60	65	30 1½	29 4	29 8

Wind. NW. W. N. and NE.—generally NW.

Weather. Clear, blowing; four days heavy rain; hail with thunder; light showers, cloudy.

The abundant rains that have fallen, serve to revive the country greatly, and recover the vines.

Dec.	63	52	57	30 1	29 6	29 8½

Wind. N. S. NW. and NE. most generally NE. frequently NW. towards the end.

Weather. Sixteen days rain; eight days heavy rain; hail and thunder on the 8th; squally and fresh alternately.

The uncommon fall of rain propitious to the country.

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THE editor has taken the liberty of terminating here, the series of Meteorological Observations. Their continuation for so long a period as sixteen years, afford undoubted proofs of the persevering

attention and unwearied diligence of the author; but it seems questionable whether the curiosity of any reader could overcome their monotonous sameness, which is augmented by the steady uniformity of a mild and temperate climate.

To afford the invalid a synoptical view of the average temperature, he is to expect, during every month in the year, in the island of Madeira, the following *Table* is inserted, taken from that masterly work, on the "Temperature of different Latitudes," by Richard Kirwan, F.R.S.

"Madeira, Funchal, lat. 32°. 37. long. 17°. mean height of the thermometer for every month, taken from an average of four years' observations.

Jan.	64°, 18.	*July*,	73, 45.
Feb.	64, 3.	*August*,	75, 02.
March,	65, 8.	*Sept.*	75, 76.
April,	65, 5.	*October*,	72, 5.
May,	66, 53.	*Nov.*	69, 08.
June,	69, 74.	*Dec.*	65.

The following is the average temperature of Madeira, compared with that of London, for the whole year, as well as during the coldest and warmest months, which are January and July. Taking the average temperature of London at 1000, the heat of Madeira is 1319. In January 0559, July 1128.

PART III.

DISEASES OF MADEIRA.

THOUGH Madeira enjoys a mild atmosphere, and is not subject to those vicissitudes of weather, which affect the more northern regions, still, it is equally the seat of disease as other countries, and the forms of these are neither few in number, nor mild in their nature, a circumstance we should not have expected. Indeed the island, at times, seems visited by sickly seasons, the cause of which can as little be investigated there as elsewhere.

The diseases of Madeira, I formerly arranged into two divisions, as Endemic or Epidemic; of the former, some species are highly formidable in their nature and appearance; the latter, are generally very violent, though not of long duration.

I. Endemic.

The endemic comprehend the various affections of the skin, under the names of Elephantiasis, Psora, Oucão, and Alfora; diseases of

the chest, as Catarrh, Pneumonia, and Phthisis; with other anomalous disorders, as Rheumatism, Asthmatic affections, Cólic, Tetanus, Dropsy, &c. With the consideration of these, I shall now begin.

Elephantiasis, or Leprosy.

By this term is meant the real Syrian or Arabian leprosy, one of the most deplorable and loathsome diseases, that can afflict human nature. In this island, it is an old endemic, and no where does it shew itself under more distressing and aggravated forms. It is sufficiently established as an hereditary disease; and in one or two instances, it has appeared of a contagious nature: it is considered, for the most part, as incurable, and in only one instance did Dr. Heberden know it removed. It is most conspicuous among the lower classes of the island, where diet is confined to salt provisions, chiefly fish of the least nourishing kind. Where it attacks the more wealthy inhabitants, which is not so frequent, it is milder in its symptoms, and less loathsome in its appearance. Some idea of the disease may be formed from the following short description of it. It generally shews itself, by tubercles upon the face and

upper extremities, and sometimes upon the trunk of the body and penis. Ill-conditioned ulcers of the legs also take place, in some instances, attended with acute pain; large indolent glandular tumours occupy the upper and anterior part of the thigh. The fingers become contracted, and the feet hard and swelled. The fingers also, and toes, are occasionally destroyed by ulceration; the same disposition to irregular tumours and ulceration attacks the throat.

In those affected by the disease, previous to the age of puberty, the usual signs that mark this period of life do not appear. The beard, the usual sign of virility, is wanting; the hair is deficient on the pubes and scrotum, as well as on the axilla and breast. No desire prevails for the venereal passion: the voice preserves its puerile tone, and does not acquire the real strength and masculine expression. Even the testicles, not called upon for the exercise of their functions, gradually waste.

The same morbid state, that thus distinguishes the male, is no less extended to the female, in whom there is no increase or fulness of the breasts, no growth of the external parts of generation, no appearance of the menses, or hair on the pubes and axilla, and in

short no disposition to venereal intercourse. Even where the disease makes its first attack, at a much later period, the marks of sexual maturity, which are already established, gradually disappear, and are attended with impotence or very impaired powers of generation. Thus in the male, the testicles gradually waste, and the beard disappears; while in the female, the breasts as well as the external generative parts shrink, or lose their natural fulness in a remarkable degree. Even the hair falls off, and the catamenia, or courses, cease to flow.

These circumstances tend to shew the disease in Madeira, different from what is observed in other countries; for in its history, it is noticed by every writer, that the unhappy victims of its attack, are distinguished by an unsatiable desire for venery, which they cannot restrain; so that the influence of the disease, on the parts of generation, does not appear to lessen their functions; but, on the contrary, to increase the exercise of them. On the contrary, the reverse happens in Madeira, and the loss of the powers of generation, or their non-appearance altogether, with a corresponding want of evolution in the parts of generation, or their gradually shrinking, forms a leading character of the disease.

That this disease is unfortunately of a hereditary nature, physicians in general admit, and this hereditary disposition, it is further observed, is derived oftener from the father than the other parent. With respect to its being of a contagious nature, it is a matter of doubt, and the opinions of modern authors contradict it.

This subject is ably treated by Dr. Adams, in his work on Morbid Poisons, who denies the contagious principle of this disease; and in this sentiment, he is also supported by Dr. Thomas Heberden, who has written upon it in the London Medical Transactions. But notwithstanding these respectable authorities, there are some cases which clearly prove the contagious nature of the disease, and though this contagious principle may not exert itself on all occasions, still, these cases point out the necessity for pausing on this head, and taking such precautions, as may not unnecessarily expose the sound to the infection.

About thirty years ago, in the village *Ponta de Sol*, fourteen miles distant from Funchal, the capital of this island, it raged with all the violence of an infectious malady, passing from one family to another, and threatening to extend its ravages into the neighbouring coun-

try, till the governor took this prudent and wise step, of separating the healthy from the diseased, and preventing their interference with each other.

There are now in the Lazaretto, and out of it, two or three cases of man and wife labouring under this disease, where, to all appearance, a communication of the infection took place, from the one party to the other; and as a farther instance of the same fact, the present porter of the Lazaretto caught the disease himself, since he resided in the hospital. The mode of attack also, where it appears in those born of healthy parents, and who have themselves continued healthy, till after the age of puberty, or a more advanced period, much resembles the mode of attack, which distinguishes contagious diseases. It is ushered in with rigors and other symptoms of pyrexia, while at the same time there is no evidence of the presence of any other existing morbid cause. These circumstances acquire additional weight, from the observation that the disease uniformly assumes a more aggravated form in the Lazaretto, than where the patient is taken care of at home by his friends, even though the patient is introduced to the hospital on the first symptoms of the malady. This therefore

cannot be easily accounted for, unless by supposing a certain vitiated state of the atmosphere to exist, in this receptacle of the diseased, depending on the effluvia arising from the bodies of the sick. As, to counteract as much as possible the morbid state, every attention is paid in the œconomy of the place, to proper regulations, in respect to ventilation and cleanliness, and the diet is of the best quality, and in abundant supply. In confirmation of my opinion, I may here notice the change which often takes place in erysipelas, which in crouded hospitals becomes often an epidemic disease, and of a highly contagious nature, as is well known to every medical practitioner. Its prevention being only effected by removing patients to a distance from each other.

On the treatment of Elephantiasis our knowledge is hitherto very imperfect, and must, I fear, continue so, while our information concerning its nature is so uncertain and defective, and especially with respect to its contagious tendency. The removal of this uncertainty will be the first step to a discovery of a successful method of cure. In a few instances, I have been able to suspend the progress of the disease, by the use of mercury, in the form of calomel: but these cases were confined to its incipient state. In other cases,

I have tried the administration internally of the Lacerta (Agilis) or common lizard, so long ago as the year 1785. Of these I luckily had the immediate charge, and the greatest benefit was derived from this remedy. It is not, however, to be concealed, that it also at times failed; and the same result was observed, in the practice of several of the Spanish physicians, who made a similar trial of this remedy.

As a medicine, this reptile acts as a powerful stimulant on the living solid, opening the several excretions, and producing large evacuations, particularly by the skin and urine, which are at the same time not attended with any debilitating effect. By this mode of operation, it will be found to have the certain influence of arresting the progress of the worst symptoms of elephantiasis, if not the whole, and in many cases to have surprisingly restored parts, which for years had been morbidly enlarged, to their natural size, and even sensibility; though for that period they had continued in a torpid state. Its operation also seems to vary somewhat in different cases; at times the different secretions seem increased by it all at once, viz. the perspiration, urine, and saliva; at other times, merely an increase of saliva takes place. Diarrhœa was not an un-

common effect of its operation, but as noticed, and what would hardly be supposed, these evacuations produced no proportionate degree of debility. On the contrary, in every case, the appetite for food, and the natural strength and vigour continued unimpaired. One effect of its administration was at times to occasion vertigo or giddiness, but this symptom seemed merely a transient attack, and was never attended with any bad consequence. On what peculiar principle the active operation of this remedy depends, admits much conjecture. The viper, a reptile of the same structure, was considered by the ancients an infallible cure for leprosy, the active powers of which, were supposed to reside in its volatile saline parts. The form of administering this remedy, was that of pills of an ordinary size, (or about five or six grains each), into which it was made up with a little flour. In order to do it, the head, tail and legs were previously cut off, the skin removed, and the intestines taken out: of these pills, from six to twelve or more were given daily.

To illustrate this practice more completely, I shall subjoin a few of the cases, in which I gave it a fair trial, with the result which attended its administration.

CASE I.

Occuring September 25, 1785.

Maria Toaquina, about a twelvemonth before, in the eleventh year of her age, had been seized, after exposure to cold, with a violent inflammation of her face, of a purple livid appearance. This was succeeded, in six months after, by a number of small tubercles on the eye-brows, palpetree and alæ nasi, with a falling off of the hairs from the body. Her arms were also much tuberculated, and her father, according to her report, had died of leprosy. She immediately began the daily use of the lizard to the amount of one.

