

Boate's Naturall History

Ireland's Naturall History : written by *Gerard Boate*

1652

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Being a true and ample Description of its Situation, Greatness, Shape, and Nature ; Of its Hills, Woods, Heaths, Bogs ; Of its Fruitfull Parts and profiable Grounds, with the severall way of Manuring and Improving the same : With its Heads or Promontories, Harbours, Roades and Bayes ; Of its Springs and Fountaines, Brookes, Rivers, Loughs ; Of its Metalls, Mineralls, Freestone, Marble, Sea-coal, Turf, and other things that are taken out of the ground. And lastly, of the Nature and temperature of its Air and Season, and what diseases it is free from, or subject unto. Conducing to the Advancement of Navigation, Husbandry, and other profitable Arts and Professions.

Written by Gerard Boate, late Doctor of Physick to the State in Ireland.

And now Published

BY

Samuell Hartlib, Esq ;

For the Common Good of *Ireland*, and more especially, for the benefit of the Adventurers and Planters therein.

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Of the Free-alone, Marble, Flints, Slate, and Sea-coales which are found in Ireland.

Sect. 1. *Of the Free-stone.*

HAVING in the precedent Chapters treated of the Metals and Minerals, which are found in Ireland, we shall now go on to speak of severall other substances, raised out of the ground there, of a less noble nature, but nevertheless profitable and serving for severall good uses.

To begin with Free-stone, there is two sorts of it, the one being gray or ash-coloured, and the other blew ; which both for the most part lying in the uppermost parts of the ground, covered over with very little earth, are raised with small labour and charge, whereas in most other countries it is as much labour to digge Free-stone as the Metalls themselves. The blew Free-stone is not very abundant, and as little in request, as unfit for great buildings ; it lying for the most part in small unshapely peeces ; and when they are bigger commonly broke in the raising and hewing, partly through the unskillfulness of the workmen there, and chiefly because they are exceeding hard, and cannot well endure the Iron. The gray Free-stone which is found very abundantly in most parts of the land is of a contrary nature ; and may easily be cut out into stones of all bigness or fashion, wherefore also this sort hath been used by the

English, to all the Churches, Castles, and Edifices, which since the Conquest have been builded by them ; for the Irish themselves, never had the skill nor industry to erect any considerable buildings of Free-stone, Brick, or other the like materials, their dwellings being very poor and contemptible cottages. True it is, that the English at their first comming found severall Maritime-townes in Ireland with stone walls and houses, the Churches also, not only in those, but in many other Townes being of the same ; but built by strangers, who being come out of the Northern-parts of Germany, and other neighbouring Countries, have settled themselves there, inhabiting severall parts of the Sea-coasts, some ages before the English Conquest ; which people called themselves Oastmans, or Easterlings ; all those Countries of the which they were come being situated to the East of Ireland.

Sect. 2. Certain evill properlies of the Irish Free-atone-

This sort of gray Free-stone in Ireland hath a bad qualitie, that it draweth the moisture of the air continually to it, and so becommeth dank and wet both in and out-side, especially in times of much rain. To mend this inconvenience the English did wainscot those walls with oak or other boards, or line them with a thin crust of brick.

Sect. 3. Of the Marble.

Besides the Free-stone, which is almost in every part of the land, there is Marble found in many places of severall sorts ; one is red, streaked with white and other colours, such as with a peculiar name is called Porphyre ; other black, very curiously streaked with white, and some all of one colour.

The first two sorts are found but in small quantity, especially the second ; but the last is very abundant in some places, but most about Kilkenny, where not only many houses are built of the same, but whole streets are paved with it.

Sect. 4. Description of the Marble-qaarrie at Kilkenny.

The quarrie out of which they have their Marble at Kilkenny, is not above a quarter of a mile distant from the Town, and belongeth to no body in particular, lying in common for all the Townsmen, who at any time may fetch as much out of it, as seemeth good unto them, without paying any thing for it : It is in fashion like unto Quarries of Free-stone, to wit, a wide open pit, whereout stones and pillars of great thickness and height may be digged. This Marble, whilst it is rude, and as it commeth out of the ground, looketh grayish, but being polished it getteth a fine blewish colour, drawing somewhat towards the bhick.

Sect. 5. Of the Flint.

Although flints are not digged from under the ground, yet shall we give them a place next to the Free-stone and Marble, because of the affinity which they have with them. They are found in every part of Ireland in great abundance near the sea-side, within the land, upon the hills and mountains, and in the rivers, many of which have not only their banks covered with them, but also the bottom of their chanel, and that for great spaces together, which as they are of all sizes and fashions, so of very different colours.

