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# JOHN WESLEY, TRAVELLING WEATHER OBSERVER

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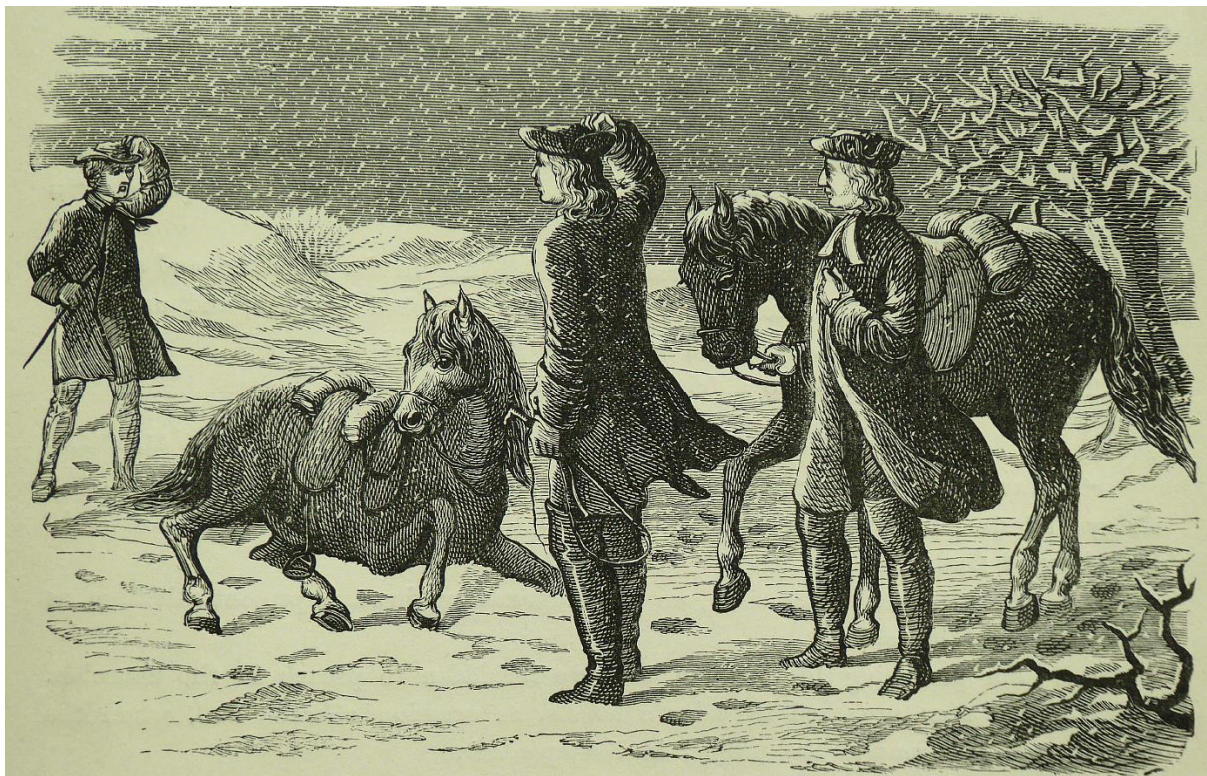
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*Wesley in the snow*

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# INTRODUCTION

## JOHN WESLEY'S LIFE, WRITINGS AND JOURNEYS

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John Wesley had a brilliant mind and was a meticulous observer of all aspects of the world he encountered which he later reported in detail in his published journals. His writings provide us with a unique snapshot of life and environments which are a source of interest, even for those who are not concerned with his religious beliefs.

Born in Epworth in Lincolnshire in 1703 and educated at Charterhouse and Oxford University, he was ordained in 1725 and elected to a fellowship at Lincoln College. In 1735 he travelled to Georgia in America, along with his brother Charles, to become a missionary. However, his fine aims were not realised and he returned to Britain older and wiser. After his dramatic conversion experience in 1738 which brought Christianity into a clearer focus for him he soon embarked on the rest of his life as a travelling preacher, building up fledgling religious societies following his ideas. He included extensive preaching expeditions in his hectic annual work schedule, travelling over 250,000 miles in his lifetime. Active to the end, he died in 1791.

Wesley was a prolific writer throughout his life and became a major publisher. In addition to his journals and enormous number of letters, he wrote extensively on both religious and non-religious subjects. He produced many books which were effectively distillations of other publications though all the sources used were not always explicitly acknowledged. With the great expense of most books at the time, his aim was to produce affordable publications in the form of books, tracts and pamphlets which could be used by his congregation members to improve their education. His interests, studies and writings included many areas of science and he published books on medicine, electricity and natural history.

This Royal Meteorological Society History Group Occasional Paper is extracted from the book *John Wesley – Travelling Geographer* by Howard Oliver published by Harris Manchester College, Oxford. The paper presents his writings within the scientific and environmental area of physical geography with the main emphasis on weather-related topics. It is set out as a series of quotations comments in separate sections for each weather type. It is hoped that as the comments often include precisely dated details of extreme weather events they will be of interest to those analysing historical meteorological information.

As there are within his writings descriptions of other areas of physical geography and environmental topics, these are also included as an appendix to the main paper.

All quotations are extracted from his published journal and letters and include whenever possible the exact dates they were written or refer to.

For most of his career, land journeys were made on horseback, with Wesley often avidly reading at the same time as riding. He frequently got soaked and frozen, but, as will be seen later, it was hot weather that often seemed to cause him most distress. Not being sympathetic to modern clothing he generally stuck to standard wear of the time which quickly became sodden in wet weather. He does, however, mention on one occasion of grudgingly agreeing to use the protection a modern 'souwester' with obvious success:

**Journal, 16 Jan 1764:** I rode to High-Wycombe, and preached to a more numerous and serious congregation than I ever saw there before ... A large number was present at five in the morning: But my face and gums were so swelled I could hardly speak. After I took horse, they grew worse and worse, till it began to rain. I was then persuaded to put on an oil-case hood, which (the wind being very high) kept rubbing continually on my cheek, till both the pain and the swelling were gone.

As with comments about adverse weather, he became more aware about bad roads as he grew older and, despite resorting ever more frequently to wheeled transport, travel inevitably became more of a strain. A few examples from his Journal will give a feel for the types of journeys he had to contend with:

**Journal, 31 Jul, 1764:** We set out for Glamorganshire, and rode up and down steep stony mountains for about five hours, to Larn. Having procured a pretty ready passage there, we went on to Lansteffan-Ferry, where we were in some danger of being swallowed up in the mud before we could reach the water. Between one and two we reached Kidwelly, having been more than seven hours of horseback, by which time we could have rode to Carmarthen with more ease to both man and beast. I have, therefore, taken my leave of these ferries; considering we save no time by crossing them, (not even when we have a ready passage,) and so have all the trouble, danger, and expense, clear gains. I wonder that any man of common sense, who has once made the experiment, should ever ride from Pembroke to Swansea any other way than by Carmarthen. An honest man at Kidwelly told us there was no difficulty in riding the sands, so we rode on. In ten minutes one overtook us who used to guide persons over them; and it was well he did, or in all probability we had been swallowed up. The whole sands are at least ten miles over, with many streams of quicksands intermixed. But our guide was thoroughly acquainted with them, and with the road on the other side. By his help, between five and six, we came well tired to Oxwych in Gower.

**Journal, 19 Jun, 1787:** We went on through horrible roads to Newry. I wonder any should be so stupid as to prefer the Irish roads to the English. The huge unbroken stones, of which they are generally made, are enough to break any carriage in pieces. No, there is nothing equal to good English gravel, both for horses, carriages and travellers.

**Journal, 21-23 Apr, 1788:** [an example of Wesley's use of the ironic opposite] I went on, through miserable roads, to Blackburn ... Through equally good roads we

got on to Padiham ... from hence we went, through still more wonderful roads, to Haslingden. They were sufficient to lame any horses, and shake any carriage to pieces. – N.B. I will never attempt to travel these roads again, till they are effectually mended!

On a more positive note:

**Journal, 15 Jun, 1770:** I was agreeably surprised to find the whole road from Thirsk to Stokesley, which used to be extremely bad, better than most turnpikes. The gentlemen had exerted themselves, and raised money enough to mend it effectually. So they have done for several hundred miles in Scotland, and throughout all Connaught in Ireland; and so they undoubtedly might throughout all England, without saddling the poor people with the vile imposition of turnpikes for ever.

**Journal, 13 May, 1788:** To-day we went on through lovely roads to Dumfries. Indeed all the roads are wonderfully mended since I last travelled this way. Dumfries is beautifully situated; but as to wood and water, and gently rising hills etc, is, I think, the neatest as well as most civilized town that I have seen in the kingdom.

His writings contain many examples of travel by water, both sea crossings and coastal journeys, but despite the obvious dangers, Wesley's attitude was still scathing of the reluctance of captains to take risks:

**Journal, 28 Feb, 1748:** I never knew men make such poor, lame excuses, as these Captains did for not sailing. It put me in mind of the epigram

*There are, if rightly I methink  
Five causes why a man should drink;*

which, with a little alteration, would just suit them:-

*There are, unless my memory fail,  
Five causes why we should not sail:  
The fog is thick; the wind is high;  
It rains; or may do by-and by;  
Or – any other reason why.*

# JOHN WESLEY, WEATHER OBSERVER

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As John Wesley was on the move a great deal of the time, it is not surprising that his journal and letters often include comments about the weather conditions he encountered. Covering such an extensive area, these reports are treated separately from other topics in physical geography he wrote about.

His first written comments are as early as 1724 in a letter to his mother from Oxford and already show his interest both in meteorology and in the natural environment which continued throughout his life:

**Letter, 18 Dec 1724:** “We still have very warm weather at Oxford; and a gentleman, now in the room with me, says that several of the flowers in his father’s garden, who lives in town, are blown as if it were Spring”.

Wesley’s letters include regular use of meteorological similes to stress a point concerning non-weather matters. For instance:

**Letter, Leeds, 7 Oct 1749:** [This letter concerning his lost love is considered among the most tragic he ever wrote] .....But we were soon after torn asunder by a whirlwind. In a few months the storm was over.....The waves soon arose again.....

**Letter, Dublin, 12 Apr 1750:** I doubt you are in a great deal more danger from honour than from dishonour. So it is with me. I always find there is most hazard in sailing upon smooth water. When the winds blow and the seas rage, even the sleepers will rise and call upon God.

**Letter, Epworth, 16 Apr 1752:** I have seen more make shipwreck of the faith in a calm than in a storm. We are apt in sunshiny weather to lie down and sleep; and who can tell what may be done before we awake?

**Letter, Bristol, 19 Sep 1773:** It is certainly most profitable for us to have a variety of seasons. We could not bear either to be constantly in storms or constantly in a calm.

**Letter, London, 26 Nov 1786:** In the time of Dr. Jonathan Edwards there were several gracious showers in New England, but there were large intermissions between one and another; whereas with us there has been no intermission at all for seven-and-forty years.

**Letter, Parkgate, 25 Apr 1790:** You keep your love and you keep your integrity even among weathercocks. But who was it that turned Dr. Coke from east to west?

The eighteenth century saw a wide range of climates with some notable meteorological extremes. A brief summary of the British conditions over Wesley's travelling life from 1730-90 is given below. For more information on the weather conditions in the 1700s see *Climate and Weather* by John Kington (Collins, 2010).