Its effect on the 8th, was to cause her to sweat profusely, and to pass daily four quarts of urine, since she begun its use. The swelling of the face is now evidently diminished, and the tubercles feel also softer. Her belly and appetite continue both natural.

On the 12th, the same effects of medicine continue, with an evident amendment of the disease.

On the 21st, the medicine is equally active, the secretions as hitherto, while the tubercles

and swellings on the face have disappeared, and the eye-brows have regained their growth of hair. She is now apparently cured.

CASE II. *September* 1, 1785.

Antonio, a labourer, of healthy parents, but of a melancholic temperament, in the fifty-second year of his age, about four months ago caught cold, when convalescent from fever. He was then suddenly seized with a violent inflammation of his legs, arms and face, of a purple and shining colour. The lobes of his ears, his lips, eye-brows and alæ nasi, were greatly enlarged, and there soon supervened on these parts, a number of indolent tubercles of various sizes. With these symptoms was next joined an eruption of chopped scales on his arms and legs, attended here and there with ulcerations of a florid matter, that discharged a quantity of thick yellow matter. These ulcerations particularly affected the soles of the feet. For some time back he had laboured ender anæsthesia, or loss of feeling, and indeed a general torpor seemed to pervade every affected part. The integuments of the legs became, in the progress of the disease, so thick and hard, and their insensibility so great,

that no sensation was felt on being pricked with pins. His eye-sight also felt much impaired, and he had been seized occasionally with vertigo, accompanied with convulsive tremors. In short, every symptom of the disease was rapidly increasing. I prescribed for a raw lizard every morning, a gradual amendment soon took place. The indolent tubercles lessened, the ulcerations healed, and the itching of the skin diminished: his sight, which was much impaired, became restored to its natural perfection, and the sensibility of the system, which had been so completely lost, very much amended. The operation of the medicine was here attended with the same profuse discharge, as in the former case, and seems to point out that this action is necessary to its success; if not, it at least shews its powerful operation on the system.

CASE III.

A gentleman who had been in Mexico, and other parts of South America, and was acquainted with the success of the medicine himself, came to Madeira purposely to put himself under my care. This case was similar to the two former, in the leading symptoms, though it had not made so

much progress as the last. He began accordingly the same course of a raw lizard every morning. Its operation was attended with the same effect as in the former patients, and symptoms of amendment soon appeared to take place. But circumstances of business obliging him suddenly to leave the island, I had not an opportunity of knowing the result of this case.

To the above cases, I might add a great number more, in which I have prescribed the lizard with great advantage; but in all, the operation of the medicine has been the same, and the progress of the cure has proceeded in a similar gradual manner: but, I must not conceal, at the same time, that in many other cases I have been disappointed by it in producing a cure, even where I have increased the dose beyond the quantity stated, where its operation on the system has been full and severe, and where the cases were apparently not so bad as others, that had happily yielded to its influence. But besides leprosy, I understand, it has been given with much advantage, in Herpes, Chronic Rheumatism, Dropsy, and Scrofula. In one case of this last disease, which came under my knowledge, a child of fifteen years of age, affected with soft tumours in the neck; they

were considerably lessened by the use of this medicine, which shewed the like sensible effects, as in the cases of leprosy, in increasing the different secretions of sweat, urine, and saliva.

Several other remedies may be here enumerated, that have succeeded in the hands of different practitioners, in counteracting the progress of leprosy. The arseniate of mercury has succeeded with Dr. Clarke of Dominica, in a number of instances. The nitric acid, has been proposed by others, as producing, if not a cure, strong symptoms of amendment. Indeed we may infer, that every medicine that possesses a powerful action on the skin, will be here of service; and in this view, antimonial preparations have been much used, and always with certain advantage, though not to the extent of curing. As a dryness, hardness, and at last rigid state of the surface, is always the fore-runner of this disease; those powers which immediately act upon it, independent of the system at large, cannot fail to be highly useful in accelerating the effect of any internal course of medicine resorted to. The warm bath, therefore, in all diseases of the skin, as well as this, has at all times been a powerful auxiliary; but in place of it, the application of the vapour bath,

where heat and moisture are combined, in their most powerful form, would certainly deserve a preferable trial as an auxiliary remedy.

That the leprosy is the consequence of a specific contagion, of a highly infectious nature, appears to me strongly confirmed, by the judicious precautions taken in the British West Indies. So much is the slightest appearance of this disease dreaded in that quarter, that the unhappy victim of its attack is deserted, even by his nearest friends; they are afraid to approach him, much less to eat at the same table, or drink from the same cup. This dread, so general in every island, can only proceed from a strong sense of its infectious nature, and a powerful conviction of that infection being of a very subtile and active kind. The precautions used, we are to consider as not the result of an ill-founded popular prejudice, since it is sanctioned by the practitioners of that country, and obtains among the best informed of the inhabitants. It is perhaps as ancient an endemic in the West Indies as in Madeira.

Where the vapour bath is employed, its action will be much assisted by the use of friction, and this operation, should be conducted, during the time the vapour is applied,

and while the surface is in a patulous and relaxed state, through the sound part of the skin; a variety of substances may be thus introduced, in the form of ointment, or blended with an oily matter, to accelerate their entrance, and both the palliation of smyptoms, as well as the complete cure much accelerated.

Lesser Cutaneous Affections.

Besides leprosy, there a few other cutaneous affections of a milder nature, very general in the island of Madeira. To these affections persons of all ages are subject, as well as in every condition of life.

Psora.

Psora or Itch is very prevalent here, among the lower orders as elsewhere, from their natural uncleanliness, and the improper diet to which they are accustomed; but it is particularly aggravated also, from an unfortunate popular prejudice, which prevents the application of external remedies, which are considered as injurious to health, and even, in their opinion, attended with fatal effects. Here the disease is allowed to run on, without any

means being employed to stop it, and numbers even carry it with them to their grave. In many cases it proves of so exasperated a nature, as rather to resemble herpes than itch.

Ouçāo.

By this term is understood an inveterate species of the former disease, more frequent in its attacks in infancy, than at an after period, and even so early as while the child is at the breast. Its appearance is first about the ancles, toes, wrists, and fingers, whence it generally spreads over the whole body. The name ouçāo, is given it by the natives, and its origin proceeds from small animalcules piercing the skin, which render the disease highly infectious. This cause is so evident, that a delineation of one of the animalcules may been seen in Dr. Adams's Work on Morbid Poisons; and the learned author observes, that it possessed the power of leaping, when he first saw it, with a force equal to that of a flea. It is perfectly visible to the naked eye, is somewhat larger than a cheese mite, and belongs to the *genus* Acarus (Siro Exulcerans of Linnæus.)

The first appearance of the disease, is in the form of a pellucid watery vesicle, attended with intolerable itching, and which, on being rubbed, breaks and discharges a thin watery fluid. A crust or scab is afterwards formed, from under which there is again emitted an acid icherous matter. This matter corrodes the neighbouring parts, and tends to extend the disease, which is further assisted by the ova of the original infectious animalcules, and the locomotive power they are ascertained to possess. Thus it is conveyed over the body, and the eruption is soon rendered very general. Though this disease does not in general prove very formidable, yet it is often difficult to cure, and continues chiefly confined to the parts first affected.

On the removal of the animalcule, either by extraction, or such external applications as destroy it, the vesicle readily heals; and the disease being more frequent among the children of the poor, than the richer classes, there is seldom employed by their relatives any other mode of cure, than *extraction*, by means of a needle or pin, an operation at which, from frequent practice, the mothers and nurses are very dextrous. But in the way of medicine, this affection readily yields to the application of

the mercurial and sulphur ointments; at least, they are the remedies I have found used with most advantage to remove it.

Alfora.

From a similar cause of animalcular irritation is derived another cutaneous malady, known by the name of Alfora, from the small winged insect, which occasions it. This insect is about the size of the one described, as producing the itch, and the affection it entails is most troublesome during harvest, and immediately after it. From this circumstance, persons in the country are most liable to its attack. The seat of this affection in adults, is the ham and under the arms, and in children, it occupies behind the ears, and about the roots of the hair.

It commences with a sense of intolerable itching all over the body; which is succeeded on scratching, by speckled swellings, resembling the stingings of nettles. When the skin is carefully examined, there appear on it numberless small vesicles, turgid with a liquid fluid, and in some places they run together. On breaking, these vesicles generally form a crust, and proceed no farther; but in children, their conse-

quences are more severe, for they not unfret quently leave behind them sores, that discharge a vast quantity of a very acrid humour, and are often tedious and troublesome to heal. Though these sores occasionally occupy different parts of the body, yet they are more especially confined to behind the ears, and round the back of the head.

In this disease, like the former, *extraction* is the mode of cure preferred by the people themselves, and from the dextrous manner in which it is performed, they are generally successful. The great art is in having recourse to the operation before the animal has time to deposit its ova; for after that period, the eruption becomes too general for this means of cure to be applied.

Herpes.

Herpetic eruptions are equally common here as elsewhere. Their origin may be traced to uncleanliness, and hence they are chiefly prevalent among the lower classes, who, from the habits and mode of life, are much disposed to be filthy. In this climate, they assume often a highly contagious nature, a circumstance to be particularly attended to, and made

known by a practitioner. The different metallic oxyds, either in the form of a watery solution or ointment, generally perform a cure; but perhaps it may be always proper to join, with such external means, a mild alterative treatment, which, whatever the cause may be, will never fail to be useful, as a measure of precaution. The combination of the oxyd of mercury and lead, will be found the most successful external application.

Sudamina or Prickly Heat,

Is a disease very frequent in all warm climates, and not less so, in the island of Madeira. It breaks out in minute papulæ, in different parts of the body, sudden in their appearance, and as sudden in their departure. In its most aggravated state, a cool regimen is only necessary, and here it is seldom so severe, as to stand in need of any medical treatment.

Essera.

The same may be said of the essera, which differs from the former by appearing in the shape of hard flat tubercles; and at the same

time it differs also from the urticaria, by the tubercles being larger. It requires as little medical assistance as the former.

Erysipelas.

Erysipelas is a disease here not unfrequent, and in the young, who are not so subject to it as more advanced life, it readily yields to the cool treatment. All persons once having this disease, are liable afterwards to be annually attacked by it; and in old people, it often attains that degree of violence, which constitutes carbuncle, and forthwith proves fatal, by suddenly terminating in gangrene.