Sect. 6. *Of the Slate.*

In sundry parts of Ireland Slate is found in great abundance, and that nothing deep within the ground, just in the same manner as the Free-stone, so as it may be raised with little charge and labour ; wherefore at all times it hath been much used by the English inhabitants for the covering of their houses and other buildings. Nevertheless some years since in places near the sea, especially at Dublin, that kind of Holland Tiles, which by them are called *Pannen* begun to be used generally, the Merchants causing them to be brought in from thence in great abundance, because in Ireland they had nether convenient stuff to make them of, nor workmen skilfull in that business : although the common tiles usual in many parts of England and other Countries, were made and used in several places within the land.

Besides these there was another kind of covering in use, both for Churches and Houses, to wit, a certain sort of wooden tiles, vulgarly called Shingles ; the which are thight enough at the first, but do not many yeares continue so, it being necessary to change them often : which thing properly not appertaining to this chapter, we nevertheless for affinities sake have thought not amiss here to mention.

Some yeares ago another kind of Slate hath been discovered in Ireland, which for the colours-sake is called Black-slate, being of a blackish colour, which is come into great esteem, not so much for the ordinary use of covering houses, for which they are no better than common Slate, but because it hath been found by experience, very good and medicinall against severall diseases, especially to stay all kind of bleeding, and to hinder that after falls and bruises the blood do not congeal within the body.

Sect. 7. *Of the Sea-coal.*

The Trees and Woods having been so much destroyed in Ireland, as heretofore we have shewed, and consequently wood for firing being very dear in great part of the land, the inhabitants are necessitated to make use of other fuel, *viz.* of Turf, and of Sea-coales. Of the Turf we shall speak in the next Chapter. As for Sea-coales, they are the ordinary firing in Dublin, and in other places lying near the sea, where the same in time of peace are brought in out of England, Wales, and Scotland, in great abundance, and therefore reasonable cheap : which is the reason, that the less care hath been taken to find out Coal-mines in Ireland it self, whereas otherwise it is the opinion of persons knowing in these matters, that if diligent search were made for them, in sundry parts of the land good Coal-mines would be discovered. This opinion is the more probable, because that already one Coal-mine hath bin found out in Ireland, a few yeares since, by meer hazard, and without having been sought for. The Mine is in the Province of Leinster, in the County of Carlo, seven miles from Idof, in the same hill where the Iron-mine was of Mr. *Christopher Wandsworth*, of whom hath been spoken above. In that Iron-mine, after that for a great while they had drawn Iron-oar out of it, and that by degrees they were gone deeper, at last in lieu of Oar they met with Sea-coal, so as ever since all the people dwelling in those parts have used it for their firing, finding it very cheap ; for the load of an Irish-car, drawn by one garron, did stand them, besides the charges of bringing it, in nine pence only, three pence to the digger, and six pence to the owner.

There be coales enough in this Mine for to furnish a whole country ; nevertheless there is ao use made of them further than among the neighbouring inhabitants ; because the Mine being situated far from Rivers, the transportation is too chargeable by land.

These Coals are very heavy, and burn with little flame, but lye like Char-coal, and continue so the space of seven or eight houres, casting a very great and violent heat.

In the place where this Mine standeth, do lie little Smith-coals above the ground, dispersed every where in great quantity, from whence the Smiths dwelling in the parts round about did use to come and fetch them even before the mine was discovered.

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Of the Turf, Lime, and Brick, and the Manner of making those things in Ireland ; item, Of the Glass made in Ireland.

Sect. 1. *Of the two sorts of Irish-turf.*

TURF being very much used throughout all the land (as we have said before) is of two sorts, according to the difference of the Bogs out of the which it is taken. That which is taken out of the Dry-bogs, or Red-bogs, is light, spongy, of a reddish colour, kindleth easily, and bumeth very clear, but doth not last.

The other to the contrary, which is raised out of the green or wet Bogs, is heavy, firm, black, doth not burn so soon, nor with so great a flame, but lasteth a great while, and maketh a very hot fire, and leaveth foul yellowish ashes.

It is the observation of women, that the linen which is dried by a fire made of this last sort of Turf getteth a foul colour, be it never so white washed and bleached, and groweth yellowish in that manner as that it can hardly be got out again.

Sect. 2. *The manner of making the Turf.*

The first sort of turf costeth but little paines in the making ; for being digged, and having lyen some dayea a drying (first spread out thin and single upon the ground, and afterwards piled up in little heaps) it is brought into the barn.