The period began with predominating westerly winds and is one of the warmest decades on record with no cold winters except for 1731. This was in marked contrast to the 1740s when the warm westerly flows diminished. This decade began with the very cold winter of 1740 precipitating mass starvation in Ireland. The early years were also exceptionally dry. The cold conditions continued into the next decade with the climax of the 'Little Ice Age' occurring around 1750. The wet 1760s ended with an abrupt change in atmospheric circulation and the end of the Little Ice Age in 1770. This was then followed by a brief warm interlude from 1773 to 1781 with excellent wine harvests being recorded. Conditions were adversely affected by the volcanic ash cloud of 1782 and farming was also hit by the prolonged drought of 1784-5. After further bad winters the 1780 decade culminated with the extreme winter of 1788-9 which was famed for its frost fairs on the Thames but associated deprivation of the population.

Wesley only travelled, and therefore experienced, weather conditions in Britain and the near continent with the one exception of his time in Georgia in the 1730s. The conditions which made the most impression on him, and to which he refers in his Journal on several occasions, are the high temperatures and the violent thunderstorms.

It is indeed interesting to note that, whereas the modern long-term average maximum temperature in Savannah (as published by <http://www.weather.com>) of 22C (71F) is much the same as in England, the extreme Savannah maximum of 41C (105F) is significantly higher than those for England. If Wesley experienced temperatures approaching this level it is not surprising they made a lasting impression on him.

The most severe British storm of his lifetime was in December 1703, shortly after his birth. One of the greatest historically recorded storm surge disasters ever was December 1717 when 11,000 died on the continental side of the North Sea.

In order to get the best picture of the weather he endured during his life and his response to the conditions, the following sections give selected extracts from Wesley's Journal and letters in chronological order, treating each weather type separately. Such detailed comments are of potential use to those involved with building up descriptions of local conditions for use in climate change and social studies.

One must of course bear in mind that, except for reported spectacular events, he only tended to describe weather conditions which he experienced which actually affected his work. Consequently, reports are normally confined to periods when he was travelling so, for instance, some of the extremely cold periods of the century don't get significant mention.



## TEMPERATURE EXTREMES

Wesley was generally able to endure cold conditions without many complaints but, later in life, when often preaching outside, the elements seemed to have more impact on him as shown in many of these examples:

**Journal, 19 March 1770:** I rode to Craidley. Here also a multitude of people obliged me to stand abroad although the North wind whistled round my head.... At six I began at Dudley. The air was as cold as I almost ever felt. But I trust God warmed many hearts.

**Letter, Deptford, 20 Nov 1775:** We had hardly any frost last winter; perhaps you will have little more the ensuing. I am commonly more pinched by the November cold than by that which comes after Christmas.

**Letter, London, 21 Dec, 1775:** I am surprised that one who has passed a winter in Scotland should complain of cold in Wales. It is not a good sign.

**Journal, 19 March 1784:** As we rode back to Bengeworth, the cold was so intense, that it had an effect I never felt before, – it made me downright sick. However I went on and preached in the church at eleven and in the evening at Worcester.

**Journal, 29 March 1784:** We went to Lane-End, a village two or three miles from Newcastle-under-Lyne. It was still piercingly cold; but the preaching house would not hold a fourth part of the people. So I preached in the open air; the moon giving us a clear light but not much heat. [This is one occasion where Wesley's scientific understanding lets him down as there is actually no heat received from the moon, and indeed a bright moon means a clear sky and greater heat loss from the surface leading to increased cooling!]

**Letter, Bristol, 16 Sep 1789:** It gives me pleasure to hear that you have so much resolution that you go to bed at ten and rise at four o'clock. Let not the increase of cold affright you from your purposes.

When advising on the design of a chapel Wesley was concerned not to chill his congregation:

**Letter, London, 12 Feb 1769:** A preaching-house cannot be too light or too airy. Therefore your windows must be large. And let there be sashes, opening downward; otherwise air coming in would give the people cold.

## **FREEZING CONDITIONS**

Wesley encountered all the rigours of a Georgia winter during his time in America as illustrated by this extract:

**Journal, 22 Dec 1736:** There was not time to walk back to Savannah before night ..... The ground was as wet as our clothes, which (it being a sharp frost) were soon froze together; however, I slept till six in the morning. There fell a heavy dew in the night which covered us as white as snow.

On return to England there were many occasions when Wesley reported on freezing conditions. For example:

**Journal, 19 Feb 1747:** The frost was not so sharp so we had little difficulty till we came to Haxey-Car; but here the ice which covered the dykes, and a great part of the Common, would not bear, nor readily break; nor did we know (there being no track of man or beast) what parts of the dykes were fordable.

**Journal, 21 Nov 1748:** I set out for Leigh, in Essex. It had rained hard in the former part of the night, which was succeeded by a sharp frost; so that most of the road was like glass; and the north-east wind set just in our face.

**Journal, 30 Jan 1751:** I set out early [to Oxford], in a severe frost, with the north wind full in my face. The roads were so slippery, that it was scarce possible for our horses to keep their feet. Indeed one of them could not; but fell on his head, and cut it terribly.

During the same cold spell Wesley had an accident in the slippery conditions:

**Journal, 10 Mar 1751:** On the middle of London-Bridge, both my feet slipped on the ice, and I fell with great force, the bone in my ankle lighting on the top of a stone. However I got on, with some help, to the chapel, being resolved not to disappoint the people.

The following extract contains a reference to temperature values but it is not clear whether he is reporting his own observations or merely quoting temperature reports he has heard or read about. In this case the latter possibility seems more likely. This reference occurs right at the beginning of one of his journal sections covering the period January 1776 to August 1779:

**Journal, 17 Jan 1776:** For some days before the frost broke up, it was observed, by means of the thermometer, that the was several degrees more intense than that in the year 1741. But God then removed the cup from us, by a gentle, gradual thaw.

The impact of the great freeze of the winter of 1788 is clearly described:

**Journal, 15 Dec 1788:** In the evening I preached at Miss Teulon's school in Highgate. I think it was the coldest night I ever remember. The house stood on the edge of the hill, and the east wind set full in the window. I counted eleven, twelve, one, and was then obliged to dress, the cramp becoming more and more violent.

**Journal, 25 Dec 1788:** (Being *Christmas-Day*) We began the service as usual at four in the new chapel. Notwithstanding the severe frost which had now lasted a month, the congregation was uncommonly large. [How many 4am Christmas services would be well-attended nowadays?]

**Journal, 30 Dec 1788:** The frost continued severe, yet the congregation was uncommonly large in the evening, and God warmed many hearts.

**Journal, 4 Jan 1789:** Although the extreme severity of the weather kept many tender people away; yet we had a large congregation in the evening to renew their covenant with God.

## SNOWY CONDITIONS

As he frequently travelled large distances during the winter months, Wesley regularly encountered snowy conditions, which he generally intrepidly ploughed on through. However, some were especially difficult:

**Journal, 23 Feb 1745:** We found the roads abundantly worse than they had been the day before; not only because the snows were deeper, which made the causeways in many places impassable, (and turnpike roads were not known in these parts of England till some years after) but likewise because the hard frost, succeeding the thaw, had made all the ground like glass. We were often obliged to walk, it being impossible to ride and our horses fell several times while we were leading them, but not once while we were riding them, during the whole journey. It was past eight before we got to Gateshead-Fell, which appeared a great pathless waste of white. The snow filling up and covering all the roads, we were at a loss how to proceed; when an honest man of Newcastle overtook and guided us safe into the town.

Many a rough journey have I had before, but one like this I never had; between wind, and hail, and rain, and ice, and snow, and driving sleet, and piercing cold.

**Journal, 20 Feb 1746:** Before we came to Aldridge-Heath, the rain changed into snow, which the northerly wind drove full in our faces, and crusted over us from head to foot in less than an hour's time. We inquired of one who lived at the entrance to the moors, which was our best way to Stafford. "Sir" he said "'tis a thousand pound to a penny, that you do not come there today. Why, 'tis four long miles to the far side of this common; and in a clear day, I am not sure to go right across it; And now all the roads are covered with snow; and it snows so, that you cannot see before you." However, we went on, and I believe did not go ten yards out of the way till we came into Stafford.

**Journal, 17 Feb 1747:** We set out as soon as it was light; but it was really hard work to get forward; for the frost would not well bear or break: And the untracked snow covering all the roads, we had much ado to keep all our horses on their feet. Meantime the wind rose higher and higher, till it was ready to overturn both man and beast. However, after a short bait at Bugden, we pushed on, and were met in the middle of an open field with so violent a storm of rain and hail, as we had not had before. It drove through our coats, great and small, boots and every thing, and yet froze as it fell, even upon our eyebrows; so that we had scarce either strength or motion left, when we came into our inn at Stilton.

We now gave up our hopes of reaching Grantham, the snow falling faster and faster. However, we took the advantage of a fair blast to set out, and made the best of our way to Stamford-Heath. But here a new difficulty arose, from the snow lying in large drifts. Sometimes horses and man were well nigh swallowed up. Yet in less than an hour we were brought safe to Stamford. Being willing to get as far as we could, we made but a short stop here; and about sunset came, cold and weary, yet well, to a little town called Brig-Casterton.

**18 Feb:** Our servant came up and said, "Sir, there is no travelling to-day. Such a quantity of snow has fallen in the night, that the roads are quite filled up." I told him "At least we can walk twenty miles a day, with our horses in our hands." So in the name of God we set out. The north-east wind was piercing as a sword, and had driven the snow into such uneven heaps, that the main road was unpassable. However we kept on, a-foot or on horseback, till we came to the White Lion at Grantham.

**Journal, 1 Dec 1747:** About noon we reached Stockbridge. The rain then changed to snow. Seeing no prospect of fair weather, after resting a while we set out in the midst of the storm. It blew such a hurricane, as I have scarce known in England, and that full in our teeth, so that our horses reeled to and fro, and had much ado to keep their feet. The snow likewise drove vehemently in our faces, in riding over the open Downs, where, for several miles, there was neither house, nor tree, nor shrub to shelter, that it was hard labour to get forward. But in about an hour, the sky cleared up, and we rode comfortable to Salisbury.

**Journal, 16 Feb 1748:** We passed through Chepstow soon after sunset, and pushed on; though it grew dark, and the untracked snow lay thick upon the ground. About eight we reached the Star, a good, though small inn, five long miles from Chepstow.

**17 Feb:** It snowed all night. We set out before day; but found it bad travelling, there being no path to be seen, neither footsteps of man or beast. However, in four or five hours we reached Abergavenny; and Brecknock before three in the afternoon.

Our landlady here almost forced us to take a guide. And it was extremely well we did; for the snow had so entirely covered the roads, that our guide himself mistook the way more than once. So that if he had not been with us, we should, without doubt, have lodged upon the mountains.

Travelling further North later in the month Wesley makes an unexpected observation on the distribution of the winter snowfields:

**Journal, 22 Feb 1748:** I preached again at Garth, and on *Monday, 22*, at five in the morning. A little before sun-rise we took horse, it being a clear sharp frost. We had waited four days in the hopes that the snow would melt, fearing the drifts of it would lie deep upon the mountains, particularly as we journeyed northward; but quite contrary to our expectation, the farther northward we went, the less snow we found, so that it scarce hindered us after the first day.