Affections of the Chest.

After the diseases of the skin, I proceed to consider the pulmonary complaints of the island, as they attack under three forms, of Cattarrh, Pneumonia, and Consumption.

Cattarrh.

Cattarrh, or slight colds, are here as common as in the more variable climates of Europe; the slightest change of temperature, is sufficient

to produce an attack. It is, however, in its nature generally mild, and unless where a strong predisposition exists to phthisis, seldom terminates in that disease. Indeed the mildness of its nature requires here but rarely the interference of medicine

The contagious catarrh or influenza of the northern regions, has occasionally paid a visit to this island. It has, however, assumed on these occasions, a milder form, and not been distinguished by the same exasperated symptoms, nor followed by the same alarming consequences, as when epidemic in Europe. Hence little aid from medicine has been found necessary in its treatment.

Pneumonia.

During the cold months of spring, pneumonic complaints are frequent in Madeira; for the same cause that produces catarrh, when more powerfully applied, will excite affections of the chest. These complaints are here sometimes ushered in by violent pyrexia, instead of that insiduous and mild commencement of the attack, so conspicuous with such disorders in Europe. They are frequently also combined with typhus fevers, and in this state they form a

nondescript disease, the treatment of which is extremely difficult, as presenting such opposite indications. When its symptoms are very violent and rapid in their progress, spasms arise, which suddenly destroy the patient. These spasms much resemble the symptoms that are known to attend the peculiar affection, styled angina pectoris; though from the sudden attack here, and rapid progress of the symptoms, no suspicion of permanent organic change of that nature, which forms the cause of this disorder, can be supposed to have taken place. From this account, the treatment of pneumonia here can be regulated by no certain plan, but left entirely to the judgment of the practitioner, who will act according to circumstances.

Phthisis Pulmonalis.

Madeira, from its uniformity of temperature, and purity of atmosphere, has long been, and still continues to be, the favourite retreat of consumptive patients from the northern parts of Europe. Here the unhappy sufferers, under this formidable disease, cheat the winter of their own climate, and gain that cessation of suffering, which such a situation is fitted to produce. Yet still, though so highly beneficial in this

disease, with the natives of other countries, it is not to be concealed, that no malady is more prevalent here than phthisis, with the natives of the island. Persons of all ages, and of both sexes, fall victims to it; nay, whole families, have at times been suddenly swept away by it.

The species of the disease that produces these ravages here, is that connected with scrophula, a disorder equally common here as in the colder regions of Europe: * it uniformly at first assumes the appearance of a mild catarrh, but afterwards, when the real pulmonary symptoms commence, they prove more violent and rapid in their progress, than in the phthisis of northern climates.

But it is chiefly from the itinerant patients, who have been ordered here from Britain, my ideas of this melancholy disease have been drawn, and my experience in its

* Pneumonia has been known to terminate in phthisis, but only, I apprehend, in those cases, where there already existed a predisposition to the disease; and where catarrh has appeared to produce the same consequence, it must have been under similar circumstances; for there is scarcely an individual, who has not at some time or other had catarrh, yet, not one of 5000 has contracted phthisis, and where phthisis has occurred, it will be found only in those peculiarly predisposed to the disease.

treatment founded. In these patients I have remarked, that the disorder is of that species, which either arises from tubercles, and is connected with scrofula, or else is accompanied with a faulty confirmation of the chest. Before such patients repair to this *last haven* of health, their malady is unfortunately, in too many cases, in its last stage, when neither change of climate, nor any remedy whatever can be of service. From what cause this backwardness to an earlier trial of a southern climate proceeds, is not for me to determine, but it would be well if the physicians of such patients, were to recommend a change of temperature, in the first stage of the malady, where the tubercle is yet in the inflammatory state, or where, if suppuration has taken place, it is still in a slight degree, and the lungs have suffered little derangement in their structure and functions. It is then, and then only, a change of climate will be truly beneficial. Besides the advantage of the voyage itself can only be reaped by those who are able to bear its inconveniencies, not by the worn-out victim of suffering, sinking under the last symptoms of emaciation and debility. Besides this favoured climate, even on their arrival, is not without its inconveniencies to persons in their situation. The people of

Funchal, and indeed the natives in general, will hardly, under any circumstances, receive into their houses a phthisical patient, on the idea that the disease is of a contagious nature,* and in this they are confirmed, by the number of such patients who croud here at one time of the season. But though winter in Great Britain is carefully to be avoided by the consumptive, summer is by no means unfavourable to this complaint. The proper period of such patients departing from their native shore, is the month of October, and under all circumstances in Madeira, the fittest season for invalids, is from November to the beginning of June. This was also the opinion of the late Dr. Cullen, who, in his Lectures on this disease, was wont to observe, in directing a change of climate, that it was as pernicious for phthisical patients to pass the summer in a very warm climate,

* A few cases have certainly occurred here, where the disease apparently originated from contagion. I have myself met with instances of husbands, to all appearance, communicating the disease to their wives, and wives to their husbands; but I have no doubt, in such instances, that the predisposition to the disease from tubercles existed. Whether or not this predisposition was excited to action, by the frequent inspiration of the vitiated matter, exhaled from the lungs of those affected, I cannot determine.

such as Madeira, as to remain in England in winter, and indeed that the most benign climate in such cases, was found in the south of England, and in the winter of southern latitudes.

I have hitherto confined my remarks to that form of the disease which may be *strictly* termed *phthisical;* but it appears also, in this climate, in another shape, that of *Marasmus,* or Tabes Mesenterica. This species generally shews itself in very infancy. Poor children, perhaps from the bad quality of their food, are particularly liable to its attack: its chief symptoms are an enormous belly, a pale ghastly countenance, great emaciation, and constant fever, with a dry rough skin. Such cases are generally connected and prove fatal. In all dissections of this species of the disorder, I have uniformly found the lungs full of tubercles, some of them in an indolent state, and others of them arrived at suppuration; while the mesentery and lymphatic glands were always at the same time affected. In one case, I recollect meeting with a cluster of these glands, swelled to the size of a child's head, while the others adjacent equalled the size of a pullet's egg, being greatly indurated. Worms and acrimonious scabs are also found in the intestines in considerable

quantity: the former are generally of the species of lumbrici, and it has occurred to me to see, in one or two cases before death, immense quantities of these worms voided in the form of large balls, connected together by tough slimy matter. These balls could be seen and felt on the outside of the abdomen, and there can be no doubt that these insects contributed to the death of the patient.

In cases of phthisis the mode of treatment I have found most successful, has consisted in the cautious administration of digitalis, with the use of those means that are suited to palliate distressing symptoms. On the subject of digitalis I have the greatest satisfaction in stating, that in almost every instance where I have administered this medicine in Madeira, I have experienced the most beneficial effects from it. In incipient cases of the disease, which generally occur only in my practice among the natives, I have very frequently obtained by means of it a perfect cure. Even in the advanced stages of the malady, where there not only prevailed purulent expectoration, but strong hectic fever, the usual state in which patients arrive from England, I have had great reason to be satisfied with its palliative powers, and a few of these instances I have certainly

cured by it. One constant effect of it has been, delaying for a time the fatal issue of the malady. Where the remedy therefore has proved unsuccessful, I attribute the failure more to the disease being allowed, from neglect and inattention, to proceed to that confirmed height when neither medicine nor climate could be of service, than to any inadequacy of its specific influence. This unusual success I ascribe, in a great measure, to the concomitant advantage in the benignity of the climate, and also to a constant attention on my part to palliate the uneasy symptoms. The most distressing symptoms in phthisis, are Cough, Dyspnœa and Pains of Chest, Hemoptoe, Anorexia, Hectic Sweats, Costiveness, and Diarrhœa.

Cough.

The cough accompanies almost every stage of this disorder, and ought to be particularly attended to, for whatever steps are taken to relieve it, serve always more or less to mitigate the severity of the disease. The medicine I have generally experienced here most serviceable is opium, either exhibited in the form of draught at bed-time, or combined with some mucilaginous substance, as a solution of gum

arabic or tragacanth, and given in the form of mixture at repeated intervals during the day. The good effects of such a combination, I always considered as much encreased by the addition of a little of the tincture of digitalis. Where fever accompanies the cough, to this mixture I add a small portion of the tartarised antimony, and prescribe to be used along with it the saline julap; or, in place of the latter, in order to give a free determination to the skin, I combine with the original anodyne mixture, a proportion of squill vinegar; or else give a pill, composed of squills, calomel, ipecacuhan, and opium, which is particularly serviceable in cases attended with little expectoration. Instead of opium, where the skin is not very hot, I prefer the paregoric elixir, either given in the form of draught, or combined with the former pectoral mixture; and in cases where this symptom of cough seems to depend merely on what is termed morbid irritability, I have often recourse to the narcotic influence of the hyoscyamus and cicuta, or to the astringent powers of the uva ursi.

Dyspnœa and Pains of Chest.

These symptoms, which so generally attend the disease in every part of its course, often

require great experience to discover their true nature, and to remove or palliate their severity. Where they occur at an early period of the disease, and are connected with a fulness of the pulse, and other marks of a purely inflammatory nature, then bleeding may be necessary, with the assistance of cooling laxative medicines, and the topical application of blisters. But it happens more frequently, that these symptoms appear in the advanced progress of the disease, when debility is the predominant symptom, and when they evidently partake of a spasmodic nature. In this case, though they are accompanied sometimes with a hot skin, and quick pulse, yet antispasmodics form the leading indication, and of this class, opium is the best. Its effect is here to be assisted by topical means, as the application of leeches and small blisters to the chest, and the occasional use of cooling purgatives. These symptoms are found at times to be aggravated, by the presence of wind in the stomach or bowels; but the latter circumstances are relieved by the same means now recommended. Some idea of the cause of the pain, may be drawn from the progress of its attack. If it shift, and exist only in a slight degree, then it may be generally conceived to be some affection of the intercostal muscles;

but if it is very acute and fixed in its seat, then it must proceed from an inordinate contraction of the muscular fibres of the pleura. In this latter case, I have generally discovered on dissection, strong ahesions of the lungs to the diaphragm and ribs, by means of tendinous cords; and these, it is natural to suppose, must have been the source of the acute pain felt by such patients. Here blisters and embrocations are the only useful local remedies.

Hemoptoœ.