But black Turf cannot be made without more trouble. First they mark out convenient places ; for onely those are fit for it to which some paths do lead, and which in themselves are not too mirie, and too deep, but have a firm and sandy ground underneath, within the space of four or five feet, or thereabouts. Having found out such a place, if it be too watery, they make some trenches, into which the water descending out of that part of the Bog wherein they intend to work, may by them be carried to some place fit to receive it ; to the end that the Bog being thereby grown somewhat dryer and firmer, may the better bear the labourers without sinking too deep into it. Then they fall to the business, dividing it so among the labourers, that one part of them do dig out the earth, or rather the mud (for all the earth whereof this Turf is made, is thin and muddy) and by spades-full cast it on a heap, either by the side of the pit, or somewhere within the same, where others stand, who very well work it, turning it to and fro, and then with their shovels fill it into certain wooden trayes, amongst the English in Ireland peculiarly called Lossels ; the which being full, another part of the labourers draw the same, with great cords fastened to them, to some dry place within the bog, or by the side thereof, where having poured out the mud, they go back to fetch more, and so go to and fro all day long. On that dry place where the mud is poured forth, sit certain women upon their knees, who mold the mud, using nothing else to it but their hands ; between the which taking

a part of it, they press them together in that manner, that their hands meeting above, the Turf is fashioned flat and broad beneath, growing narrower towards the top ; which being done, the Turf is let lye upon the ground the space of a week or more, according as the weather is, and being reasonably well dried, it is piled up in little heaps, leaving every where empty spaces between, that the air and the wind passing through them, they may dry the sooner.

Sect 3. *The charges of making Turf.*

Ireland is so full of Bogs, that every man almost hath Bog enough upon his own land to make Turf for his family and for all his Tenants ; so that the Turf doth cost most men no more than the hire of the Labourers who are employed about it. Those that begun early in the year, whilst the Labourers had but little employment, gave ordinarily, besides meat and drink, three pence sterling a day to every man, and two pence to every woman ; four pence a day being the ordinary price, and when it was at the dearest, five pence. Twenty men made in two or three dayes as much Turf as was sufficient for the whole years firing of a great family ; of which number five men did dig and cast up the mud, five wrought it and filled it into the trays, and ten were busied in drawing the trays to the place where the Turf was moulded by the women ; who went so nimbly to work with it, that onely two of them were sufficient to keep twenty men at work.

Sect. 4. *Of the Lime, and the manner of making it of Lime-stone.*

All the lime in Ireland is made not of the shells of all sorts of shell-fish, as in Holland, and some other countries, but onely of stone ; and the gray free-stone, whereof we have spoken in the precedent Chapter, is very fit for it, especially when it is not newly come out of the quarrie, but taken off old buildings. But a peculiar sort of stone properly called lime-stone, is best for it. This stone is of a gray colour, tending to a dark blew, which being broke, a white dust out of it doth fly abroad ; and it is very common throughout all Ireland, but especially in the Provinces of Munster and Connaught, lying not deep within the ground, but very near to the surface of it, and in many places above ground.

The manner of burning it into Lime, usual over all Ireland, is this ; In the side of some little height they make a great pit, round or square according as conveniencie is offered ; of that bignes as may hold forty or fifty barrells, and of that fashion that being many feet wide at the top, it doth by degrees degrees grow narrower towards the bottom, in the same manner as the Furnaces of the Ironworks. The inside of this pit they line round about with a wall built of Lime and Stone, at whose outside near the bottom a hole or door is left, by which to take out the ashes ; and above that an iron-grate is laid, which commeth close to the wall round about : upon this they lay a lay of Lime-stone (being first knockt asunder with a great Iron hammer, and broke into peeces of the bignes of a fist, or thereabouts) and upon that a lay of wood or turf, or a certain sort of sea-coal, the which being wonderfull small, and peculiarly called comb, is hardly used for any other purpose. Upon that they lay another of Lime-stone, and so by turns, until the whole Kiln be filled, ever observing that the outmost lay be of wood, turf, or comb, and not of Lime-stone ; which being done, the kiln is set afire until all be burnt.

Sect. 5. *Another manner of burning Lime used in Ireland.*

There is another manner of burning Lime used in Ireland, in Kilns built altogether above ground, and incomparably bigger than the others, insomuch as to the quantity of three hundred Barrells of Lime at once is made in them. In these Kilns they burn whole stones

without breaking them into peeces as the others, and that only with wood (turf or comb not being fit for it) whereof they consume a huge deal, it being necessary from time to time to put new wood into them, to which end three or four men day and night do stand by the Kiln to keep the fire from decaying or slackning.