**Journal, 22 Nov 1759:** I took horse between six and seven, in one of the coldest mornings I ever remember. We reached St Alban's without much difficulty; but then the roads were all covered with snow. However, there was a beaten path, though slippery enough, till we turned into the by-road at Sundon. What we could have done there I cannot tell for the snow lay deeper and deeper, had not a waggon gone awhile before us, and marked the way for six miles, to Mr Cole's gate.

**23 Nov** The roads were so extremely slippery, it was with much difficulty we reached Bedford.

Travelling in the Scottish Highlands Wesley encountered problems with snow even in late April:

**Journal, 25 April 1770:** We went on the Castle of Blair. The mountains for the next twenty miles, were much higher, and covered with snow. In the evening we came to Dalwhinny, the dearest inn I have met with in North-Britain. In the morning we were informed so much snow had fallen in the night, that we could get no further. And indeed, three young women, attempting to cross the mountain to Blair, were swallowed up in the snow. However, we resolved, with God's help, to go as far as we could. But about noon we were at a full stop: The snow, driving together on the top of the mountain, had quite blocked up the road. We dismounted, and, striking out of the road warily, sometimes to the left, sometimes to the right, with many stumbles, but no hurt, we got to Dalmagarry, and before sunset to Inverness.

## HAIL

There are several specific mentions of severe hail storms within the Journal. However, by the time reports of past storms reached Wesley significant exaggeration seems to have taken place:

**Journal, 17 Mar 1756:** I learned the particulars of that surprising storm which was here the year before last. It began near Cheltenham, on June 14, 1754, and passed on over Coleford, in a line about three miles broad. It was rain mixed with hail. The hail broke all the windows it had access to, stripped all the trees both of fruit and leaves, and destroyed every green thing. Many of the stones were as large as hen-eggs: some were fourteen or fifteen inches round. The rain occasioned such a

torrent of water in the street as bore away man and beast. A mile or two farther, it joined with the waters of a mill-dam; which it broke down, and carried away several houses. How frequent would accidents of this kind be, if chance, not God, governed the world!

**Journal, 2 Nov 1763:** On Friday, August 19, a gentleman who was at Lisbon during the great earthquake, walking with his friend near Brighthelmstone, in Sussex, and looking south-west toward the sea, cried out, "God grant the wind may rise; otherwise we shall have an earthquake quickly. Just so the clouds whirled to and fro, and so the sky looked [like] that day at Lisbon." Presently the wind did rise, and brought an impetuous storm of rain and large hail. Some of the hail-stones were larger than hen-eggs. It moved in a line about four miles broad, making strange havoc, as it passed quite over the land, till it fell into the river not far from Sheerness. And whenever it passed it left an hot sulphurous steam, such as almost suffocated those it reached.

**Journal, 21 Mar 1779:** Just at the time of preaching, at Bromwich-Heath, began such a storm as that which ushered in the year. Yet as no house could contain the people I was constrained to stand in the court-yard. For a moment I was afraid of the tiles falling on the people; but they regarded nothing but the word. As I concluded, we had a furious shower of hail; Hitherto could the prince of the power of the air go; but no farther.

## HOT WEATHER

John Wesley was more upset by hot weather than by even the most extreme cold conditions. This applied not only to exposure outside but also to hot conditions and the effect of sun shining on him while he was indoors:

**Journal, 14 Jun 1741:** In the afternoon we returned to Markfield. The church was so excessive hot, (being crowded in every corner,) that I could not, without difficulty, read the Evening service.

**Journal, 12 Jun 1752:** I rode to Bolton. So hot a day as this, I do not remember to have felt in England. The congregation seemed to forget the heat, though the Room was like an oven. For it was a comfortable hour: God refreshing many souls with the multitude of peace.

**Journal, 11 May 1777:** I experienced a second time what one calls *febris ex insolatione* [ie: a fever produced by an incautious exposure to the sun – editor's comment in a later edition]. The day was cold; but the sun shone warm on my back, as I sat in the window. In less than half an hour I began to shiver, and soon after had a strong fit of an ague. I directly lay down between blankets, and drank largely of warm lemonade. In ten minutes the hot fit came on, and quickly after I fell asleep. Having slept half an hour, I rose up and preached.

Most of Wesley's very many hot weather experiences that he describes are of course associated with travel or outside preaching. There are many comments about conditions being as hot as he ever remembered in England, or, as we will see later, in Georgia. One must obviously not take all of these literally as memory of past weather can play tricks over time. However, his comments about the length of current periods of hot weather can be taken more literally. As would be expected there are more complaints in general about weather conditions as he gets older.

**Journal, 31 May 1753:** I rode through a delightful vale to General Wood, near Todmorden. The sun was burning hot; but they set up a little tent for me ..... The afternoon was the hottest I ever remember in England: So by the time we came to Bolton, I was fit for nothing but to lie down.

Wesley was always interested in supplementing his personal experiences for his journal with additional relevant information gleaned from people he met. This next extract is an excellent example of this. It also shows his appreciation of the importance, in the days when thermometer calibrations were not very precise, of using the same instrument to take temperature observations in two different locations if the comparisons are going to be believed:

**Journal, 11 Jul 1757:** This and the next three days were the hottest I ever knew in England. A gentleman who formally traded in Guinea, assured me, that the spirits in his thermometer (the same he had when abroad) rose as high as they did within a few degrees of the line.

**Journal, 17 Mar 1766:** I rode to Stroud, the sun shining as in May. Seventeen such days in the beginning of March, I suppose, few men have known. But on *Tuesday* the weather entirely changed; and the piercing north-east wind, this and the two following days, was scarce supportable.

**Journal, 5 Aug 1769:** In the evening I preached at Bradford, to an extremely crowded audience: The heat was hardly supportable. Such a day I had seldom, if ever, known in England. It was nearly as hot at four in the morning, but the rain began before five, and in three or four hours quite cooled the air.

**Journal, 4 Jun 1775:** The sun was intensely hot, as it was on Monday and Tuesday. Six such days together, I was informed, have not been in Ireland for several years.

**Journal, 15 Mar 1779:** I began my tour through England and Scotland; the lovely weather continuing, such as the oldest man alive has not seen before, for January, February, and half of March.

Wesley sometimes mentions temperature values overseas he knows of to compare them with what he is experiencing at the time:

**Journal, 29 Aug 1779:** [At Bristol] It was one of the hottest days I have known in England. The thermometer rose to eighty degrees; – as high as it usually rises in Jamaica.

The following entry appears to be the only mention of John Wesley actually having access to his own thermometer in London as well as again being aware of typical temperature conditions overseas:

**Journal, 9 Jul 1783:** These four days, *Tuesday, Wednesday, Thursday, and Friday*, were as hot as the midsummer days in Jamaica. The summer heat in Jamaica usually raises the thermometer to about eighty degrees. The quicksilver in my thermometer now rose to eighty-two.

**Journal, 7 Jul 1784:** In the afternoon the heat was scarce supportable, and it seemed to increase every hour; but between two and three in the morning came a violent storm, followed by uncommon thunder, and a flood of rain; this entirely cleared the air, and, ceasing just as we set out, left us a pleasant journey to Wakefield.

**Journal, 14 Jul 1784:** The hottest day we have had this summer. We reached Tenby soon after one.

## THE GEORGIA CONNECTION

Wesley's traumatic time in Georgia made a permanent impact in many ways. From a meteorological standpoint the high summer temperatures and other weather conditions he experienced, such as these below, were obviously fixed in his memory:

**Journal, 10 May 1736:** I began visiting my parishioners in order, from house to house: for which I set apart (the time when they cannot work because of the heat, viz.) from twelve to three in the afternoon.

**Journal, 2 Dec 1737:** Thunder and lightning are expected almost every day in May, June, July, and August. They are very terrible, especially to a stranger. During those months from ten in the morning to four in the afternoon, the sun is extremely scorching. But the sea-breeze generally blows from ten till three or four. The winter is nearly of the same length as in England. But the mid-day sun is always warm, even when the mornings and evenings are very sharp, and the nights piercing cold.

In later years he refers back to these conditions, such as in these entries concerning hot weather:

**Journal, 16 May 1758:** We rode to Lurgan .... This was the hottest day I ever felt in Ireland: Near as hot as any I remember in Georgia.



**Journal, 26 May 1762:** We took horse at four, to enjoy the cool of the morning. At seven the sun was warm enough: verily I think as warm as in Georgia. We could not have borne it, but the wind was in our face. However, in the afternoon we got well to Galway.

**27 May:** We had another Georgian day; but having the wind again full in our face, after riding about fifty English miles, we got to Ennis in the afternoon.

**Journal, 5 Aug 1770:** [At St Albans] *Sunday* and for five or six days this week, the heat was as great as I remember in Georgia.

**Journal, 12 Aug 1773:** We came to Collumpton. For five or six days, I think, the weather has been as hot as it is in Georgia.

**Journal, 1 Jul 1779:** This was the first of eighteen or twenty days full as hot as any I remember in Georgia; and yet the season is remarkably healthy. I preached at Beverly at noon and at Hull in the evening.

**Journal, 12 Sep 1784:** I hastened to Kingswood, and preached under the shade of that double row of trees which I planted forty years ago. How little did any one of them think that they would answer such an intention! The sun shone as hot as it used to even in Georgia; but his rays could not pierce our canopy. Our Lord, meantime, shone upon many souls, and refreshed them that were weary.

### THE HAND OF GOD?

On several occasions during the middle period of his ministerial travels Wesley attributed changes in the weather, particularly relief from heat brought by clouds, to the influence of God on the elements. To what extent he honestly believed that God would intervene in such a specific personal way is left to the reader to decide.

**Journal, 24 Apr 1755:** We rode in less than four hours the eight miles (so called) to Newell-Hay. Just as I began to preach, the sun broke out, and shone exceeding hot on the side of my head. I found, if it continued, I should not be able to speak long, and lifted up my heart to God. In a minute or two it was covered with clouds, which continued till the service was over. Let anyone who please call it *chance*: I call it an answer to prayer.

**Journal, 16 Jun 1757:** I found myself much out of order, till the flux stopped at once without any medicine. But still being weak, and the sun shining extremely hot, I was afraid I should not be able to go round by Kelso. Vain fear! God took care for this also. The wind, which had been full east for several days, turned this morning full west; and blew just in our face: And about ten the clouds rose, and kept us cool till we came to Kelso.

**Journal, 2 Jul 1759:** I rode to Durham, and went at one to the meadow by the river side, where I preached two years ago. The congregation was now larger by one half; but the sun was so scorching hot on my head, that I was scarce able to speak. I paused a little, and desired God would provide us a covering, if it was for his glory. In a moment it was done; a cloud covered the sun, which troubled us no more. Ought voluntary humility to conceal these palpable proofs, that God still heareth the prayer?

**Journal, 8 Aug 1760:** (At Kinsale) About nine sharp, a storm having put an end to their exercise, I went to the soldiers in the field. I stood so near the intrenchments of the fort, that they could hear within as well as without. The sun indeed shone extremely hot on my head; but presently a cloud interposed. And when I began to be chill (for the wind was high and sharp) it removed till I wanted it again. How easily we may see the hand of God in small things as well as great! And why should a little pointless raillery make us ashamed to acknowledge it?