The course of the disease is often marked by the occurrence of this symptom, and when it appears in the latter stage, it is always an alarming circumstance; for it frequently at this period proves the sudden cause of dissolution. Hence it requires the most prompt use of means, and as it seldom occurs it the form of active hemorrhage, bleeding is rarely advisable. Practitioners are here apt to be misguided by the uncommon degree of tension so frequently felt in the pulse; but this depends on mere irritability as its cause. Here the use of digitalis is highly successful, particularly if accompanied with the application of blisters to the side, and the occasional administration of cooling

saline laxatives. These remedies may be farther assisted by the saline julap with nitre, having in it a portion either of tartarised antimony or laudanum. Should the hemorrhage prove excessive and continued, joined with evident marks of debility, then the infusion of roses, with the sulphuric acid, and perhaps laudanum, is to be frequently administered. The opium, in a solid form, will be also serviceable.

Anorexia.

This symptom, though chiefly confined to the latter stage, sometimes attends the whole course of the disease. It is one highly distressing, and I have found it best relieved by bitters, particularly the quassia, columba, and angustura bark, which may be joined occasionally with aromatics; and should a predominant acidity attend, then a small proportion of kali will make a valuable addition.

Hectic Sweats.

These are always an alarming symptom in this malady, and often exhaust the patient so much, that he is ready to sink under them.

Besides they are difficult to combat. The sulphuric acid with bark, I have occasionally found serviceable, and great benefit I have also derived from causing the patient to wear a flannel shirt, and sleep at the same time in blankets.

Costiveness.

This is both a troublesome symptom, and also apt to increase every other. The most effectual means for its prevention in my practice I have found to be the occasional administration of some saline purgative, as the sulphat of magnesia, the soda phosphorata, or some laxative electuary; for more active purgatives are seldom necessary.

Diarrhœa.

No symptom is so alarming in this malady, as the colliquative diarrhœa, which marks its advanced progress. It is distressing to the practitioner, and if not carefully attended to, it will soon carry off the patient.

When it is slight, and shews a prevalence of acidity in the first passages, the chalk mixture with laudanum will be of service; or, where the laudanum disagrees, the extract of white

poppy, or the compound spirit of vitriolic æther, given in the quantity of a dram, or two drams, twice or thrice a day, may be substituted. But in general absorbent medicines are too insignificant to check this symptom, and astringents must be had recourse to in preference. The most useful and elegant form of the latter, I have found to be the following:—

℞ Confect. Catechu. ʒ ſs.
Aq. Cinn. Simpl.
—— Fontis. ā ℥ ii.
Spt. Ammon. Comp. ʒ i
Tinct. Opii. gutt. C.
Sirup. Symp. ℥ ſs. M.
Sumat. ℥ ſs. urgente Diarrhœa.

To this mixture, I occasionally add a little tincture of kino, and with it I find it useful to administer at times a dose of opium in a solid form.

Regimen.

In the treatment of no disease is an attention to regimen so necessary as in consumption. In the first stage of its progress, and so long as there are no very obvious symptoms of debi-

lity, the most strict antiphlogistic plan ought to be observed, and scrupulously adhered to. In Madeira, however, it is often difficult to procure the articles of diet, which form properly this system. In my own practice, I generally recommend a milk diet, and where it can be had, I give a preference to ass milk, though it is difficult to procure, from being both scarce and dear. Cows and goats milk, is only to be had in abundance, and this is chiefly to be depended on. To obviate the debility, however, which is a prevalent symptom in this disease, and always to be guarded against; I find it necessary to allow once a day a little animal food, of easy digestion, which is in proportion to its alkolescency. Hence game, chicken, and fresh fish are the articles I recommend. In these cases, the best drinks are barley water, toast and water, or almond emulsion; and if the bowels are regular, lemonade or orangeote,—spirituous and vinous liquors of all kinds are to be strictly avoided, and wine is indeed only admissible, where there is no frequency or fulness of pulse. Where much debility prevails, with exhausting hectic sweats, and where the patient of course appears rapidly sinking under the disease, in these circumstances, a moderate use of it is necessary, pal-

liative, and indispensable to relieve the declining state of the patient. From the connection of phthisis, as already observed, with scrofula, mineral waters are a remedy, which promise much benefit in this disease. So long ago as the year 1791, I communicated to my friend Dr. Duncan of Edinburgh, an account of a case, which had been cured by the mineral waters of St. Miguel; but whether the cure was to be attributed entirely to the waters, or to the voyage, I cannot determine. I have known several other cases, which have received much benefit from the same remedy.

In all the cases of phthisis which I have dissected, the same appearances of tubercles and vomicæ have been conspicuous, as in those cases which have taken their origin in Europe.

Anomalous Diseases.

Under this head I shall offer a few observations on some remaining disorders endemic in Madeira—one of which is

Arthritic Affections.

Under this form may be considered, those wandering pains, and irregular muscular affec-

tions, which are supposed to arise from a gouty or rheumatic cause; they are confined to persons advanced in life, and generally here, as elsewhere, baffle the powers of medicine. The regular Gout, is here a disease less frequent in its attacks than in Europe, the violence of its course being, perhaps, somewhat checked by the influence of the climate.

In the same manner, Rheumatism is oftener here in the chronic than acute form, and when it does occur, will not allow bleedings and that active treatment, which is necessary in the northern climates

Colic;

Is a common disorder in Madeira, and particularly among the lower classes. It often ends in Ilias, in which case its termination is generally fatal. Country people, from being overheated, and drinking suddenly cold liquids, are very subject to it. Excess of the use of fruit also may be noticed as a frequent cause of its attack.

Dropsy.

The lower classes in this country, when they pass middle age, are very subject to this complaint, which is generally attended with obstruc-

tion of some of the viscera. The low living of such persons, their hard labour, and exposure to every change of atmosphere, are sufficient causes to induce it, and as it generally marks a breaking up of the constitution, it is rarely entirely removed, though it may be palliated by the usual remedies for a time. Women about fifty, are here also the most frequent victims of it, and especially those who have devoted themselves to a monastic life, where low diet, religious severity, and the want of pure air, joined to a life of *single* blessedness, soon prey upon the health, and induce obstructions of the principal organs.

Hemorrhoids.

Hemorrhoidal affections are very frequent among those who lead a sedentary life. They are more frequently attended with a sense of weight, uneasiness, and pain, about the anus, than with dangerous discharges of blood. A variety of dyspeptic symptoms also often supervene, which, though of themselves seldom alarming, yet prove highly troublesome. Cases of this disease have likewise occurred to me, where the mere evacuation of blood by the anus, had nearly proved fatal. I have also seen the disease attended with periodical hæma-

temesis, where the blood vomited, proceeded without doubt from the hemorrhoidal veins. In some instances in my practice, I have had reason to be persuaded, that the disease proceeded from large tumors of the rectum, extending several inches upwards within the gut, and these tumors are apt in going to stool to produce prolapsus ani. I remember having been called to a case of this kind, where a number of such tumors had been extirpated, about thirty years before, by Mr. Hunter. From that period, the patient had been unaccountably subject to frequent prolapsus ani, and so great was it the day on which I was sent for, that the reduction was impossible. In consequence of this, in the course of a few days, an extensive sloughing of the villous coat of the rectum took place, when another tumor made its appearance, situated five or six inches within the gut. On the removal of this by the ligature, the patient, contrary to his most sanguine expectations, became free from every complaint. The parts recovered their tone, and thus, both the hemorrhoidal affection, and the prolapsus of the part disappeared. This patient happening to die a twelvemonth after of ascites, an opportunity was offered me of inspecting the gut. This I embraced, and found

the cicatrix consequent on the sloughing of the rectum, extend about six inches up the gut, occupying at the same time its whole circumference.

Epilepsy;

Is a frequent disease in this country, chiefly attacking children, and in general symptomatic of teething, worms, or acid sordes in the first passages. In one instance it appeared symptomatic of hydrocele. A gentleman, about forty, had been for some years subject to a swelling of the scrotum, which gradually attained the size of a young child's head. During this period he had repeated attacks of epileptic fits, which gradually increased in frequency. He submitted to the radical cure by injection, since which time, about a year and a half ago, he has had no epileptic paroxysm.

Among the poorer class of persons, who live very low, this complaint seems to be idiopathic.

Paralysis and Apoplexy.

These complaints are frequently the consequences of the too free use of spirituous liquors of a base and unwholesome kind. They generally attack persons advanced in life; apoplexy

proves in general suddenly fatal, while palsy conducts, by a more slow and complicated train of evils, to the grave.

II. EPIDEMICS.

In the preceding division I have treated the leading Endemics that occur in Madeira, and offered such remarks on their nature and treatment, as apply chiefly to their appearance and progress in that situation. Under the second, or next division, I am to examine the Epidemics of the island, which, though less frequent in their attack, assume a more formidable aspect when they do arrive, and take a wider range in their appearance. These all arise from a specific contagion. The first here, as elsewhere, to be considered is fever,

Fevers.

So general is this form of disease in every country, that two thirds of mankind are calculated to fall victims to it, who are cut off by disease. In Madeira it is equally common as elsewhere, but generally mild in its nature, and seldom fatal, where treated with proper ma-

nagement. The typhoid species is the most frequent appearance it assumes, and the plan of treatment must be directed with a view to support the system, and obviate the consequence of putrescency. It is chiefly in the country where fevers are fatal, and where the old practice of bleeding prevails; there being no other medical assistance there, than the barber-surgeon can give, and with such practitioners, bleeding is in all cases the never-failing remedy. By such imprudence, fevers, however mild in their first attack, soon assume a serious aspect, and to this cause their fatality in this island may be attributed. In the towns, where the patients are under regular practitioners, and therefore properly treated, their termination is generally favourable, and warrants the conclusion I have stated with respect to this form of malady.

Scarlatina.

This formidable disease was the first time epidemic in Madeira, in the summer of 1806, and was attended with a fatality, which few diseases in this climate have displayed.

The characteristic symptoms which marked its attack, were inflammation of the tonsils, and mucous membrane of the fauces, attended

with extensive and repeated sloughing of these parts; eruption of the skin, varied in its appearance, form and extent, in different cases, and great debility of the whole of the functions. The affection of the throat, however, was by no means a constant symptom, and the attack was as frequently without as with this appearance. Where it occurred, the affection of the throat, in some cases, completely resembled the Scarlatina Cynanchica, in others, the Cynanche Maligna.

The eruption also was often absent, and where it occurred, it was by no means uniform in its appearance. Still this variety proceeded all from one source, "*a specific contagion,*" and was in every instance the same identical disease, however differently proportioned in distinct cases.