These (called French-kilns, because the use of them was first received from thence) have ever their walls made of Lime-stone, the which in the same manner are turned into Lime, so as there remaineth nothing standing of these Kilns after that the work is accomplished, and the Lime taken away.

Now albeit that in these Kilns a very great quantity of Lime is made at a time, nevertheless it hath been found by experience, that they are much more unprofitable than the others, because they consume much more firing in proportion, through the continuall renewing of the fire, and require the constant labour of severall men all the while they are burning, which commonly is the space of three dayes and nights. For these reasons was the use of these Kilns, which never had been very generall in Ireland, more and more left off in these last yeares, and the others almost only made use of ; in the which the lime came to stand them, who burnt it, in no more than four pence the barrell at the most, all manner of expencea being reckoned ; and but three to them who had the best conveniences.

Sect. 6. *Of the Brick.*

In every part of Ireland there is found a kind of clay very fit for to make bricks, and all sorte of Potters-ware, although the Irish never had the wit or Industrie to make use of it for either of these two ends ; yea they have ever been so ferre from making any earthen vessels, that even the use thereof hath been very rare amongst them, and to the most part unknown, not only before the comming in of the English, but also since, yea even untill these very last times ; although a great number of English Potters in severall parts of the land had set up their trade, so as all kind of earthen ware was very common, and to be had at very easy rates.

And as for the brick, they have been little used in Ireland even among the English themselves for a great while ; but of late years they begun to be very common, as well in the countrie, as in the cities, especially Dublin, where all the new buildings (the which not only in handsomeness, but also in number, do surpass the old) are all made of brick. But that which is made in Ireland, for the most part is not so good, as that of other Countries, not so much for any unfitness in the clay it self, as for want of handling and preparing it aright ; as may easily be conceived by the following description of the manner they use to make it.

Sect. 7. *The manner how they make their Brick in Ireland.*

They dig a great square pit, taking away all the uppermost earth, untill they come to a good clay (which commonly lyetb one or two spits deep) this they dig up throughout the whole pit, and having broke it very small with the spade, they do by degrees poure a great deal of water amongst it, working and labouring it together with the spade and their feet, till the whole mass become uniform, firm and tough like stiff dough ; the which then in wheelbarrowes is carried out of the pit to a place where certain long tables are set up, to each of which tables is allotted one man, one woman, and one boy. The woman taketh up the clay by handfulls, from the heap lying upon the ground, and reacheth it unto the man, who thiusteth it into a little wodden form without bottom, strawing now and then some sand upon the table,

that the clay may not stick to it : and so having given them their due fashion, the boy doth carry them from thence to a place, where he layeth them all upon the ground, not under any covert, but in the open air. After they have lyen some dayes, and are somewhat dryed, they are piled up in small heaps, twenty or thirty in a heap, making the heapes transparent in the same manner, as we have shewed above of the Turf, some dayes after those little piles are made into greater, which are many feet long, and five or six feet high, but not above two feet, or two and a half broad (making the layes transparent, with some empty apace between brick and brick, even so as in the small piles) the which at the top are covered over with straw, laying upon the straw broad green sods, to keep off the rain. Having lyen so untill they be quite dry, they make great ovens or Kilns of them, filling them within with the same, strawing betwixt them of that small sort of Sea-coal, whereof we have spoke heretofore, called Comb or Coome, and having covered over the Kiln with the same clay, whereof the bricks are made, the thickness of two hand-broads or thereabouts, they set it afire with wood underneath, and continue the fire untill not only all the bricks piled within the Kiln, but all the walls quite through, and at the out-side as well as at the in-side, be perfectly burnt, and turned into good brick : wherein oftentimes, through the unskilfulness or neglect of those who make and fill these Kilns, and of those that govern the fire, there is great loss, and that two manner of ways. For sometimes great pert of the Bricks is found not to be sufficiently nor uniformly burnt ; and on the other side it falleth out oftentimes, that great quantities are reduced into one, being burnt, or half-burnt into great unshapely masses or lumps, which are good for nothing.

They do commonly bum in those Kilns two or three hundred thousand bricks at a time ; the which for the most part, all charges being reckoned, come to stand betwixt six and eight shillings sterling the thousand.

Sect. 8. Of the Glass made in Ireland.