## WET AND DRY WEATHER

### WET WEATHER

In the same way that John Wesley was affected by heat and cold he was also often hindered by wet conditions that made travelling and preaching difficult.

However, in his early years he seemed to be resilient to the rigours of American conditions:

**Journal, 2 Aug 1736:** In walking to Thunderbolt I was in so heavy a shower, that all my clothes were as wet as if I had gone through the river. On which occasion I cannot but observe that vulgar error, concerning the hurtfulness of the rains and dews of America. I have been thoroughly wet with these rains more than once; yet without any harm at all. And I have lain many nights in the open air, and received all the dews that fell; and so, I believe, might any one, if his constitution was not impaired by the softness of a genteel education.

Of course rainy conditions became a common source of comment once he returned to England.

**Letter, Bristol, 25 Apr 1739:** And the day being very cold and stormy (besides that much rain had fallen in the night) many who designed it were hindered from going to Hanham Mount, which is at least four miles distant from the town.

**Letter, Bristol, 30 Apr 1739:** The rain on Tuesday morning made them not expect me at Bath; so that we had not above a thousand or twelve hundred in the meadow.....

**Letter, Bristol, 28 May 1739:** The rain prevented many from coming to Baptist Mills; but twelve or fifteen hundred stayed ..... His sending forth lightning with the rain did not hinder about fifteen hundred poor sinners from staying with me at Rose Green.

**Letter, Bristol, 4 Jun 1739:** The rain was so violent on Saturday that our congregation in the Bowling Green consisted of only nine hundred or a thousand.

**Letter, Bristol, 2 Jul 1739:** I preached the first time under the sycamore-tree near the school at Kingswood, during a violent rain, on those words of Isaiah, 'As the rain cometh down from heaven, and returneth not thither, but watereth the earth and maketh it bring forth and bud....'

By the 1740s his constitution was becoming more susceptible to wet weather. There are many instances of him describing himself as becoming completely soaking wet but he rarely seemed to be any the worse for it.

**Journal, 23 Mar 1750:** We took horse at five. it rained incessantly all the way we rode. And when we came on the great mountain, four miles from the town, (by which time I was wet from my neck to my waist,) it was with great difficulty I could avoid being borne over my mare's head, the wind being ready to carry us all away; Nevertheless, about ten we came safe to Dannabull, praising him who saves both man and beast.

**Journal, 7-8 Sep 1751:** I rode in a stormy afternoon to St. Just. But the rain would not let me preach abroad, either that evening or on *Sunday* morning .... I began at Newlyn about five. About the middle of the sermon there was a vehement shower of rain and hail; But the bulk of the congregation stood quite still, every man in his place.

**Journal, 19 May 1753:** I preached at Pocklington again, and rode on to Whitgift-Ferry. It rained a great part of the way; and just as we got to the water, a furious shower began, which continued above half an hour ..... We set out from Whitgift soon after four; but the violent rain which attended us till after seven made the road so dirty and slippery, that our horses could hardly keep their feet; so that it was nine before we reached Epworth.

**Journal, 11 Aug 1753:** The rain stopped at twelve, and gave me an opportunity of preaching in the market place at Camelford. I only saw one person in the congregation who was not deeply serious. That one (which I was sorry to hear) was the Curate of the Parish.

Almost as soon as we set out, we were met by such a shower of rain as I never saw before in Europe. But it did us no hurt: We came very well, though very wet, to St.Gennis.

**Journal, 28 Aug 1758:** I scarce saw such a rain in Europe as we had for a considerable part of this morning. In one of the main streets the water ran with a stream capable of turning a mill. However, having appointed to preach at noon, in Newton, about six miles from Swansea, I was determined not to break my word, though I supposed but a few would attend: But I was mistaken.

**Journal, 30 Jun 1760:** I have rarely seen so heavy rain in Europe as we had in the way to Tubbercurraugh. I was quickly wet to my toes' end; but the day clearing, I was dry again in a few hours.

**Journal, 26 Aug 1763:** We designed to take horse at four, but the rain poured down, so that one could scarce look out. About six however, we set out and rode through heavy rain to St Clare .... But when we had rode three or four miles, I recollected that I had heard of a ford, which would save us some miles riding. We inquired of an old man, who soon mounted his horse, showed us the way, and rode through the river before us.

It is interesting to note that John Wesley judged the fitness of his companions by an 'equivalent age' compared to himself, so a person younger than him could be classified as older if he felt he was less fit for travel. For someone with such a keen interest in geography it is surprising that his estimates of distances sometimes proved to be way off the mark:

**Journal, 16 Feb 1769:** Supposing we had but five-and-forty miles to Yarmouth, I did not set out till near seven: But it proved threescore; likewise it rained all day, and part of the road was very bad. However, God strengthened both man and beast: So we reached it before six in the evening. As we were both thoroughly wet, I was a little afraid for my companion, who was much older than me, though he had not lived so many years. But neither of us was any worse.

**Journal, 1 May 1770:** I rode on to Aberdeen, and spent the rest of the week there. It fell out well, for the weather was uncommon: We had storms of snow or rain every day. And it seems the weather was the same as far as London. So great a storm has scarce been in the memory of man.

**Journal, 8 Nov 1770:** I set out for London. It rained almost all the day; and in the afternoon so impetuously, (the rain being driven by a furious wind,) that it was with difficulty that we reached Lakenheath.

**Journal, 28 Aug 1781:** Between nine and ten we had such a storm of rain, as I do not remember to have seen in Europe before. It seemed ready to beat in the windows of the chaise, and in three minutes drenched our horsemen from head to foot. We reached Truro, however, at the appointed time.

As Wesley kept such a complete record of events, including the weather, his comments on spells of continuous similar weather conditions can probably be taken as being fairly accurate:

**Journal, 26-28 Sep 1752:** In the evening I called sinners to repentance in the main street at Bandon. On *Thursday* and *Friday* the rain drove us into the market-house. Indeed, I hardly remember two dry days together since I landed in Ireland.

**Journal, 1 Jun 1771:** This is the twelfth day we have had continued rain, together with March winds. I dined at Rabin, near Castlebar, one of the pleasantest seats in Connaught.

**Journal, 23-24 Jun 1778:** I went on to Tanderagee, one of the pleasantest towns in Ireland.....For exactly two months, we have had only two days without rain.

**Journal, 28 Aug 1781:** Between nine and ten we had such a storm of rain, as I do not remember to have seen in Europe before. It seemed ready to beat in the windows of the chaise, and in three minutes drenched our horsemen from head to foot. We reached Truro, however, at the appointed time.

As was the case for relief of excessively hot weather Wesley frequently attributed lack of rain at an appropriate time to 'divine intervention':

**Journal, 17 Feb 1741:** In the afternoon I reached Oxford, and leaving my horse there, set out on foot for Stanton-Harcourt. The night overtook me in about an hour, accompanied with heavy rain. Being wet and weary, and not well knowing my way, I could not help saying in my heart, (though ashamed of my want of resignation to God's will,) O that thou wouldst "stay the bottles of heaven;" or, at least give me light, or an honest guide, or some help in a manner thou knowest! Presently the rain ceased; the moon broke out, and a friendly man overtook me, who set me upon his own horse, and walked by my side till we came to Mr.Gambold's door.

**Journal, 2 Nov 1745:** (near Newcastle) The rain was stayed to-day also, from nine to ten, (it fell both before and after,) while I preached.

**Journal, 28 Sep 1748:** I took horse between three and four, and came to St.Mewan at eight. It rained all the time I was walking to the green, which was the usual place for preaching. But the moment I began to speak the rain ceased, and it did not begin again till I had done speaking. It rained with little intermission all the day after; which made the roads so bad that it was pretty dark when we came within two miles of Crimble-Passage.

**Journal, 2 Sep 1750:** I rode to Tiverton ..... The meadow was then full from side to side, and many stood in the gardens and orchards round. It rained in the day several times; but not a drop fell while I was preaching. Here is an open door indeed! May no man be able to shut it!

**Journal, 20 Jun 1761:** This evening it also rained at Hutton-Rudby, till seven, the hour of preaching: but God heard the prayer; and from the time I began we only had some scattering drops.

**Journal, 8 Jun 1776:** As we rode to Sheep-Hill, we saw and heard at a distance, much thunder, and rain, and lightning. The rain was before and behind, and on each side: But none fell upon us. About six I preached at Sheep-Hill. It rained hard very near us; but not a drop came upon us. After eight I reached Newcastle, thoroughly tired.

**Journal, 1 July 1777:** I preached in the evening at Marton, near Buckingham; the thunder, attended with heavy rain, was likely to rob us of our whole congregation. We cried to God. The thunder and rain ceased, and we had a fair sunshiny evening.

**Journal, 26 Jun 1789:** Between Newtown and Moyle we had such rain as I never knew in Europe before. In two minutes the horsemen were drenched from head to foot. We dined at the Rector's, Dr Wilson, a man of very uncommon learning. At six he took me in his coach to the Castle-yard, where a numerous congregation soon assembled. Almost as soon as I began to preach, the rain began. Observing the people begin to scatter, I prayed aloud, that God would "stay the bottles of heaven." He did so: The people returned; and we had a comfortable, refreshing shower of heart-reviving love.

## **MAKING THE BEST OF IT**

On some, not that infrequent, occasions the rain continued throughout Wesley's outdoor services. In these cases he sometimes tried to put a brave face on it or even turn the weather to his apparent advantage:

**Journal, 19 Aug 1769:** About eight I preached at Neath; about three in the church at Bridge-End; (where the rain doubled the congregation by stopping the harvest-work).

**Journal, 6 May 1783:** [Near Dublin] The unusually large congregation in the evening was plentifully watered with the dew of heaven. I found a particular concern for the children, many of whom willingly attended.

**Journal, 26 May 1789:** The rain prevented my preaching abroad at Brooksborough, although the congregation was exceeding large. Part of them were sheltered by a spacious turf-house, and the rest little regarded the rain; for the Lord watered us, in an uncommon degree, with the dew of his blessing.

## THUNDER STORMS

Wesley had obviously experienced very severe Georgian thunder storms and often compared ones he experienced later with them. Occasionally he saw advantages in them in that they frightened the people into attending service.

**Journal, 19 Jul 1762:** [At Tullamore] Between two and three in the morning was such a thunder and lightning as I never knew in Europe. The crack and the flash were the same instant. Most of the houses shook; and yet no hurt was done in the whole town: But some good was done; for at five o'clock the preaching-house was quite filled; and the inward voice of the Lord was mighty in operation. This also was "a glorious voice."

The following unusual extracts appear to include a direct observation of some form of non-fatal lightning strike/near miss, and three possible descriptions of local 'ball lightning' or other similar effects:

**Journal, 29 Jan 1736:** [at the end of a 'hurricane' in the Atlantic] Toward the end of it, we had that appearance on each of the masts, which (it is thought) the ancients called Castor and Pollux. It was a small ball of white fire, like a star. The mariners say, it appears either in a storm, (and then commonly upon the deck,) or just at the end of it; and then it is usually on the masts or sails.

**Journal, 23 Jul 1777:** I preached about one at Margam. In the road between this and Bridge-End, we had the heaviest rain I ever remember to have seen in Europe: And it saved John Prickard's life; for presently man and beast were covered with a sheet of lightning: but as he was thoroughly wet, it did him no harm.