At its commencement, so contagious was the nature of this epidemic to appearance, as to be considered as the epidemic or contagious catarrh combined with quinsy, and in other cases, as measles; and indeed from the very variable mode of its attack, though its nature soon ceased to be in the least doubtful to an experienced practitioner, still it could not fail, from its incipient appearance, to deceive one who looked only to the regular and usual form of scarlatina.

In many cases, for three or four days, delirium was the only symptom of the disease, attended with anxiety of the precordia, dyspnœa, palpitation of the heart, cough, bilious vomitings, œdematous swellings of different parts of the body, and, in proportion to the violence of these symptoms, suspension also of sense and motion.

In other instances, the malady was ushered in by violent hemorrhage from the nose and mouth, attended with a quick feeble pulse, and occasionally frequent fits of syncope.

Children were the chief victims of its fury, while those who had attained twenty-five or thirty years of age, seldom felt its attacks. When they did, the symptoms in the throat were much more violent than in other cases, particularly if they were of a robust habit, and the appearances of the skin were at the same time generally absent.

The symptoms of the disease, when appearing in the true character of scarlatina simplex, were the following:

On the second and third day after exposure to infection, the patient was seized with violent shiverings, suddenly succeeded by increased heat, and this as speedily terminated in profuse sweating, or at least in a general moisture of

the surface. Head-ache then came on, succeeded by vertigo, anxiety about the precordia, nausea, with inclination to vomit, pain of the stomach, constipation, and paucity of urine. These symptoms were attended with a quick feeble pulse and lassitude. The face assumed a purple redness, with more or less œdema, extending towards the neck and breast; the extremities also, particularly the lower ones, became œdematous, and shewed uniformly a bloated appearance. The third or fourth day, discovered the eruption first upon the neck, breast, belly, and thighs, and at length diffusing itself over the whole body, attended by the œdema of the face and extremities becoming also general. The form of the eruption varied in different cases: sometimes it appeared so pale, as to be discerned with difficulty; sometimes it consisted of such large red spots, as have been said to occur in this disease, and in the Scarlatina Anginosa. At other times, small distinct spots, brightly red, were visible, as appear in Cynanche Maligna. Sometimes the specked swellings of the urticaria shewed themselves, and not unfrequently pustules, like those of small or chicken pox. The malignity of the symptoms seemed to be proportioned to the degree of fever or pyrexia, and it was in these cases where much fever prevailed, that vibices

were observed. The skin at the same time having that rough inflamed fiery appearance, which, by writers on the disease, has not unjustly been compared to the colour of a boiled lobster.

Where the patient did not sink previous to the seventh day (which often happened on the 5th or 6th) the efflorescence came to its height, and soon after this period, began to disappear, attended with an abatement of febrile symptoms, and, in some places, a desquamation also of the skin, while the anasarca increased.

When the disease was about to assume the type of Cynanche Maligna, the patient generally complained first of an uneasy stiffness about the neck and throat, with difficult deglutition and hoarseness. Where fever was not already present, or had preceded these symptoms, it now commenced. A florid glossy redness appeared to occupy the mouth, velum pendulum palati, back part of the larynx, tonsils, uvula, and perhaps other parts of the fauces, which were covered also with crusts of a cineritious colour. The saliva seemed increased in quantity, which was at the same time more viscid than usual. The tongue was covered with a thick brown crust, and the breath felt hot and offensive. All these symptoms became greatly

aggravated towards the third day, by much tumefaction of the fauces, and their increased erysipelatous aspect. The difficulty of deglutition was also felt more severe, attended with head-ache, great sickness at stomach, anxiety of the precordia, extreme languor or coma, a feeble fluttering pulse, quick respiration, and sometimes delirium. About the fifth day, either the patient sunk under this aggravated state of the disease, or the affection of the throat beginning to subside, recovery took place, by the return of strength. In many cases, no eruption of the skin appeared at all.

But these varieties of the disease, already stated, however malignant, were comparatively mild to the anomalous form, which it generally assumed. In many of them death ensued on the second or third day, without the least symptom of the characteristic affections of the throat or skin. Here the predominant symptoms were, great anxiety about the precordia, extreme debility, drowsiness and frequent startings from sleep, delirium, convulsions, quick feeble pulse, and hot dry skin. In other cases, the patient just survived, till the affection of the throat and skin took place, when he died under the influence of these or similar symptoms. In such cases, the affection of the

skin, was really a general inflammatory state, without any regular appearance of eruption, and the angina only manifested itself, by the stiffness of the neck on motion, and the appearance of sloughs in the fauces. In a few cases, the patient died in twenty-four hours, of apparently typhoid debility, without any eruption, or any affection of the throat being discovered. In such bad cases, it was indeed only when the patient survived till the fourth day, that the disease was distinctly marked. In such situations it is also to be observed, that the affection of the throat, was seldomer absent than the cutaneous eruption, which was frequently not to be traced. The internal fauces here generally presented a deep red colour, the sloughs and ulcers were very extensive, and the tongue and inside of the mouth were covered with numerous aphthæ. The secretions of the saliva and mucus of the nostrils, were either so thick, as to endanger suffocation, or so thin and acrimonious, that the lips, chin, cheeks, and neighbouring parts, became excoriated, and sometimes ulcerated. The discharge from the fauces was also in the same manner often extremely thick, and tenacious, and in such quantity, that the patient had no sooner spit out what was collected, than it became almost instantly renewed.

From these acrid discharges passing down the æsophagus into the stomach, violent looseness frequently took place, attended with tormina and tenesmus, which accelerated the fatal event. In certain cases, I was induced to think that this diarrhœa might be also produced, by an acrid matter of the same kind passed out from the mucous follicles of the intestines. Though the thirst of the patient was entremely urgent, the greatest aversion prevailed to quenching it, from the difficulty and pain of deglutition, and the attempt seldom failed to excite a spasmodic action of the muscles of the pharynx; whence followed an aggravation of all the symptoms, and particularly the anguish about the heart, the most distressing of any. In all these malignant or anomalous cases, when the cutaneous efflorescence took place, it assumed all the various appearances which distinguished it in the milder forms. The desquamation in such cases often continued for a length of time. Even the nails, and entire skin of the hands and feet, often fell off. Vibices, of various sizes, at times supervened on the legs and thighs, and not unfrequently, after the desquamation was finished, a second pustular eruption appeared, in which the disease seemed more infectious than at any former period.

The appearance of both the angina and exanthema at once induced a bad prognosis. Here the stomach was always much affected, and swellings of the parotid and submaxillary glands often supervened; in some cases to such a degree, as to have actually occasioned suffocation. In forming the prognosis in these cases, it may be observed, that when the fever suffered no abatement about the usual period of desquamation, but continued with unremitting violence: when the delirium was of the wild ungovernable kind: when the efflorescence was of a dusky hue, and the quantity of viscid matter secreted from the mouth and fauces much increased: when these parts appeared, at the same time, in a dry parched state, and of a blackish deadly hue: when the dyspnœa and difficulty of deglutition were also greatly increased, then the disease proved certainly fatal, and violent convulsions were the immediate precursors of death.

The common sequel of the disease was anasarca, and indeed, in almost every case, this morbid symptom supervened, when the disease had not already proved fatal. It proved also itself the cause of much fatality; its so frequent occurrence affording strong evidence of the power of this specific contagion, as well as of the violent

excitement which takes place in the system while under this disease.

In the progress of its course, this anasarca began generally in the lower extremities, then attacked the face, which appeared at the same time bloated, and at last dispersed itself over the whole body, attended with alarming vertigo, oppression about the precordia, frequent startings from sleep, often such inordinate or irregular actions as accompany St. Vitus' dance, and delirium. Convulsions and coma were the accompanying symptoms where it was to prove fatal. In about a week after the disappearance of the affection of the throat or skin, was the period of its commencement. Sometimes it immediately supervened, being merely an aggravation of the œdema, which already marked the progress of the disease. At other times, it was not observable till several weeks afterwards, when the patient had completely recovered from the disease, and had become as lively and well as usual. After death, in these cases, on inspection of the body, effusion into the cavities of the brain, precordia or thorax were generally discovered.

But this disease, however differently proportioned in its symptoms in different cases, seems in every instance to have been identically of the same nature, and to have proceeded from the

same source, a *specific contagion.* It is impossible to explain why, in different cases, the disease should have assumed such a variety of forms. The matter however being not new to us, it made no essential difference as to the mode of treatment. Every case that presented was treated with the same care and attention, as if it had been to turn out a case of the most malignant form of the disease, just as when small pox, or typhus, are epidemic, and when of course there are numbers of cases of typhus mitior as well as of typhus gravior, and of distinct as well as confluent small-pox; we, in every case that occurs, bestow equal attention, not knowing what may be the future form of the disease.

In may be observed also, that here, as in small-pox and other specific contagions, the infection was more violent from fomites, than when received from the human body, and even when received from the human body, that the period of desquamation rendered it stronger.

After these observations on the history and cause of the disease, I proceed to its treatment.

The disease being generally ushered in by pyrexia, nausea and vomiting, the use of emetics become strongly indicated, and these medicines afforded always relief, particularly where the

throat was much affected; for, by the action of vomiting, even the disengagement of the sloughs was promoted. Nor did they tend less to remove that collection of viscid mucous, constantly secreted from the fauces, to which may be added, their emptying the stomach of any acrid matter lodged in it, and producing, at the same time, a gentle but general diaphoresis. Their repetition was found necessary, and certainly superseded the use of more active medicines.

The best emetic I generally found to be a combination of ipecacuhan and tartarised antimony, perhaps in the proportion of fifteen or twenty grains of the former, to one or more of the latter. Their good effects were greatly kept up, by administering the saline mixture, containing also a small proportion of the tartarised antimony.

The efficacy of cathartics was equally conspicuous in this disease. It was generally attended, as I have stated, at its commencement with constipation. The alleviating of this symptom seemed always to be of the greatest service. The patient was immediately relieved by it, from the more general oppression and other uneasy feelings. The same relief followed their repetition, at every period of the disease, and even in the convalescent state;

but it always required the most active medicines of this class, to affect patients in this malady. What evacuation they produced, was copious and offensive.