We shall conclude this chapter with the Glass, there having been severall Glass-houses set up by the English in Ireland, none in Dublin or other cities, but all of them in the countrie ; amongst which the principall was that of Birre, a Market town, otherwise called Parsons-town, after one Sir *Laurence Parsons*, who having purchased that Lordship, built a goodly house upon it ; his son *William Parsons* having succeeded him in the possession of it : which Town is situate in Queens-county, about fifty miles to the South-west of Dublin, upon the borders of the two Provinces of Leinster and Munster ; from this place Dublin was furnished with all sorts of window and drinking glasses, and such other as commonly are in use. One part of the materials, viz. the sand, they had out of England ; the other, to wit the ashes, they made in the place of Ash-tree, and used no other. The chieftest difficulty was, to get the clay for the pots to melt the materials in ; this they had out of the North.

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Of the Temperature and Qualities of the Air, and Seasons in Ireland, as for Heat, Cold, and Moisture.

Sect. 1. Of the Cold weather, and the Frosts.

ALTHOUGH the climate of Ireland is somewhat Northerly, the Land extending it self from the beginning of the one and fiftieth degree of latitude, until the end of the five and fiftieth, nevertheless is the Air there very temperate, and nothing subject to violent Colds (not only in

Munster, Leinster, and Connanght, but even in the most Northern-part, to wit the Province of Ulster) much less than any other Land lying in the same height or latitude, yea than many countries of a much more Southerly-climate.

True it is, that the Cold-weather doth commonly begin here somewhat soon, namely in the beginning of October, and sometimes in the middle or latter end of September, continuing ordinarily the space of five or six moneths, until the midst or latter end of March, and sometimes also good part of April ; during which whole space of time all such persons as are chilly and cold of nature, and do sit still much, can hardly be any long while without a fire.

But again on the other side, it is very seldom violently cold there, and freezeth but little : there are commonly three or four Frosts in one Winter ; but they are very short, seldom lasting longer than three or four days together, and withall at their very worst nothing near so violent as in most other Countries ; so that some all Winter long hardly come near a fire once in a day ; and that not only in the ordinary cold weather, but even whilst it is a freezing.

Yea many times the cold is so slack even in the midst of the Winter-moneths, that by walking only, or doing some other moderate exercise, you shall find your self as warm, and the Air as sweet and pleasant, as if it were in the moneth of May.

There hath been some Winters, wherein it hath frozen ten or twelve dayes together, so as the Liffie, and other the like Rivers were quite frozen, and might be gone upon by men and beasts : But those are altogether extraordinary, and do come very seldom, hardly once in the space of ten or twelve yeares.

But how mild they ordinarily be, and how little subject to excessive cold, may appear hereby, that all kind of beasts and cattle, as cows, horses, and sheep, do there all Winter long remain abroad, and do feed in the fields, where they are left in the night-time as well as in the day, and that many herbs, which in England and Netherland do dye every winter, here continue all the year long.

Sect. 2. Of the warm Weather.

And as the cold in Winter is very moderate and tolerable, so is also the heat in summer ; the which is seldom so great, even in the hottest times of the year, as to be greatly troublesome. And it falleth out oft enough in the very summer-moneths, that the weather is more inclinable to cold than to heat, so as one may very well endure to come near a good fire. And this commeth to pass only during the Wet-weather, for else, and whilst it is fair, it is very warm all summer long, albeit seldom over hot : and so it is many times also even on the rainie dayes, whereas for the most part it is very cool in them, and the heat much less than the season doth require.

Sect 3. Of the Rain and wet Weather.

The Rain is very ordinary in Ireland, and it raineth there very much all the year long, in the Summer as well as in the Winter. Commonly in the Spring of the year it is very fair weather, with clear sun-shine from morning till night, for the space of five or six weeks together, with very little or no interruption ; which fair weather beginneth commonly in the moneth of March, some yeares in the beginning, other yeares in the midst, and sometimes in the latter end of it. But the same being once past, it raineth afterwards very much all the

Summer long, so as it is a rare thing to see a whole week pass without it ; and many Summers it is never dry weather two or three dayes together. Which inconstancy and wetness of the weather is not only troublesome to men, but also hurtfull to all things growing out of the ground for mans behoof. For the heat never being very great, and there besides often interrupted by the intervention of the foul weather, hath neither time nor strength enough to ripen them so well and so soon, as otherwise it would ; whereby it commeth to pass, that as well the fruits of trees, as the corn and grass, here commonly much later do come to perfection, than in the most part of other neighbouring countries. And as the ripeness of the fruits and other increase of the earth is greatly retarded by the abundance of unseasonable rain ; so it doth also fall out oftentimes, that the same being come to ripeness, it is difficult to get them in, by reason of the exceeding store of rain which doth come down during the hay-time and the harvest. Wherefore it behoveth one here to be wonderfull diligent, and not to lose any part of the fair weather : For else one would run great hazard to sustain great losses, and to have all spoyled. But those that are vigilant and carefull, and that lose no occasion at all, do commonly in the end get in their increase well enough, notwithstanding all those great hindrances ; so that there be as few yeares of dearth in Ireland, as in any other Country in Christendom ; and most yeares there is not only Corn enough got for the sustenance of the inhabitants, but a great deal over and above, for the sending out of great quantities of Grain into other countries.