**Journal, 14 Apr 1782:** [At St Helen's] I was waked at two in the morning, as was Mr. Broadbent also, by a very loud noise, like a vast crack of thunder, accompanied by a flash of bright light. It made the whole room shake, and all the tables and chairs therein jar. But (what is strange) none in the house, or in the town, heard it besides us.

**Journal, 6 Mar 1788:** About the middle of the discourse, while there was on every side attention still as night, a vehement noise arose, none could tell why, and shot like lightning through the whole congregation. The terror and confusion were inexpressible. You might have imagined it was a city taken by storm ..... In about six minutes the storm ceased, almost as suddenly as it rose, and, all being calm, I went on without interruption.

There are many general reports of thunder storms throughout the journal. For example these two separated by some 35 years:

**Journal, 17 Nov 1755:** As we were walking towards Wapping, the rain poured down with such violence, that we were obliged to take shelter till it abated. We then held on to Gravel-Lane; in many parts of which the waters were like a river. However we got on pretty well, till the rain put out the candle in our lantern. We then were obliged to wade through all, till we came to the chapel-yard. Just as we entered it, a little streak of lightning appeared in the south-west. There was likewise a small clap of thunder, and a vehement burst of rain, which rushed so plentifully through our shattered tiles, that the very vestry was all in a float. Soon after I began reading prayers, the lightning flamed all round it, and the thunder rolled over our heads. When it grew louder and louder, perceiving many strangers to be much affrighted, I broke off the prayers after the Collect, "Lighten our darkness, we beseech thee, O Lord;" and began applying, "The Lord sitteth above the water-flood; the Lord remaineth a king for ever." Presently the lightning, thunder, and rain ceased, and we had a remarkably calm evening. It was observed, that exactly at this hour, they were acting 'Macbeth' in Drury-Lane; and just as the mock-thunder began, the Lord began to thunder out of heaven. For a while it put them to a stand; But they soon took courage, and went on.

**Journal, 22 Jun 1790:** I crossed over to Scarborough. The congregation in the evening was unusually small, being not yet recovered from the blessed fruits of the election. This was the hottest day we have had this year: And about one in the afternoon, the thunder, which had long lain at a distance, came near, with thick flashes of lightning, and impetuous rain: The thunder continued in one roll for an hour and a quarter. I never heard the like before, since my return from America.

Wesley showed a real interest in all types of natural phenomena including the weather, to the extent that he went out of his way to obtain reports and visit locations of extreme events to include in his writings:

**Journal, 3 Mar 1748:** [part of the story of Mrs Holloway, near Hollyhead] One day she was sitting in her house, a flash of lightning killed a cat which sat just by her, and struck her to the earth, scorching her flesh in many parts, and yet not at all singeing her clothes. When she came to herself, she could not but acknowledge the loud call of God: But her seriousness did not continue long; her acquaintances soon laughed her out of it.



The following extract is a fine example of Wesley going further than just reporting an exceptional meteorological event but going on to analyse the data and come to a useful conclusion:

**Journal, 30 Sep 1762:** About midnight I was waked by loud thunder, which continues about a quarter of an hour at Tiverton. In other places, we were afterwards informed, it continued a great part of the night. Yet comparing various accounts, I found the main shock was at the same time for near a hundred miles. So it seems there was a train of clouds for at least that space, which, by an electrical touch, were all discharged at once.

**Journal, 14 Jul 1783:** I took a little journey into Oxfordshire, and found the good effects of the late storms. The thunder had been uncommonly dreadful; and the lightning had tore up a field near High Wycombe, and turned the potatoes to ashes.

and continuing:

**Journal, 16 Jul 1783:** I went on to Witney. There were uncommon thunder and lightning here last Thursday (10th); but nothing to that which were there on Friday night (11th). About ten the storm was just over the town; and both the bursts of thunder and lightning, or rather sheets of flame, were without intermission. Those that were asleep in the town were waked, and many thought the day of judgment was come. Men, women and children, flocked out of their houses, and kneeled down together in the streets. With the flames, the grace of God came down also in a manner never known before; and the impression was general, so it was lasting: It did not pass away with the storm; but the spirit of seriousness, with the grace of supplication, continued. A prayer meeting being appointed for the *Saturday* evening, the people flocked together; so that the preaching-house was more than filled ..... When I came on the *Wednesday*, the same seriousness remained on the generality of the people.

**Letter, Bristol, 20 Jul 1783:** I do not remember any storm which travelled so far as that on the 10th. It has been in almost all parts of England, but especially at Witney, near Oxford. The next night they had a far greater, which seemed to cover the whole town for four hours with almost one uninterrupted blaze.; and it has made such an impression on high and low, rich and poor, as had not been known in the memory of man.

## FLOODS

The frequent result of heavy rain was flooding which, with poor roads, often made Wesley's journeys difficult and dangerous:

**Journal, 18 Feb 1746:** We pushed on through thick and thin, and with much difficulty got to Stanley. Thence, after an hour's stop, we hastened on. The brooks were so swoln [sic] with the late rains, that the common roads were impassable; but our guide, knowing the country, carried us round about through the fields, so that we escaped the dangerous waters, and soon after sunset came (wet and dirty enough) to Evesham.

**Journal, 30 Sep 1748:** (Report of floods on 23 Jul 1747 - not for readers of a sensitive disposition):

We rode in the afternoon to Woodley. We saw by the way many marks of the late flood; of which John Bennet, who was then upon the place, gave us the following account:-

On Saturday, the 23 July last, there fell for about three hours, in and about Hayfield, in Derbyshire, a very heavy rain, which caused such a flood as had not been seen by any now living in those parts.

"The rocks were loosened from the mountains: One field was covered with huge stones from side to side.

Several water-mills were clean swept away, without leaving any remains.

The trees were torn up by the roots, and whirled away like stubble.

Two women of a loose character were swept away from their own door and drowned. One of them was found near the place; the other was carried seven or eight miles.

Hayfield churchyard was all torn up, and the dead bodies swept out of their graves. Some were hanging on trees; others left in meadows or grounds; some partly eaten by dogs or wanting one or more members."

**Journal 14, Jun 1751:** The waters were greatly out in the road, so that the York coach was overturned just before us; the bridge it should have gone over being under water: Yet no passenger was hurt, only dropping wet, being all thrown into the river. We were to pass the same river a few miles off; and which way to do it we knew not. But just as we came to the place we overtook two gentlemen who had hired a guide. So we followed them as close as we could, and crossed it without difficulty.

**Journal, 23 Aug 1756:** We rode forward to Redditch. It had rained all the way, so that Mr Walsh was obliged to go to bed as soon as we came in. Having dried some of our clothes, Mr Bruce and I took horse again about two; having one with us who knew the by-roads, the common road being impassable through the floods. About five we came to a broad water, which our guide did not care to pass. Mr Bruce, seeing a foot-bridge, walked over it, leading his horse by a long rein through the water: But in an instant the horse disappeared. However, he soon emerged and

gained the bank. I rode through, at a small distance, very safely; and in the evening preached at Evesham.

On several occasions flooding made river crossings quite dangerous:

**Journal, 13 Apr 1759:** We took boat; but could not cross over. The violence of the stream, swollen by the late rains, bore us down in spite of all we could do. Having striven against it a considerable time, we were obliged to cast anchor. After waiting some time, we got near the shore, and were towed up to the place of landing. A toilsome day was followed by a comfortable night. At half-hour after eight the House at Epworth was well filled.

**Journal, 16 Jan 1764:** Between twelve and one we crossed the Ensham-Ferry. The water was like a sea on both sides. I asked the ferryman, "Can we ride the causeway?" he said, "Yes, Sir; if you keep in the middle." But this was the difficulty, as the whole causeway was covered with water to a considerable depth. And this in many parts ran over the causeway with the swiftness and violence of a sluice. Once my mare lost both her fore feet, but she gave a spring, and recovered the causeway: Otherwise we must have taken a swim; for the water on either side was ten or twelve feet deep. However, after one or two plunges more, we got through and came safe to Witney.

The following extract gives a detailed account of the impact of, and a suggested reason for, the severe flooding in the North of England:

**Journal, 7 Dec 1771:** I read today of a circumstantial account of the late inundations in the north of England, occasioned by the sudden and violent overflowing of the three rivers, the Tees, the Wear, and the Tyne. All these have their rise within a few miles of each other, in a mountain at the head of Teesdale and Weardale; on which there was nothing more than a little mizzling rain, till the very hour when the rivers rose, and poured down such an amazing quantity of water as utterly astonished the people of Sunderland, at the mouth of the Wear, overflowed all the lower part of Newcastle-upon-the-Tyne, and filled the main street of Yarm, upon the Tees, with water nine or ten feet deep. Such an overflowing of these rivers none ever saw before, nor have we an account of any such in history.

Rain was not the cause of this; for there was next to none at the head of the rivers. What was the cause we may learn from a letter wrote at this time by a Clergyman in Carlisle:- "Nothing is so surprising as what lately happened at Solway-Moss, about ten miles from Carlisle. About four hundred acres of this Moss [i.e. peat bog] arose to such a height above the adjacent level, that at last it rolled forward like a torrent, and continued in its course above a mile, sweeping along with it houses and trees, and everything in its way. it divided itself into islands of different extent, from one to ten feet in thickness. It is remarkable, that no river or brook runs either through or near the Moss."

To what cause then can any thinking man impute this, but to an earthquake? And the same doubtless it was, which, about the same time, wrought in the bowels of

that great mountain, whence those rivers rise, and discharged from thence that astonishing amount of water.

**Journal, 25 Nov 1774:** I set out between eight and nine in a one-horse chaise, the wind being high and cold enough. Much snow lay on the ground, and much fell as we crept along over the fen banks.

Honest, Mr Tubbs wouldst needs walk and lead the horse through the water and mud up to his mid-leg, smiling and saying, "we fen-men do not mind a little dirt." When we had gone about four miles, the road would not admit of a chaise. So I borrowed a horse and rode forward; but not far, for all the grounds were under water. Here therefore I procured a boat full twice as large as a kneading-trough. I was at one end, and a boy at the other, who paddled me safe to Erith.

**Letter, London, 9 Feb 1789:** It was providence indeed that the flood did not begin in the night rather than in the day. So it is that judgement is usually mixed with mercy.

## DRY WEATHER

Being very aware of the outdoor environment and the conditions of the countryside, Wesley, on several occasions, commented on exceptional dry spells:

**Journal, 1 Aug 1764:** It was with difficulty I reached Cowbridge about one, where the congregation was waiting. I found they had had heavy rain great part of the day; but very little fell upon us. Nor do I remember that from the beginning of March to now we have been in more than one heavy shower either in England, Scotland, or Wales.

**Journal, 23 Jul 1765:** [In Donnard, Co Wicklow] About the middle of the sermon, the rain (which was exceedingly wanted) began, and drove us into our friend's house.

**Journal, 27 May 1783:** I preached at Loughborough in the morning, and at Mountsorrel at one. While I was preaching, the rain, which was so wanted, began, and continued for eight-and-forty hours.

## FOGS

Another aspect of water encountered by Wesley was fog, which could cause significant travelling problems, sometimes involving divine intervention.

**Journal, 27 Sep 1749:** I took horse at half past three. There was no moon, or stars, but a thick mist; so that I could see neither road, nor anything else; but I went as right as if it had been noon-day. When I drew nigh Penruddock-Moor, the mist vanished, the stars appeared and the morning dawned; so I imagined the danger

was past; but when I was on the middle of the moor, the mist fell again on every side, and I quickly lost my way. I lifted up my heart. Immediately it cleared up and I soon recovered the high-road.