The best form of the cathartic, was the submuriate of mercury, or calomel, either by itself or combined with jalap. Ten grains of the former, with a somewhat larger quantity of the latter, were the ordinary dose for an adult, and five or six grains of the mercury were by no means too great a dose for children. Diaphoretics I found of little use, as such, and when at all of service, they were chiefly so, by inducing some nausea, promoting the discharge of acrid matter from the fauces, and operating by stool. But the internal remedy from which I experienced most benefit in this disease, was the sulphuric acid. Its beneficial effects apparently arose from its tonic and antiseptic qualities. I usually administered it in the infusum rosæ. The bark also, either by itself, or with the sulphuric acid, I experienced in some of the worst cases a valuable medicine.

Bleeding, in all cases of scarlatina, I ever found inadmissible; for though at first the excitement of the system was sometimes very considerable, so as to induce one to use the lancet, yet very soon, from the change in the pulse,

this was contra-indicated. Hence evacuations of every kind were in general assiduously avoided, with the exception of purgatives, which were only given in such doses as to unload the bowels of their morbid contents. Topical bleeding with leeches, was found sometimes useful, when violent inflammation prevailed, threatening suffocation. Blisters applied to the external fauces, or nape of the neck, often procured relief, though, from their producing much irritation, they were frequently avoided. Gargles were the principal topical remedy. They were much used, and proved highly beneficial. The gargle I chiefly employed, was an infusion of roses, with a little oxyginated muriatic, nitrous, or sulphuric acid. When with the latter, the same formula was employed as for internal use. When the ulcers were foul and very sloughy, the gargle was rendered more efficacious by the addition of a little borax or alum, tincture of myrrh or bark. When the secretion of the mouth was much increased, and the whole fauces loaded with tough viscid mucous, the steams of hot vinegar and water received into them, from their relaxing emollient quality, thinned the mucus, and rendered the excretion more free.

The only general remedy to be particularly noticed, is the affusion of cold water, or spong-

ing the face and hands with cold water and vinegar; and this new practice, I am confident, would have been of much advantage, had it not been for the popular prejudice in this island so much against it. In the few instances where I had an opportunity of using it, the general febrile symptoms were diminished by it, the evening exacerbations cut short, the efflorescence abated, and no affection of the throat supervened.

I generally directed buckets of cold water to be thrown over the whole body, two or three times a day, and always during the hot stage. The patient, immediately after this operation, felt a pleasant glow all over his body, followed by a gentle relaxation of the skin. But the same effect generally followed the mere sponging of the body.

The treatment of the secondary or dropsical stage, demanded always the most prompt and vigorous means to be employed, from the sudden manner in which it supervened, and the violence of its attack, which rendered it often fatal. Here I found cathartics most useful. A smart dose of the submuriated murcury, or calomel, seldom failed to give relief, especially if followed by a timely application of blisters. Diuretics, as squill, or fox-glove, combined with

calomel, were thought to promote the effect of the latter. The fox-glove I often used by itself with manifest advantage; but when the patient was much debilitated, I experienced much advantage from it, if combined with the bark or chalybeates.

It now only remains to illustrate what I have said of this disease, to relate a few cases which came more immediately under my care.

CASE I.

Antonio Oyeiro, a sprightly boy, aged five years, after returning from school, where he had been exposed to the contagion of scarlatina, was suddenly seized with violent shiverings, head-ache, giddiness, sickness and vomiting, great oppression about the precordia, and delirium. I ordered him an emetic and purgative; but in spite of these medicines the symptoms increased with great violence, and contractions of the limbs, and general convulsions supervened: the latter became soon so severe, that in a few hours he expired, his face and extremities having assumed a deep purple or black colour.

CASE II. *August* 8, 1806.

Rosa, a girl, eleven years of age, was suddenly attacked while at play, in the morning, out of doors, with vertigo and head-ache, which caused her to run staggering into the house: these symptoms became soon accompanied with vomiting, and great anguish and oppression about the precordia. The symptoms on the 9th suffered considerable abatement; but next day recurred with double violence, attended with dimness of sight and delirium. The vomiting was incessant, of a bilious nature, with continual groanings and restlessness, to such a degree, that it required several persons to keep her quiet in bed. The evening exacerbations were severe, with an aggravation of all the above symptoms: there prevailed a constant low muttering delirium, difficult articulation, dry skin, the superior parts of the body feeling hot, with partial sweats on the forehead. The feet on the contrary cold, the pulse feeble and fluttering, with great thirst, and urine in small quantity. Notwithstanding the exhibition of various medicines, these symptoms continued with unabated violence, especially the great anguish, groanings and delirium; severe and fatal

convulsions supervened, which exhausted greatly her strength, as indicated by her very feeble pulse. On inspecting her mouth, the tongue appeared of the colour of ink, with several foul ulcers of the size of a six-pence about its root.

This case affords another strong proof of the virulence of this contagion. The patient, from the statement of the symptoms, had not a moment's respite till the hour of death. The appearance in the mouth did not occur till the last day of the disease.

CASE III. *September 24*, 1806.

Ludovina, a girl, aged seven, after returning from the neighbourhood where the scarlatina had been very prevalent, complained suddenly, towards evening of the 22d, of an uneasy stiffness about the neck and soreness in her mouth, attended with great difficulty in deglutition. The submaxillary glands were tumified, and these local symptoms were accompanied with vertigo, head-ache, occasional chilly fits, succeeded by heat, great thirst, and delirium, especially during the night. The fauces on inspection seemed greatly tumified, of a crimson colour, and covered with several grey coloured

sloughs, particularly the tonsils and velum pendulum palati: there was collected also a great quantity of viscid mucous; the tongue was foul and furred, and a mottled efflorescence appeared on the breast and arms, with slight œdema.—In these circumstances I prescribed as follows:

℞ Antimon. Tartarisat. gr. ii.
Aq. pur. ℥ iv.
Sumat ℥ i. omni semihora usquedum vomitus ciatur.

℞ Rosar. Rubr. exsiccat. ʒ ii.
Aquæ pur. lb. i. coque ad lbss.
et colat: adde Acid: Muriat. ʒ i. pro gargarism:

During the night of the 26th she was very restless and delirious; the tonsils were so much tumified as to be in close contact, and covered with several foul sloughs: the efflorescence and œdema were also increased, attended with a quick pulse, great heat, and thirst. The medicines were in the mean time continued. On the succeeding night the symptoms still increased, with great restlessness and delirium, the pulse being so high as 130; the swelling of the throat was also greater, and the efflorescence had in some places run into large red

clusters, the skin continuing hot and dry: the following alteration in the treatment was then made:

℞ Submuriat. Hydrargyr. gr.iv.
Conserv. Rosæ. q. s. ut f. bolus statim. s.

℞ Acetat. Plumbi ʒ ii.
Aq. distillat. ℥ i.
Aq. pur. lib i. faucibus externis applicetur.

Her face was also directed to be sponged frequently with cold vinegar, and the pediluvium to be used at bed-time. In spite of these alterations, the night of the 28th was marked with delirium and coma, with great restlessness and anguish about the heart, severe tightness about the throat, and difficulty of deglutition. On the right tonsil there appeared a large slough, a vast quantity of viscid matter, tinged with blood, was brought up by spitting from the fauces, while her mouth was dry and parched, and her lips excoriated; the efflorescence also was of a dark brown colour, and the pulse so high as 160; a blister was then directed to be applied to the neck, and the following medicines prescribed;

℞ Submuriat. Hydrargyr. gr. v.
Conserv. Rosæ. q. s. ut f. bolus vespere s.
Continuentur Mixtur. Antimon. Tartarisat et Gargarism.
Utatur vapor acet. calid. frequentur.

The disease during the 27th progressively advanced; it was marked by a restless delirious night, attended with great anxiety; a total inability to swallow took place; the fauces appeared black and parched; the nostrils plugged up with viscid matter; the extremities swelled; the eruption assuming a darker shade, and the pulse extremely frequent and small. In this unfortunate state the following was directed:

Injiciatur Ennem. ex. Decoct. Cinchonæ. cum jure Bevino frequenter.
Utatur gargarism vini rubri.

She continued during the 30th struggling in great agony, and uttering the most doleful groans till midnight, when the whole body becoming convulsed, and she expired.

This is a third instance of the extreme virulence of the scarlatina contagion, and it exhibits one of the worst cases that has fallen under my observation.

CASE IV. *September* 5, 1806.

J. G. aged nine years, was the day before seized with vomiting, succeeded by frequent shiverings, and other symptoms of fever; he then complained of tightness about his throat and difficulty of swallowing, with great heat all over his body, a dry skin, and a full pulse at 135. To these symptoms was joined great head-ache, with a foul tongue, and great redness and swelling of the tonsils and uvula. I directed the patient in this case to be immediately taken out of bed, and put into a large bathing tub, where several pails of cold water were poured over him: this was repeated in the evening, and the symptoms of fever were considerably abated for the time; but still the progress of the disease rapidly advanced as in the other cases, and after a succession of similar distress, he fell also a victim to the virulence of the contagion.

The above cases are sufficient to shew the very formidable nature of this epidemic, which displayed in Madeira a degree of mortality beyond what is met with in Europe, and was equally fatal to the young, who were chiefly its victims, as the most contagious typhus, not excepting the yellow fever.

Cynanche Parotidæa.

This complaint has frequently appeared epidemic in Madeira. In general it manifests itself by the symptoms described by Cullen, "tumour affecting the testicles in the male sex, "and the breasts in the female." Other symptoms, not noticed by that writer, occasionally also occur, as swelling of the labia pudendi. I have also noticed anasarcous swellings of both the upper and lower extremities, and of the neck, which sometimes extend over the whole body.

Dysentery.

This is a disease of a highly contagious nature, and when epidemic the peasantry are most subject to its attack. Autumn is the period of the year, when it is most apt to appear, and though excesses may aggravate its symptoms, they are not to be considered as forming the source of the malady.

The disease generally commences, like most other epidemics, with symptoms of general fever. The affection of the bowels then commences, distinguished by tormina, bloody stools and tenesmus. This last symptom, through the whole progress of the disease, is the most troublesome and painful to the patient This inordinate action of the bowels, is the consequence of strong inflammation, and the disease therefore is properly divided into two stages; the stage of peculiar morbid inflammation, or active inflammatory contraction and spasm; and the stage of debility, or that atonic state which succeeds all inordinate action, when the cause is removed. This disease was particularly violent in Madeira, in 1800, among the British troops that had come to garrison the island,

and the different regiments lost each a greater or less number of their men, from this fatal epidemic.

The causes were evidently cold and moisture, joined with irregularities in diet, consisting in the too free use of wine and fruit, to which they had been unaccustomed.