Sect. 4. Of the fair weather in the latter end of Autumn. In the foul weather the nights are often fair.

In the latter end of Autumn weather is commonly fair again for some weekes together, in the same manner as in the Spring, but not so long ; which as it doth serve for to dry up, and to get in the Corn and Hay, which till then hath remained in the fields, the too much wet having hindered it from being brought away sooner ; so it giveth the opportunity of plowing the ground, and sowing the Winter-corn ; the which otherwise would very hardly be done.

For that season being once past, you have very little dry weather the rest of the autumn, and during all winter. And although it doth seldom rain continually for many dayes together, yet is the wetness very great, and few weekes do pass, wherein are not two or three rainy dayes. And it is to be observed, that ordinarily it raineth in Ireland much more by day than by night ; and that many times when it doth run two or three dayes together, the nights between are very clear and fair ; the which also many times falleth out in other foul weather, and when all day long the Skie is overcast with clouds and mists.

Sect. 5. Some dry Summers in Ireland, but hardly ever any too dry.

But although it is ordinarily thus in Ireland ; yet the same inconstancy and variableness of yeares and seasons, which is observed in most other Countries, doth also here occur, and that more in regard of the Summers and dry weather, than of the Winters and cold. For it is marvellous seldom to have there a hard winter and long frost ; but Summers have been which were full of very dry, and fair, and pleasant weather. But as Winters cruelly cold, so likewise over-dry summers do in this Iland hardly come once in an age ; And it is a common saying in Ireland, that the very driest Summers there never hurt the land : For although the corn and grass upon the high and dry grounds may get harm, nevertheless the country in generall gets more good than hurt by it : and when any dearths fall out to be in Ireland, they are not caused through immoderate heat and drought, as in most other countries, but through too much wet, and excessive rain.

Sect 6. *Amendment of the wet Air in Ireland how to be expected.*

So that the Irish-air is greatly defectuous in this part, and too much subject to wet and rainy weather ; wherein if it were of somewhat a better temperature, and as free from too much wet, as it is from excessive cold, it would be one of the sweetest and pleasantest in the whole world, and very few countries could be named, that might be compared with Ireland for agreeable temperateness. And although it is unlikely, that any revolution of times will produce any considerable alteration in this (the which indeed in some other countries hath caused wonderfull changes) because that those who many Ages ago have written of this Iland, do witness the self same things of it in this particular, as we do find in our time : There is nevertheless great probability that this defect may in part be amended by the industry of men, if the country being once inhabited throughout by a civill Nation, care were taken every where to diminish and take away the superfluous and excessive wetness of the ground, in all the watery and boggy places, whereby this too great moystness of the Air is greatly increased, and partly also occasioned.

This opinion is not grounded upon some uncertain speculation, but upon assured experience ; for severall knowing and credible persons have affirmed to me, that already some yeares since good beginnings have been seen of it ; and that in some parts of the land well inhabited with English, and where great extents of Bogs have been drained and reduced to dry land, it hath been found by the observation of some yeares one after another, that they have had a dryer air, and much less troubled with rain than in former times.

Herewith agreeth that we read in that famous Writer *Pliny*, in the fourth Chapter of the seventeenth Book of his *Naturall History*, concerning that part of Macedonia, wherein the city *Philippi* was seated ; where the Air formerly having been very rainie, was greatly amended by the altering the wetness of the ground : His words are these. *Circa Philippo cultura siccata regio, mutavit caeli habitum* : that is, word for word, *The Country about Philippi being dryed up through tillage, hath altered the quality of the Air.*

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Of the Dew, Mist, Snow, Hail, Hoar-frost, Thunder and Lightning, Earthquake and Winds.