**Journal, 10 Nov 1755:** I preached at Wells..... The frost was very severe, accompanied with such a fog as perhaps the oldest man there never saw before. The lamps could not be seen across the street, and hardly the ground by those who had lights in their hands. Many lost their way, when they were just at their own doors. And it was almost as hard to breathe as to see. How easy it is for God to punish a sinful nation, even without employing an arm of flesh!

**Journal, 27-30 Mar 1760:** I rode to Liverpool in order to embark for Dublin. We were desired to be on board by nine on *Saturday* morning: But the wind falling, and a fog coming on, we gained a little more time; so we had one more solemn opportunity in the evening. *Sunday*, 30. The fog was gone, and the wind fair.

**Journal, 22 Oct 1770:** I took horse a little before five, in an exceeding thick fog; but it was gone by noon. The rain, which was suspended all day, began again when we came to Whittlebury.

## HYDROLOGY AND CLIMATOLOGY

There are several occasions described in his journal where Wesley appears to show some understanding of water-related (hydrological) matters:

**Journal, 3 Dec 1737:** [in America] It now grew toward sunset; so we sat down, faint and weary, having had no food all day, except a gingerbread cake, which I had taken in my pocket. A third of this we had divided among us at noon; another third we took now; the rest we reserved for the morning; but we had met with no water all the day. Thrusting a stick into the ground, and finding the end of it moist, two of our company fell a digging with their hands, and, at about three feet depth, found water. We thanked God, drank, and were refreshed.

**Journal, 17 May 1756:** Walking up at the Red-House Walk, (which runs between two rows of meadows, with the river winding through them, and a chain of fruitful hills on the right hand and on the left,) I saw the plain reason why strangers usually complain of the unwholesomeness of the water in Cork. Many women were filling vessels with river-water (which is that commonly used in the city for tea and most other purposes) when the tide was at the height. Now, although, this is not salt, yet it cannot but affect both the stomach and bowels of tender persons.

**Journal, 7 Jul 1757:** This day, between Helmsley and Kirkby-Moorside, we rode over a little river, which suddenly disappears; and, after running a mile under ground, rises again and pursues his course.

There are also occasional references to large or small scale climatological information which Wesley had obtained locally or from his reading:

**Journal, 2 Dec 1737:** During this time I had frequent opportunities of making many observations and inquiries concerning the real state of this province, (which has been so variously represented,) the English settlements therein, and the Indians that have intercourse [conversation] with them. These I minuted down from time to time; a small extract of which I have subjoined.

1. Georgia lies in the 30th and 31st degree of north latitude. The air is generally clear, the rains being much shorter, as well as heavier, than in England. The dews are great. Thunder and lightning are expected almost every day in May, June, July, and August. They are very terrible, especially to a stranger. During those months, from ten in the morning to four in the afternoon, the sun is extremely scorching. But the sea-breeze generally blows from ten till three or four. The winter is nearly of the same length as in England. But the mid-day sun is always warm, even when the mornings and evenings are very sharp, and the nights piercing cold.

**Journal, 28 Apr 1772:** We walked through the Duke of Athol's gardens, in which was one thing I never saw before, - a summer-house in the middle of a greenhouse, by means of which one might in the depth of winter enjoy the warmth of May, and sit surrounded with greens and flowers on every side.

Some climatological accounts are, however, definitely lacking in accuracy and understanding:

**Journal, 12 Jun 1764:** We rode through the pleasant and fertile county of Murray to Elgin. I never suspected before that there was any such country as this near and hundred and fifty miles beyond Edinburgh; a country which is supposed to have generally six weeks more sunshine in a year than any part of Great Britain.

**Journal, 6 Jul 1781:** To-day I finished the second volume of Dr Robertson's *History of America*. ... If it was worth while to mention a little thing, after things of so much greater importance, I would add, I was surprised that so sensible a writer, in enumerating so many reasons, why it is so much colder in the southern hemisphere than it is in the northern; why it is colder, for instance, at forty degrees south than at fifty north latitude; should forget the main, the primary reason, namely, the greater distance from the sun! For is it not well known, that the sun (to speak with the vulgar) is longer on the north side the line than the south? That he is longer in the six northern signs than the southern, so there is a difference (says Gravesande) of nine days? Now, if the northern hemisphere be obverted to the sun longer than the southern, does not this necessarily imply that the northern hemisphere will be warmer than the southern? And is not this the primary reason for being so?

## WIND AND CALM

### WIND ON LAND

Wesley was frequently subjected to windy weather while on his travels around the countryside. He occasionally took considerable risks in continuing with journeys on horseback in gale conditions, when a less adventurous traveller would have given up, in order to make his next engagement on time:

**Journal, 27 Dec 1742:** I rode to Horsley. The house being too small, I was obliged again to preach in the open air; but so furious a storm have I seldom known. The wind drove upon us like a torrent; coming by turns from east, west, north, and south; the straw and thatch flew round our heads; so that one would have imagined it could not be long before the house must follow; but scarce any one stirred, much less went away, till I dismissed them with the peace of God.

**Journal, 29 Dec 1742:** I took horse for Tanfield. More than once I was only [just] not blown off my horse. However at three I reached Leigh, and explained to a multitude of people the salvation which is through faith. Afterwards I met the society in a large upper room, which rocked to and fro with the violence of the storm. But all was calm within.

**Journal, 17 Mar 1752:** The rain continued without intermission, till we came to Enstone. Soon after we set out from thence, it was succeeded by so vehement a wind, as on Broadway-Hill often drove us clear out of the path, and was ready to carry away both horse and rider. But our strength was as our day; and before six in the evening we came unhurt to Evesham.

**Journal, 30 Nov-1 Dec 1768:** I rode to Dover, and came in just before a violent storm began .... The storm was ready to bear away both man and beast. But it abated about noon; so that, after preaching at Margate, I had a pleasant ride to Canterbury.

**Journal, 18 Apr, 1774:** The minister of Heponstall sent word that I was welcome to preach in his church. It was with difficulty we got up the steep mountain; and when we were upon it the wind was ready to bear us away. The church was filled, not with curious but serious hearers. No others would face so furious a storm.

**Journal, 31 Dec 1778:** We concluded the old year with a solemn watch-night, and began the new with praise and thanksgiving. We had a violent storm that night. The roaring of the wind was like loud thunder. It kept me awake half an hour; I then slept in peace.

As on other occasions, Wesley occasionally attributed changes in the weather to God's influence:

**Journal, 6 Oct 1788:** I preached at Loddon, North-Cove, and Lowestoft. When I came to the town, it blew a storm; and many cried out, "So it always does when he comes." But it fell suddenly as it rose; for God heard the prayer.

Being interested in the weather in general Wesley sometimes found space to include reports of past stormy conditions in his journal and letters:

**Journal, 21-24 Apr 1757:** I rode to Liverpool ..... The upper part of the high spire of the church was blown down in the late storm. The stones, being bound together by strong iron cramps, hung waving in the air for some time. Then they broke through roof, gallery, pews, and pavement, and made a deep dint in the ground.

**Letter, London, 11 Nov 1775:** There was something very awful in that storm which I suppose reached all over England and Ireland; although it seems not to have been altogether so violent in London as in most other places.

To end this section describing windy events on land there is an entry in 1757 describing wind squalls causing dust storms as a precursor to a storm:

**Journal, 19 Jun 1757:** But here we had a new kind of inconvenience: Every four or five minutes a strong wind covered us over with a shower of dust; so that it was not easy to look up, or keep one's eyes open. But not long after the rain began, which constrained me to preach within, at Newcastle.

## WIND AT SEA

The eighteenth century was a time of much use of sea passages for local as well as international travel. Journey times were totally dependent on the wind strength and direction, or, of course, the lack of any wind. It was still a risky business at times, even around British shores let alone in the open ocean.

## GALES AND STORMS

Wesley was indeed fully aware throughout his voyaging days of the risks involved and knew of ships that had foundered.

**Journal, 20 Nov 1735:** We fell down into Yarmouth road, but the next day were forced back to Cowes. During our stay here there were several storms; in one of which two ships in the Yarmouth road were lost.



A little more detail is provided in a letter written on board his ship:

**Letter, “Simmonds”, 20 Jan 1736:** Whilst we were in Cowes road, there were several storms, in one of which two ships were cast away on the back of the island, as we should have been if it had not pleased God to detain us in that safe station.

**Journal, 22 Oct 1743:** The same day [as John himself had a dangerous ferry crossing], and, as near as we could judge, the same hour, the boat in which my brother was crossing the Severn, at the New-Passage, was carried away by the wind, and in the utmost danger of splitting on the rocks. But the same God, when all human hope was past, delivered them as well as us.

**Journal, 26 Oct 1743:** She set out in a ship, bound for Hull. A storm met them by the way; the ship sprung a leak; but though it was near the shore, on which so many people flocked together, yet the sea ran so exceedingly high, that it was impossible to make any help. Mrs S. was seen standing on the deck, as the ship gradually sunk; and afterwards hanging by her hands on the ropes, till the masts likewise disappeared. Even then, for some moments, they could observe her floating on the waves, till her clothes, which buoyed her up, being thoroughly wet, she sunk, – I trust, into the ocean of God’s mercy.

**Journal, 10 Oct 1752:** We had another violent storm: It made Mr P’s house rock to and fro, though it was a new, strong house, and covered on all sides with hills, as well as with trees. We afterwards heard, that several ships were lost on the coast. Only one got into the harbour, but grievously shattered, her rigging torn in pieces, and her main mast gone by the board.

**Letter, London, 12 Oct 1787:** A second storm drove us to the Isle of Purbeck, just where the Indiaman was lost. There I had the opportunity of preaching to a little Society (at Swanage), which I had not seen for thirteen years.

We now turn to the most exciting accounts of Wesley’s adventures, those during the many stormy sea crossings he endured. Firstly, and especially, his descriptions of the severe Atlantic storms on his way to and from America. There were five storms on the outward passage, the second of which could easily have resulted in the end of the John Wesley ministry before it had really even begun. It is interesting to note how quickly Wesley had picked up the sailing jargon for incorporation in his descriptions.

He was obviously frightened about the prospect of his trans-Atlantic crossing:

**Journal, 23 Nov 1735:** At night I was awaked by the tossing of the ship and the roaring of the wind, and plainly showed I was unfit, for I was unwilling, to die.

**Journal, 17 Jan 1736:** Many people were very impatient at the contrary wind. At seven in the evening they were quieted by a storm. About nine the sea broke over us from stem to stern; burst through the windows of the state cabin, where three or four of us were, and covered us all over, though a bureau sheltered me from the main shock. About eleven I lay down in the great cabin, and in a short time fell asleep, though very uncertain whether I should wake alive, and much ashamed of my unwillingness to die. Oh how pure in heart must he be, who would rejoice to appear before God at a moment's warning! Toward morning, "he rebuked the winds and the sea, and there was a great calm."