These causes, in all cases, act more powerfully in a warm than a cold climate, and therefore sooner here laid the foundation for the production of disease. No disease, once produced, is so contagious as this, and it is only by a strict attention to avoiding the causes which induce it, and separating the healthy from any communication with the diseased, that its progress can be checked.

Though this may be done in private life, it cannot in military service, and hence, from the intercourse of the troops with each other, it spreads more among the army than elsewhere. The 3d, 11th, and 85th regiments were all affected with it, at the same time, and from Dr. John Ayres, surgeon to the 3d, I was favoured with a particular account of it, as the disease appeared under his care.

Hence in all cases in the first appearance of this malady, the system of prevention is the great step to be resorted to, and to employ

every means to destroy the specific contagion itself; and next, to guard against those circumstances, which may still exist, and the more readily act as predisposing causes.

In regard to the treatment of this disease, I hold it of the utmost consequence, that the proximate cause, the peculiarly morbid inflammation of the intestines be constantly kept in view; for it appears from dissection, to be in every case directly or indirectly the cause of death. That plan of cure, therefore, ought to be the best, which forms its indications from the view of removing this proximate cause. According to this plan, to remove the peculiar morbid inflammation, to unload the bowels, to relieve uneasy symptoms, and to restore to the intestines their healthy action, are the general indications to be formed. The best and most effectual means of answering at once all these indications, according to my experience, is the use of calomel alone. This medicine, exhibited in doses of six, eight, or ten grains, repeated at intervals, determined in their length of time by the previous effects of its action, and the other circumstances of the patient, has been uniformly found to unload the bowels, and to keep them open; to relieve the uneasy symptoms of tormina and tenesmus, and

even of vomiting, if present; to raise the pulse, and remove that languid look, and general depression, so constantly attendant on this disease. To judge from these effects, the probability is that it also operates it some peculiar way, in a way, perhaps, analogous to its mode of action when applied externally to an ill-conditioned ulcer, upon the morbid inflammation of the intestines, so as to remove it. In regard to astringents and opiates, I have seldom found occasion for such articles, unless where the free evacuation of the intestines was neglected in the first instance, or large doses of such debilitating cathartics, as aloes, colocynth, jalap, rhubarb, or glysters containing acrid materials, had been administered for this purpose. Indeed, I have found calomel to be not only the best remedy in the beginning, for unloading the bowels, and relieving uneasy symptoms, but also in the latter stage, to be the best and softest anodyne.

The following is a return of the admissions and deaths from Dysentery in the regimental hospital of the 11th regiment, in the Island of Madeira, from the 1st of January, to the 15th

of August, 1808, as I was favored with it from the surgeon of that corps.

Admitted 561—died 16.

Total number of sick on the 15th of August 28.

Small-Pox.

The small-pox, when epidemic in this island, as they have frequently been, have swept off great numbers of the young, and particularly in the country, where the practice of inoculation has been opposed by popular prejudice. Of late years, however, this prejudice has considerably lessened, and the mortality from this disease has not been so great as at former periods. The introduction of the modern discovery of vaccination, promises to be here, as elsewhere, of the highest public utility, and from the experience I have hitherto had in it, I am ready to give it all the recommendation which it has been found to deserve in Europe. As yet the application of it is circumscribed; but by a due attention to the rules laid down in performing it, and a proper choice of the matter, I have not failed in a single instance in producing the disease, nor have any of my patients, though subjected to the contagion of small-pox, experienced any attack of that disease.

Measles.

This is a disease which is epidemic in Madeira, among children, as in other countries. The catarrhal symptoms are the characteristic marks of the malady, previous to the eruption, which assumes various appearances, most frequently that of a miliary eruption, and does not observe that distinct and regular form it displays in Europe. In this climate the inflammatory stage is very short, and soon succeeded by a degree of typhoid debility, from which the chief danger arises. A symptom that often occurs here, is swelling of the submaxillary glands, and this symptom sometimes proceeds to a disagreeable length. While therefore the disease in Europe is of a purely inflammatory nature, here the inflammatory stage is of short duration, and passes quickly into the opposite state; a circumstance material to be attended to in the treatment.

The treatment is to be conducted entirely according to the prevailing symptoms. Where the inflammation at the commencement runs high, the use of antimonials will be found of service, and to accelerate the progress of the eruption. Demulcents are highly useful against

the cough and other catarrhal symptoms; and when the diarrhœa comes on, it should not be suddenly checked. But in cases where the typhoid debility appears from the commencement, this plan of treatment must be varied. The eruption is here trifling, or appears under a miliary form, and in many cases it is even attended with petechiæ. Here evacuations are evidently hurtful. The strength of the system must be supported, and the diarrhœa prevented from assuming a dysenteric form, which in such circumstances it is apt to do. It is in this state the disease is chiefly fatal, and it is seldom known to assume such an appearance in Europe.

One of the most distressing symptoms in this disease, is the anorexia at its commencement, and the best method of relieving this, is by unloading the stomach freely by the emetic solutions. It generally goes off when the eruption comes out freely.

Measles are most dreaded in the colder climates, from the consequences they are apt to induce in scrofulous habits; but here these consequences do not create any alarm, and it is more the active state of the disease that proves injurious, and even fatal, than any effects on the constitution, that are to be dreaded after its termination.

Pertussis or Chincough.

Chincough is a disease which is epidemic here, among the young, and is frequently so violent in its paroxysms, as to produce apoplexy. In the commencement of this malady, no remedy I found so serviceable as the use of emetics. A weak solution of tartarised antimony, generally suspends the paroxysms, and when the disease has continued some time, by the occasional addition of opiates, it is completely removed. It is rarely protracted to such a length of time as takes place in Europe.

Lues Venerea.

The venereal disease is here very frequent; but, as in other mild climates, it is not in general so formidable in its symptoms as in Europe. Where bad cases occur, it is from neglect on the part of the patients, who are so inattentive to their cure, that with many the disease has been known to continue, without arriving to any formidable height, for the whole period of their lives. Mercury is here, as in Europe, the only remedy, and the climate is favourable to the success of its operation: it is seldom necessary to use more than an alterative course.

Diseases of Women.

The diseases peculiar to the sex are here common as elsewhere, particularly fluor albus, from the relaxing effects of the climate, and the indolent life to which females are subjected. Parturition, however, is in general here an easy operation, and not attended with those dange rous consequences which so often attend it in colder countries. The child-bed or puerperal fever, is seldom to be met with, and in general the curse denounced in Holy Writ, "in pain "shalt thou bring forth," may be said here to be partly done away; and it is so far fortunate, as the ignorance of the midwives here is extreme.

The observations I have in the preceding pages offered, respecting the Population, Produce, and Salubrity of the Island of MADEIRA, will, I trust, afford some grounds for forming a just estimate of the value of this island, in the possible contingency of its becoming an integral part of the British dominions, and what is more immediately my to purpose,

as a professional man, in publishing this work, will enable the invalid, or his professional adviser, duly to appreciate the advantages to be derived from a migration to this climate, in cases of impaired health, or existing disease.

APPENDIX,

CONTAINING

A short Account of the MINERAL WATERS *in the Portuguese Island of St. Miguel.*

THIS short account of the Mineral Waters in the Island of St. Miguel, being formerly communicated to Dr. Duncan, of Edinburgh, was inserted by him in the Medical Commentaries for the year 1791; I now republish it as an Appendix to the present work, with some alterations suggested since that time.

Nearly ten leagues north-east from Ponta Delgada, the principal town in the Island of St. Miguel, is situated a small village, called the Furnace or Carcius, in a spacious valley, which is surrounded by high mountains: towards the south-east end of this valley there is a small elevation, called the Caldieras or Boilers; this elevation, which may be nearly a quarter of a mile square, consists of a number of hillocks, around which the action of fire is every where evident; in confirmation of which, is discovered

a variety of strata, pyrites, lava, pumice, marle and clay of different colours, ochre, iron ore, and calcareous earth, mixed with alum and sulphur.

It is in this spot a number of boiling fountains are met with; many of them warm, and others cold mineral springs. The hot waters form several streams, and some of these are of considerable depth. In their course they bubble, smoke, and emit sulphureous steams, so that in a calm day the vapor is seen ascending in curling volumes to a great height.

The largest of these boiling fountains, called the Caldeira, is about from 25 to 30 feet in diameter, and, according to the prejudice of the country people, who never sounded it properly, or perhaps never at all, it is said to have no bottom.

The water is scalding hot, and in a constant state of ebullition, continually emitting a vapor highly sulphureous, and smelling much like burnt gun-powder. It deposits a clayey sediment of a light blue colour: to the taste it communicates an acescent pungency.

At a few yards distance, behind a ridge of lava, there is another boiling fountain, situated in a cavity at the bottom of a projecting rock, emphatically called the Forga or Forge; this

fountain is second in size, and its surface is seldom visible, being concealed by a very dense sulphureous vapor. It boils with great violence, and emits a loud blowing interrupted noise, throwing up, at the same time, great quantities of a fine glutinous blue clay, mixed with vapor, which is scattered to a distance, and is observed to incrust the rock and other neighbouring objects.

At a distance the noise of these boiling fountains, resembles the sound of kettle-drums. Those described are the largest two, but there are many others, and vapor issues out in many places from the crevices of the rocks and banks. In some places, where it is scarcely perceptible, the noise of boiling water, on approaching the ear to the fissure, may be distinctly heard. In other places the water is squirted out at intervals, and actually scalds those who unwarily go too near them. In many places so hot is even the ground, that it cannot be stood upon without inconvenience and pain: it is also every where covered with crude sulphur, and a piece of bright silver, on being exposed to the air, is immediately changed to a gold colour. But the temperature of these fountains, is not all of the same high degree; some of them are of a moderate heat, and others are quite cold. The

appearance of the water in several of them is limpid and transparent, while that of others is turbid, of a whitish or redish hue, and generally depositing a red or blue clay. Near the fountains chrystals of alum and sulphur, are found in vast abundance and variety; many of these productions are extremely beautiful, and at the spot where the vapor issues, and exudes from the chinks and fissures, some of the chrystals are two inches long. In some places the ground is of a soft clayey consistence, in others it is loose, dry and crumbling: on digging here there issues from the earth a strong sulphureous steam, of such heat that the hand cannot be kept in it above a minute. In a short time the hole is either filled with hot water, or else covered on the sides and bottom with a coat of sublimed sulphur or alum, resembling hoar frost. There are also some hot fountains close to the edge of a river, which runs through the valley, and even in the middle of the stream there is a perceptible ebullition: from these fountains, vapor and steams arise, as from the other fountains described. This river deposits also an ochry sediment on the stones and pebbles of its bed; in a few places this sediment is of a greenish colour, resembling martial vitriol. The plants and bushes on the banks, are en-

crusted over with sulphur, alum, and other matters. The taste of the waters varies; in some it is that of a strong impregnation of the vitriolic acid; in others of the carbonic; and in others the taste is aluminous or ferruginous: while others again are perfectly insipid.