Sect. 1. *Of the Dew.*

THE Naturalists and Geographers do assure us, that it deweth exceedingly in the hot and dry countries, and that the less it useth to rain in a country, the dew doth fall there the more abundantly ; whereby it should seem to follow, that in the wet climate it deweth very little, and consequently that in Ireland, where it raineth so very much, the Dew must be very scanty. But there is as much Dew there, as in other Countries that are a great deal hotter and dryer. Only thus much experience doth shew in Ireland (and it may be as well in other Countries, whereof I have not yet informed my self) that when it is towards any great rain, little or no Dew doth fall ; so as in those times going forth early in the morning into the green fields, you will find them altogether dry, and that even in that season, wherein the Dew in Ireland, as in other neighbouring Countries, useth to fall more abundantly, than in any other time of the year, to wit in the moneths of May and June : this is a certain sign to the inhabitants, that great rain is to fall suddenly ; and commonly after such a dry and dewless night it useth to rain two or three days together. But the preceding rain doth not hinder the Dew in that

manner, as that which is imminent ; and it is found ordinarily, that in a clear night following a rainy day (the which is very ordinary, as we have sayd in the preceding Chapter) the Dew commeth down as liberally as if it had not rained the day before.

Sect. 2. Of May-dew, and the manner of gathering, and preserving it.

The English women, and Gentlewomen in Ireland, as in England, did use in the beginning of the Summer to gather good store of Dew, to keep it by them all the year after for severall good uses both of physick and otherwise, wherein by experience they have learnt it to be very available. Their manner of collecting and keeping it was this. In the moneth of May especially, and also in part of the moneth of June, they would go forth betimes in the morning, and before Sun-rising, into a green field, and there either with their hands strike off the Dew from the tops of the herbs into a dish, or else throwing clean linnen clothes upon the ground, take off the Dew from the herbs into them, and afterwards wring it out into dishes ; and thus they continue their work untill they have got a sufficient quantity of Dew according to their intentions. That which is gotten from the grass will serve, but they chuse rather to have it from the green corn, especially wheat, if they can have the conveniency to do so, as being perswaded that this Dew hath more vertues, and is better for all purposes, than that which hath been collected from the grass or other herbs. The Dew thus gathered they put into a glass bottle, and so set it in a place where it may have the warm Sun-shine all day long, keeping it there all the summer ; after some dayes rest some dregs and dirt will settle to the bottom ; the which when they perceive, they pour off all the clear Dew into another vessel, and fling away those settlings. This they do often, because the Dew doth not purge it self perfectly in a few dayes, but by degrees, so as new dregs (severed from the purer parts by the working of the Dew, helped on by the Sunbeams) do settle again ; of the which as often as those good women see any notable quantity, they still powre off the clear Dew from them : doing this all summer long, untill it be clear to the bottom.

The Dew thus thoroughly purified looketh whitish, and keepeth good for a year or two after.

Sect. 3. Of the Mists and Fogs.

We have shewed how much Ireland is subject to rain, and so it is likewise to dark weather, and overcasting of the air even when it raineth not, which continueth sometimes many dayes together, especially in Winter-time.

But as for the Fogs and Mists, Ireland is no more troubled with them than other regions, especially in the plain countrie, for in the mountains they are much more frequent, so that oftentimes they are covered with them for a great way, the space of some houres together, when at the same time there is none in the neighbouring plain countrie ; and in the high mountains it commeth many times to pass that in a fair day the top thereof for a long time together is covered over with a thick Mist, when not only the adjacent countrie, but even the lower part of those mountains do enjoy a clear Sun-shine. And sometimes it befalleth the tops as well as the lower parts being free from them, the middle parts are quite covered therewith : as my brother in his travels hath many times observed in severall parts, especially upon those high mountains between Dundalke and Carlingford, as well in the midst of the Summer, as at other times of the year.

And in many places it is found by experience, that the like Fogs upon the tops of the mountains is a fore-runner of rain in the next country : whereof all those who have lived any time at Dublin, may have good knowledge. For seldom a mist appeareth upon the top of the Wickloe mountains, situated some five or six miles to the South of Dublin, or of the Head of Houth, without being followed with rain at Dublin and the adjacent parts within 24 houres : wherein is observable, that a Fog quite covering those mountains all over is not so sure a signe of Rain, as when it is only upon the top : and that those generall Mists upon the mountains are often seen without any following Rain, the which very seldom or never happeneth in the others.

There be two sorts of Mists or Fogs in Ireland : the one is uniform and constant, quite filling the air of all sides, whereby all manner of prospect is taken away, and continuing after the same fashion, untill it vanish by degrees, either ascending up into the Air, or falling to the ground ; whereof here, as in other countries, the first is commonly followed with rain, and the second with fair weather.