**Journal, 23 Jan 1736:** In the evening another storm began. In the morning it increased, so that they were forced to let the ship drive. I could not but say to myself, "How is it thou hast no faith?" being still unwilling to die. About one in the afternoon, almost as soon as I had stepped out of the great cabin door, the sea did not break as usual, but came with a full, smooth tide over the side of the ship. I was vaulted over with water in a moment, and so stunned that I scarce expected to lift up my head again, till the sea should give up her dead. But thanks be to God, I received no hurt at all. About midnight the storm ceased.

**Journal, 25 Jan 1736:** At noon our third storm began. At four it was more violent than before ..... The winds roared round about us, and (what I never heard before) whistled as distinctly as if it had been a human voice. The ship not only rocked to and fro with utmost violence, but shook and jarred with so unequal, grating a motion, that one could not but with great difficulty keep one's hold on anything, nor stand a moment without it. Every ten minutes came a shock against the stern or side of the ship, which one would think should dash the planks to pieces. At this time a child, privately baptized before, was brought to be received into the church ..... the sea broke over, split the main-sail in pieces, covered the ship, and poured between the decks, as if the great deep had already swallowed us up.

During this storm Wesley visited, and was impressed by the calmness of, the German passengers in comparison with the panic of the British.

**Journal, 29 Jan 1736:** About seven in the evening, we fell in with the skirts of a hurricane. The rain as well as the wind was extremely violent. The sky was dark in a moment, that the sailors could not so much as see the ropes, or set about furling the sails. The ship must, in all probability, have overset, had not the wind fell suddenly as it arose.

**Journal, 30 Jan 1736:** We had another storm, which did us no harm than splitting the fore-sail. Our bed being wet, I laid me down on the floor, and slept sound till morning.

Finally:

**Journal, 5 Feb 1736:** Between two and three in the afternoon, God brought us all safe into the Savannah river. We cast anchor near Tybee Island, where the groves of pines, running along the shore made an agreeable prospect, showing, as it were, the bloom of spring in the depth of winter.

Wesley had some significant brushes with dangerous windy conditions whilst in America on some of his journeys around the coastline. For instance:

**Journal, 22 Apr 1736:** About four in the afternoon we entered upon Doboy Sound. The wind, which was right ahead of us, was so high, when we were in the middle of it, and the sea so rough, being in at the inlet, that the boat was on the point of sinking every moment. But it pleased God to bring us safe to the other side in half an hour, and to Frederica the next morning.

**Journal, 26 Jul 1736:** My brother and I set out for Charlestown, in order to his embarking for England; but the wind being contrary, we did not reach Port-Royal, forty miles from Savannah, till Wednesday evening. The next morning we left it. But the wind was so high in the afternoon, as we were crossing the neck of St. Helena's sound, that our oldest sailor cried out, "Now every one must take care of himself." I told him, "God would take care of us all." Almost as soon as the words were spoken, the mast fell. I kept on the edge of the boat, to be clear of her when she sunk, (which we expected every moment,) though with little prospect of swimming ashore, against such a wind and sea. But, "How is it thou hadst no faith?" The moment the mast fell, two men caught it, and pulled it into the boat; the other three rowed with all their might, and "God gave command to the wind and seas;" so that within an hour we were safe on land.

On his journey home to England Wesley again hit very high winds which this time he called "a proper hurricane". To be able to survive actual hurricane-force winds would be open to doubt, but if they can be taken at face value, the changes in wind direction he reports on certainly point at least to being beneath an extremely deep and quickly-travelling depression:

**Journal, 13 Jan 1738:** We had a thorough storm which obliged us to shut all close; the sea breaking over the ship continually. I was at first afraid; but cried out to God, and was strengthened. Before ten, I lay down: I bless God without fear. About midnight we were awakened by a confused noise of seas and wind and men's voices, the like of which I had never heard before. The sound of the sea breaking over and against the sides of the ship, I could compare to nothing but large cannon, or American thunder. The rebounding, starting, quivering motion of the ship much resembled what is said of earthquakes. The captain was upon deck in an instant. But his men could not hear what he said. It blew a proper hurricane; which beginning at south-west, then went west, north-west, north, and, in a quarter of an hour, round by the east to the south-west point again. At the same time the sea

running (as they term it) mountain high, and that from many different points at once, the ship would not obey the helm; nor indeed could the steersman, through the violent rain, see the compass. So he was forced to let her run before the wind, and in half an hour the stress of the storm was over.

His trans-Atlantic adventure finally ends with the following account which gives an idea of the problems of relying on sail-power:

**Journal, 29 Feb 1738:** We saw the English land once more; which, about noon, appeared to be the Lizard-point. We ran by it with a fair wind; and at noon, the next day, we made the west end of the Isle of Wight. Here the wind turned against us, and in the evening blew fresh, so that we expected (the tide being likewise strong against us) to be driven some leagues back in the night: but in the morning to our great surprise, we saw Beachy-head just before us, and found we had gone forwards near forty miles. Toward evening was a calm; but in the night a strong north wind brought us safe to the Downs.

Throughout his ministry Wesley made many sea crossings and coastal journeys, especially to and from Ireland. He includes many accounts in his writings, a few of which are given below and paint a vivid picture of the stormy weather and complicated crossings he encountered:

**Journal, 28 Mar - 6 Apr 1750:** About eleven we were called to go on board, the wind being quite fair: And so it continued till we were just out of the harbour. It then turned west and blew a storm ..... We fought our way four or five leagues toward Ireland; but were driven back in the afternoon to the very mouth of the harbour. Nevertheless, the wind shifting one or two points, we ventured out again; and by midnight we were got about half seas over; but the wind then turning full against us, and blowing hard, we were driven back again, and were glad, about nine, to get into the bay once more. .... In the night there was a vehement storm. Blessed be God we were safe on shore!

**Journal, 27-30 Apr 1756:** On our way to Holyhead, one met and informed us, the packet sailed the night before. I said, "Perhaps it may carry me for all that." ..... The packet did sail the night before and got more than half sea-over. But the wind turning against them, they were glad to get back this afternoon. I scarce remember so violent a storm as blew all night long. The wind continued contrary the next day ..... We left the harbour about twelve, having six or seven Officers and an abundance of passengers on board. The wind was full west, and there was great possibility of a stormy night. So it was judged best to put back; but one gentleman making a motion, to try a little longer, in a short time brought us all over to his opinion. So they agreed to go out, and "look for a wind."

The wind continued westerly all night. Nevertheless, in the morning we were within two leagues of Ireland! Between nine and ten I landed at Howth.

**Letter, Bangor Ferry, 15 Oct 1777:** As I believe both you and our friends in Dublin will be pleased to hear of our safe landing, I will first give you a short account of what has befallen us hitherto. We went on board the packet about seven. The wind was full in our teeth and blew high. However, tacking to and fro, by the help of the tide, we got out to sea before noon. When the tide turned against us, we made little way, but beat up and down till night. The wind rising higher and higher, and the sea in proportion, my fellow passengers were all sick: I, by the blessing of God, was not sick at all. However, as I could not read, I lay down about seven, but (which is very uncommon with *me*) could not sleep till past midnight. In the morning, the wind being still very high and directly contrary, we found ourselves out of course, having been driven too far to the southward. But being under the Carnarvonshire shore, we were in tolerably smooth water. About noon, the wind coming a point to the south, we put out to sea again. But the storm increased, and about four carried away our bolt-sprit and tore one of the sails all to bits. The captain and his men with all quietness and composure quickly repaired the loss. And before six, by the good providence of God, we landed safe at Holyhead.

**Journal, 11 Jul 1787:** I went down with my friends, having taken the whole ship, and went on board the Prince of Wales, one of the Parkgate packets. At seven we sailed with a fair moderate wind. Between nine and ten I lay down, as usual, and slept till near four, when I was waked by an uncommon noise, and found the ship lay beating upon a large rock, about a league from Holyhead. The Captain, who had not long lain down, leaped up; and, running upon the deck, when he saw how the ship lay, cried out, "Your lives may be saved, but I am undone!" Yet no sailor swore, and no woman cried out. We immediately went to prayer; and presently the ship, I know not how, shot off the rock, and pursued her way, without any more damage, than the wounding of a few of her outside planks. About three in the afternoon we came safe to Parkgate; and in the evening went on to Chester.

Smaller boats were used for short coastal journeys and estuary crossings which were more susceptible to strong tides or even moderately bad weather which could easily put the lives of travellers in danger, e.g.

**Journal, 6-7 Oct 1758:** I designed to go in a wherry to the Isle of Wight; but the watermen were so extravagant in their demands, that I changed my mind and went in the hoy: And it was well I did; for the sea was so high, it would not have been easy for a small boat to keep above water. We landed at two, and walked on, five little miles, to Newport .....

We hired a small fisher-boat at Wotton-Bridge, there being scarce any wind. But it increased more and more when we were on the sea, which was seven miles over. Our cock-boat danced on the waves, and must have sunk, if one large wave had

come over her: but God suffered it not. We landed in two hours, and walked away to Gosport.

### CALM CONDITIONS

A sailing ship cannot make any progress, and may indeed drift dangerously in any tidal flow, if there is not enough wind for it to make way. Wesley gives examples of this situation, sometimes 'solving' the difficulty through prayer:

**Journal, 15 Apr 1749:** But no sooner were we out of harbour, than it turned south-west and blew a storm. Yet we made forward, and about one o'clock came within two or three leagues of land. The wind wholly failed; a calm suddenly following a storm, produced such a motion as I never felt before. But it was not long before the wind sprung up west, which obliged us to stand away from the Skerries. When we wanted a league of shore it fell calm again, so that there we rolled about till past sunset. But in the night we got back to Dublin Bay.

**Journal, 9 Apr 1785:** Between nine and ten we went on board the Claremont packet: but it was a dead calm till past ten on *Sunday, 10*, when the company desired me to give them a sermon. After sermon I prayed that God would give us a full and speedy passage. While I was speaking the wind sprung up; and in twelve hours brought us to Dublin Bay.

**Journal, 6 Sep 1787:** Went on board with a fair, moderate wind; but we had but just entered the ship when the wind died away. We cried to God for help, and it presently sprung up, exactly fair, and did not cease till it brought us to Penzance Bay.

### POSTSCRIPT

Wesley first visited the South Coast town of Winchelsea in 1771 and went there again on 7 October 1790 to give what turned out to be his very last outdoor sermon. This effectively marked the end of his life as a travelling preacher and observer.

In his diary entry he is however showing some doubts as to the long-term effectiveness of his sermon! :-

"I went over to that poor skeleton of ancient Winchelsea. It is beautifully situated on top of a steep hill, and was regularly built in broad streets, crossing each other and encompassing a very large Square; in the midst of which was a large church now in ruins. I stood under a large tree, on the side of it, and called to most of the inhabitants of the town, 'The kingdom of heaven is at hand: repent, and believe the Gospel.' It seemed as if all that heard were, for the present, almost persuaded to be Christians."

The ash tree concerned stood the test of time until 1927 when, partly due to “depredations of souvenir hunters” it blew down and was replaced by a new tree grown from a sapling of the original where it still stands today.

## REFERENCES

All quotations are taken from:

*Journal* quotations: *The Works of John Wesley*, Methodist Book Room, London 1872 edition, reprinted by Baker Books, Michigan, 2007.

Letters quotations: *The Letters of John Wesley, A.M.*, edited by J.Telford, Epworth Press, London, 1931, 1960 reprint.