It is common for the country people to place their culinary utensils over the hot fountains, or upon some of the steaming crevices, and thus they save the expence of fuel in preparing their victuals. Experience has even taught the cattle to approach this place, and clear themselves of vermin, by standing on the hillocks amid the sulphureous steam.

Near to the hot springs, skirting a hill of pumice stone, runs a small stream of cold water, into which several cold springs that rise on the hill immediately empty themselves; in this short course they deposit some a pale yellow ochry sediment, and others a high coloured one. Their taste is sharp and acescent, and their smell ferruginous. The pungency in some is excessively penetrating. In a glass the water sparkles like champaigne.

To the westward, at the distance of a quarter of a mile, is also a variety of hot mineral springs, not quite so large as those already mentioned, where huts have been erected with

bathing places, for the resort of persons to use the waters. About a mile further up the valley, in the same direction, are others also of the same nature.

The ground and the plants in the vicinity of these springs are covered with a yellow crust. Still farther westward, nearly a mile, runs a river, called *Ribeira* Sanguinolenta, or *Bloody River*, from its deep red colour. On the banks of this river rise a few cold mineral springs, of a strong ferruginous acescent taste and smell, which deposit a whitish ochry sediment. Beyond a range of mountains, and nearly a mile southward, on the borders of a lake, are a number of other hot springs; here the same difference and variety is observable, as among those already described; several of them boil violently, with a noise not unlike the humming of bees, and they throw up a thick glutinous blue clay, which is ejected to a considerable distance, with bubbles and vapor. On the surface of many there swims an oily bituminous scum. Here also, in the vicinity of the other fountains, there is a variety of beautiful chrystals and thick encrustations of alum and sulphur.

Among the hot springs situated here, is one that merits particular attention; it is in the form of a bason or pool, 12 feet broad and

twice as long, and boils with great force and much noise. Close adjoining to this hot pool rise several cold springs, from a bed of pumice: these, though completely cold, are in the same state of ebullition as the hot fountains. They have a very sharp acescent taste and smell, and are also highly impregnated with the ærial acid. Besides what I have mentioned, there is also a variety of mineral springs in different parts of this island.

I have to regret that I was here only a few days, and that I was not furnished with a proper apparatus for making that satisfactory analysis, which it was much my wish to have made, and which never can be properly performed except upon the spot. The extreme volatility of many of the component parts, and the almost instantaneous change in many of the appearances, must render every examination and process, entered upon at a distance, fallacious and inconclusive. However what few experiments it was in my power to make, will serve to shew the principles predominant in the composition of the different waters.

The numbers refer to those inscribed on stones lately erected near the different fountains.

I. COLD.
II. MODERATE.
III. BOILING.
IV. STEAMING.

I. COLD.

a Carbonic Acid.
b Carbonat of Iron.
c Sulphurated Hydrogen Gas.

II. MODERATE.

a Carbonic Acid.
b Carbonat of Iron.
c Carbonat of Iron and Alum.
d With Sulphur of Iron and Alum.
e Sulphurated Hydrogen Gas.

III. BOILING.

a Sulphurated Hydrogen Gas.
b Do. with Alum.
c Do. with Vitriol.
d Do. with Argil.
e Do. with Alum.
f Carbonic Acid.

IV. STEAMING.

a Sulphurated Hydrogen Gas.
b Do. with Argil.
c Do. with Alum.

EXPERIMENT I.

No. 1. Two cold springs. One transparent, having a penetrating acescent taste, and a strong ferruginous smell; deposits an ochry sediment. It is turned purple by tincture of galls; gives a muddy precipitate with lime water; sparkles when shaken, and becomes perfectly insipid.

Experiment II.

The other spring deposits a bluish sediment. In taste it possesses an acescent pungency, which on agitation dissipates to insipidity. The tincture of galls does not produce in it any sensible alteration; lime water produces a muddy precipitate.

Experiment III.

No. 2. A hot spring. The water here boils, and emits a strongly penetrating sulphureous and ferruginous smell. With tincture of galls it becomes black; with lime water it gives a cloudy precipitate which falls to the bottom; and with a small portion of infusion of rhadish it gives a bright red colour.

Experiment IV.

No. 4. Another boiling hot spring. The water here deposits a blue sediment. Its taste is slightly pungent and austere; it becomes muddy with lime water, and effervesces with nitrous acid.

Experiment V.

A cold spring. The water here deposits an ochry sediment, has an acescent ferruginous

taste and smell; is changed to a dark colour by infusion of galls, and to a sensible red by infusion of horse rhadish.

Experiment VI.

No. 16. A hot boiling spring. It deposits a blue sediment, emits a strong smell of rotten eggs. In taste is sharply acescent; but becomes insipid on agitation, and precipitates with lime water.

Experiment VII.

No. 20. A spring of moderate heat. This spring deposits an ochry sediment. Its sharp austere taste becomes dissipated on agitation; it forms a cloudy precipitate with lime water, and gives a dark purple with tincture of galls.

Experiment VIII.

No. 13. A steaming hot spring, of a milky appearance, and bordered with encrustations of a dark red and green colour. This spring deposits a white clayey sediment; emits a violent steam. In taste is sharp and austere, with a strong hepatic flavour. With infusion it assumes a light red colour.

Experiment IX.

No. 30. A cold spring, which deposits an ochry sediment, and possesses a taste and smell strongly ferruginous, accompanied with a pungent acescency. On agitation it emits bubbles, sparkles, and becomes insipid. It precipitates with lime water, and is changed to red by infusion of radish, and to purple by infusion of galls.

Experiment X.

No. 31. A cold spring, depositing a sandy sediment. In taste it is slightly acescent. It sparkles on agitation, and becomes insipid; it precipitates with lime water, and becomes red with infusion of radish.

Notwithstanding the waters have been for so many years resorted to by the inhabitants, for the cure of every species of disease, as well as for pleasure and amusement, yet the only accommodation for bathing are a few thatched huts. In these, wooden reservoirs are sunk, two or three

feet deep in the ground: they are filled by a wooden spout, and emptied through a plug-hole in the bottom. The warmth is tempered at the option of the bather, by the admission of water from the cold mineral stream. As all ranks of persons indulge in a very liberal use of these baths, and many even soak themselves in them several times a day, we might be led to conclude, *a priori*, that such frequent use of warm or tepid water, must produce relaxation. This however is not the case; on the contrary, they act as a stimulant to the whole system, exhilarating the spirits, and exciting the appetite. When the waters, and particularly those of the cold springs, are drunk, they prove both laxative and diuretic, and also promote the excretion by the surface. As the inhabitants are totally ignorant of the virtues of the cold springs, and also of the use of the vapor bath, I had an opportunity of making them acquainted with the properties of the former, and likewise of demonstrating the active power of the latter, in several cases.

CASES.

A young man, aged twenty, had been attacked with a violent rheumatism, which

brought on a contraction of the joints in his lower extremities, particularly in the flexors of his knees. This contraction was so great, as to bring his leg nearly in contact with his thigh, and his knees were actually touching each other; nor could he separate them more than a couple of inches, and that only at particular times. In this unhappy situation he had been confined to his bed for nearly five years. On applying to me, I directed him to use the vapor bath: a chair was made for the purpose; it was so constructed as to include the whole body, leaving the head free at the top, where there was an aperture, which could at pleasure be opened or closed, for the purpose of regulating the heat. This chair was placed upon the ground, whence the sulphureous exhalation issued. He remained in it seven minutes the first time, and was thrown by it into a profuse perspiration. On using it a second and third time he experienced sensible relief; he could sit out of bed, stretch his leg to an obtuse angle with the thigh, separate his knees, and even walk on crutches. He continued the use of the bath for three weeks, at the end of which time his family concerns called him home; but he went away much recovered, and was convinced of the very great efficacy of the vapor.

A person who was affected with a hemiplegia of the right side, and had lost the use of his arm, had recourse to the vapour bath. It soon enabled him to lift his hand to his head, and afforded him much relief in other respects.

Besides these instances which fell immediately within my own knowledge, I have been informed of several other well authenticated cases, which demonstrate the great efficacy of these waters, not only in rheumatic complaints, but also in the most inveterate cases of scrofula and other disorders.

A few years ago, a Portuguese gentleman, aged about fifty, from the island, C— C— a man of family, and well known to many British residents in that island, was affected with a variety of scrofulous ulcers, in different parts of his body, particularly about his neck and breast. The attention and skill of the most eminent of the faculty had been long exerted in his case in vain. The disease not only resisted, but seemed irritated by the use of medicines. He at last took the resolution of coming to St. Michael. Here he used the warm bath, in which he also washed his sores, while at the same time he drank the water. By this course, in a few months, he was perfectly recovered, and returned to Madeira, to the great surprize

of his friends, in perfect health, and without any other remains of his former complaint, than the large cicatrices of his ulcers, then completely healed.

A young gentleman of family, also from Madeira, whose name I do not mention from motives of delicacy, laboured under an inveterate cutaneous affection of the head, with running sores in several parts of the body, particularly about the back. He was, by bathing in the waters, and also using them internally, completely cured in a few weeks.

An elderly priest, of a rather full corpulent habit, had been affected with the gout in his lower extremities. He was advised to use the warm bath a few years ago. His complaint was in consequence removed, nor has it since returned.

Upon the whole I think, there is much reason to believe, that these waters, both internally and externally applied, may be found very efficacious in a variety of diseases. The vapour bath seems to be more powerful, and in general much preferable to the hot water bath. The volatile parts are more disengaged, subtle and active, when in the form of vapor, than when combined with and entangled in the water; the degree of heat is also more easily regulated in the vapour, than in the hot bath.

The cold springs contain a powerful chalybeate, with all the virtues the carbonic acid is possessed of, and when drunk, cannot fail to prove useful tonics in cases of debility. I consider the morning as the most proper time, both for bathing in these waters, and using them internally. In the latter case they ought to be drunk immediately at the source, before the virtues have evaporated. The dose at first may be about half a pint, which may be repeated in the evening, and afterwards gradually increased.

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