In the other sort are great parcells or flakes of foggie vapours scattered up and down the Air, with clear spaces betwixt : the which flakes do not keep one place, but fly to and fro, according as they are driven by the wind, and that sometimes very swiftly ; this kind of Fog doth arise not only upon the seaside, but also within the land, and upon the mountains : oftentimes turning into a generall mist.

Sect 4. Of the Snow, Hail, and Hoar-frost.

For the most part there falleth no great store of Snow in Ireland, and some yeares none at all, especially in the plain countries. In the mountains there is commonly greater plenty of snow, than in other parts, so that all kinds of cattle, do all winter long remain there abroad, being seldom troubled with very great frost or snow, and do feed in the fields night and day, as we have related more amply above ; yet it hath happened that in a winter, one of many, abundance of Snow hath fallen, instance that of the year 1635, where about the latter end of January and the beginning of February great store of snow did fall to the great damage of the cattle, chiefly in the Northern parts (where it did snow most exceedingly) so as the People were put to hard shifts to bring their cattle in safety to their folds and other covered places. One history among the rest by reason of the strangeness of it, I thinke will not be improper to relate as it hath been asserted to me by very credible persons. A Gentleman living about Ballaneah in the county of Cavan, took great pains to save his sheep, yet missed eleven of them ; some dayes after being come forth to course, his man saw from afarre off upon a hill, in a hollow place of a rock, part of it being covered with the top hanging over it, something alive and stirring, they thought it had been a Hare or a Fox, but comming neer they found it was the lost sheep, the which had sheer eaten away all the wool from one anothers back (being destitute of all other food, all round about being covered with deep snow) and which is more wonderfull one of them being dead, the rest did eat her flesh, leaving nothing but the bar bones.

It doth also longer continue there : so as it is an ordinary thing in those by Dublin, and all other high mountains throughout the Land, to see the Snow lying upon the tops of them many dayes, yea weekes, as beax that in the nether parts and plain countrie, it is thawed and quite vanished.

It Haileth there but seldom, and in thinne short shoures, the hail-stones also being very little.

As for the Hoar-frost, that is as common here, as in other countries, and that not only in the coldest moneths, and during the frost, but even in the Spring : so as commonly during all the fair weather of that season, of some weekes together, whereof we have spoke heretofore, every morning all the green herbs of the gardens and fields are quite covered over with it.

Sect 5. Of the Thunder, Lightning, and Earthquakes.

Ireland is as little subject to Thunder and Lightning, as any other countrie in the world, for it is a common thing, to see whole yeares pass without them, and in those yeares, where-in any are, one shall seldom have them above once or twice in Summer, and that with so weak noise of the Thunder, and so feeble a shining of the Lightning, that even the most fearfull persons are hardly frightned at all there-by, much less any harm done to men or beasts.

From Earthquakes this Iland is not altogether exempt ; but withall they are so seldom, that they hardly come once in an age : and it is so long agoe since the last of all was, that it is as much as the most aged persons no alive can even remember.

Sect. 6. Of the Winds.

With Winds it is in this countrie almost as with Rain, Ireland not only having its share in them, as other countries, but being very much subject to them, more than most other parts of the world. For the Winds blow very much at all times of the year, especially in the Winter moneths, when also there are many stormes, which sometimes do continue severall dayes together.

And it is worth the observation, that not only storm-winds, but others also, do in Ireland much seldomer blow out of the East, than out of the West, especially in the Winter ; so that commonly there is no need of a Wind to be waited over into England ; where to the contrary, those, who out of England will come over into Ireland, very ordinarily are constrained to wait two or three weekes, and sometimes five or six weekes, yea it hath faln out so more than once, that in two whole moneths, and longer, there hath not been so much East-wind, as to carry ships out of England into Ireland : notable instances whereof the history of the first conquest of Ireland, and that of the Lord Mountjoy, subduer of Tirone's rebellion, doth afford.

But in the Summer-time, and chiefly in the Spring, and in the moneths of March, Aprill, and May, one is not so much subject to that incommodity, as in the other times of the year.

And as the West-winds are much more common in Ireland, especially upon this coast lying over against Great-Britain, than the East ; so likewise the South winds are much more ordinary there, than the North : which two winds there do seldom blow alone, but for the most part do accompany one of the two other, especially the North-wind, the which also doth oftner join it self with the East than with the West-wind.

A collection of tracts and treatises illustrative of the natural history, antiquities, and the political and social state of Ireland, at various periods prior to the present century .. (1860)

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