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## FURTHER READING

If you have found this occasional paper interesting and would like to read a little more about John Wesley and his life in the eighteenth century, in addition to copies of his *Journal*, here (in date of publication order) are some recent books that can also be readily obtained:

*John Wesley – Travelling Geographer* by Howard Oliver, 2015. Published by Harris Manchester College, Oxford. [information on availability via [shol@waitrose.com](mailto:shol@waitrose.com)]

*Inward & Outward Health – John Wesley’s concept of medical science, the environment and Holy Spirit*, editor Deborah Madden, Epworth, 2008.

*John Wesley, A Brand from the Burning* by Roy Hattersley, Abacus, 2005.

*Wesley Country* compiled by Richard Bewes, Bible Matters with Creative Publishing, 2003.

*On the Trail of John Wesley* by J. Keith Cheetham, Luath, 2003.

*John Wesley, A Personal Portrait* by Ralph Waller, SPCK, 2003.

The following books can be obtained through inter-library loans or as inexpensive second-hand copies.

*John Wesley and his World* by John Pudney, Thames & Hudson, 1978.

*John Wesley in Wales* edited by A. H. Williams, University of Wales, 1971.

*The Wesleys in Cornwall* by John Pearce, Bradford Barton, 1964.

*In the Steps of John Wesley* by Frederick Gill, Lutterworth, 1963.

*Wesley's England* by J. H. Whiteley, Epworth, 1945.

Illustration of John Wesley on Gateshead-Fell is taken from *Wesley his own Biographer*, published by C. H. Kelly, 1891

## APPENDIX

In order to give a more complete picture of John Wesley's scientific interests that lay beyond those that were only weather related, this appendix covers a range of his other physical geography observations published in his Journal.

### GENERAL PHYSICAL GEOGRAPHY OBSERVATIONS BY JOHN WESLEY

#### LANDSCAPE CHANGE

Wesley made comments on the physical geography, both forming processes and appearance, of a range of landscapes that he encountered.

He was very moved by the grandeur and scale of Land's End, though his precise memory failed leading him to a vast over estimate of the amount of erosion that had occurred between his first and last visits:

**Journal, 11 Sep 1743:** We went down, as far as we could go safely, toward the point of the rocks at the Land's-End. It was an awful sight! But how will these melt away, when God arises to Judgement! The sea between does indeed "boil like a pot." "One would the deep to be hoary." But "though they swell, yet can they not prevail. He hath set their bounds, which they cannot pass."

**Journal, 10 Sep 1757:** We rode to the Land's End. I know of no natural curiosity like this. The vast ragged stones rise on every side, when you are near the point of land, with green turf between, as level and smooth as if it were the effect of art.



And the rocks which terminate the land are so torn by the sea, that they appear like great heaps of ruins.

**Journal, 25 Aug 1785:** About nine I preached at Mousehole, where there is now one of the liveliest societies in Cornwall. Hence we went on to the Land's End, in order to which we clambered down the rocks to the very edge of the water. And I cannot think but that the sea has gained some hundred yards since I was here forty years ago.

Also:

**Journal, 28 Jan 1756:** I preached at noon at Dover, to a very serious but small congregation. We afterwards walked up to the castle on top of a mountain. It is an amazingly fine situation; and from hence we had a clear view of that vast piece of the cliff, which a few days ago divided from the rest and fell down upon the beach.

Dramatic real or postulated changes in the fortunes of coastal areas due to sand encroachment were noted on more than one occasion:

**Journal, 21 Nov 1748:** I set out for Leigh, in Essex ... Here was once a deep open harbour; but the sands have long since blocked it up, and reduced a once flourishing town to a small ruinous village.

**Journal, 14 Jul 1777:** In riding along the side of Newport-Bay, I observed on the ground a large quantity of turfs. These are found by removing the sand above the high-water mark, under which there is a continued bed of turf, with roots of trees, leaves, nuts, and various kinds of vegetables. So that it is plain the sea is an intruder here, and now covers what was once dry land. Such probably was the whole Bay a few centuries ago. Nay, it is not at all improbable, that formerly it was dry land from Aberystwith to St. David's Point.

**Journal, 18 Jun 1780:** About noon I preached in the market-place at Wainfleet. Once a large sea-port town, till the harbour was blocked up by sand. We now passed into marshland, a fruitful and pleasant part of the county.

## EARTHQUAKES AND LANDSLIPS

Some of the most dramatic of geological events are earthquakes and Wesley, despite very limited understanding of their processes, took a keen interest in them. He was greatly affected by what he considered to be their theological implications and consequences. He was keen to hear from those who had experienced the events to check on the extent of the quake and consistency of their reports, and, if possible, travel to see the sites for himself:

**Journal, 8 Feb 1750:** It was about a quarter after twelve, that the earthquake began at the skirts of the town. It began in the south-east, went through Southwark, under the river, and then from one end of London to the other. It was

observed at Westminster and Grosvenor-Square a quarter before one. (Perhaps, if we allow for the differences in the clocks, about a quarter of an hour after it began in Southwark.) There were three distinct shakes, or wavings to and fro, attended with a hoarse, rumbling noise like thunder. How gently does God deal with this nation! O that our repentance may prevent heavier marks of his displeasure!

**Journal, 8 Mar 1750:** To-day God gave the people of London a second warning; of which my brother wrote as follows:-

“This morning, a quarter after five, we had another shock of an earthquake, far more violent than that of February 8. I was just repeating my text, when it shook the Foundery so violently, that we all expected it to fall upon our heads. A great cry followed from the women and the children. I immediately cried out, ‘Therefore we will not fear, though the earth be moved, and the hills be carried into the midst of the sea: for the Lord of hosts is with us, the God of Jacob is our refuge.’ he filled my heart with faith, and my mouth with words, shaking their souls as well as their bodies.”

The earth moved westward, then east, then westward again, through all London and Westminster. It was a strong and jarring motion, attended with a rumbling noise, like that of distant thunder. Many houses were much shaken, and some chimneys thrown down, but without any farther hurt.

There is one highly detailed account of a British earthquake in the journal which has subsequently been extensively studied with modern observations confirming the accuracy of his report. Whether the event was indeed of seismic origin or a major landslip is still in doubt. It caused controversy at the time when Wesley’s published account in *the Gentleman’s Magazine* was questioned by another correspondent. This elicited a virulent repost from Wesley “I aver to be punctually true, having been an eye-witness of every particular of it. And if F.D. [the offending correspondent] will set his name, and aver the contrary, I will make him ashamed, unless shame and he have shook hands and parted”.

[A fuller account can be found in ‘John Wesley at Whitestone Cliff, North Yorkshire, 1755’ by Roger G. Cooper (University of York, Borthwick Paper No. 91, 1997)].

Although rather extensive, the majority of Wesley’s account deserves to be reproduced in full as it demonstrate so well the precise physical observations and descriptions he was able to produce.

**Journal, 2 Jun 1755:** On Tuesday, March 25th last, being the week before Easter, many persons observed a great noise near a ridge of mountains in Yorkshire, called Black-Hamilton. It was observed chiefly in the south-west side of the mountain, about a mile from the course where the Hamilton races are run; near a ridge of rocks, commonly called Whiston-Cliffs, or Whitston-White-Mare; two miles from Sutton, about five from Thirsk.

The same noise was heard on Wednesday, by all who went that way. On Thursday, about seven in the morning, Edward Abbot, weaver, and Adam Bosomworth,

bleacher, both of Sutton, riding under Whitston-Cliffs, heard a roaring, (so they termed it,) like many cannons, or loud and rolling thunder. It seemed to come from the cliffs; looking up to which, they saw a large body of stone, four or five yards broad, split and fly off from the very top of the rocks. They thought it strange, but rode on. Between ten and eleven a larger piece of rock, about fifteen yards thick, thirty high, and between sixty and seventy broad, was torn off, and thrown into the valley.

About seven in the evening, one who was riding by observed the ground to shake exceedingly; and soon after several large stones or rocks, of some tons weight each, rose out of the ground. Others were thrown on one side, others turned upside down, and many rolled over and over. Being a little surprised, and not very curious, he hastened on his way.

On Friday and Saturday the ground continued to shake, and the rocks to roll over one another. The earth also clave asunder in very many places, and continued to do so until Sunday morning.

Being at Osmotherly, seven miles from the cliffs, on Monday, June 2, and finding Edward Abbot there, I desired him, the next morning, to show me the way thither. I walked, crept, and climbed, round and over a great part of the ruins. I could not perceive, by any sign, that there was ever any cavity in the rock at all; but one part of the solid stone is cleft from the rest, in a perpendicular line, and smooth, as if cut with instruments: Nor is it barely thrown down, but split into many hundred pieces; some of which lie four or five hundred yards from the main rock.

The ground nearest the cliff is not raised, but sunk considerably beneath the level: But at some distance it is raised in a ridge of eight or ten yards high, twelve or fifteen broad, and near a hundred long. Adjoining to this lies an oval piece of ground, thirty or forty yards in diameter, which has been removed, whole as it is, from beneath the cliff, without the least fissure, with all its load of rocks; some of which were as large as the hull of a small ship. At a little distance is a second piece of ground, forty or fifty yards across, which has also been transplanted entire, with rocks of various sizes upon it, and a tree growing out of one of them. By the removal of one or both of these, I suppose the hollow near the cliff was made.

All round them lay stones and rocks, great and small; some on the surface of the earth, some half sunk into it, some almost covered, in a variety of positions.

Between these the ground was cleft asunder in a thousand places: Some of the apertures were nearly closed again; some gaping as at first. Between thirty and forty acres of land, as is commonly supposed, (though some reckon above sixty,) are in this condition.

On the skirts of these, I observed, in abundance of places, the green turf (for it was pasture land) as it were pared off two or three inches thick, and wrapped round like sheets of lead. A little farther, it was not cleft or broken at all, but raised in ridges five or six foot long, exactly resembling the graves in a church-yard. Of these there is a vast number.

That part of the cliff from which the rest is torn, lies so high and is now so bright a colour, that it is plainly visible to all the country round, even at the distance of several miles. We saw it distinctly not only from the street in Thirsk, but for five or six miles as we rode towards York. So we did likewise in the Great North-Road, between Sandhutton and Northallerton.

Without any knowledge of earthquake mechanisms Wesley then goes on to consider processes involving fire, water or air as the natural cause of the event but could not reach a definite solution. He consequently concludes with the following explanation:

What then could be the cause? What, indeed, but God who arose to shake terribly the earth; who purposely chose such a place, where there is so great a concourse of Nobility and Gentry every year; and wrought in such a manner, that many might see it and fear; that all who travel one of the most frequented roads in England, might see it, almost whether they would or no, for many miles together. It must likewise for many years, maugre all the art of man, be a visible monument of His power; all that ground being now so encumbered with rocks and stones, that it cannot be either ploughed or grazed. Nor will it serve any use, but to tell all that see it, Who can stand before this great God?

**Journal, 18 May 1757:** I rode in the afternoon to Halifax, over the huge, but extremely pleasant and fruitful, mountains to Heptonstall ... Here I was informed of the earthquake the day before. – On Tuesday, May 17, many persons in several parts, within five or six miles, heard a strange noise under the ground, which some compared to thunder, others to the rumbling of carts. Quickly after they had felt the earth rock under them, and wave to and fro. Many who were within doors heard their pewter and glass clatter; many in the fields felt the ground shake under their feet; and all agreed as to the time, though they knew nothing of each other's account.

**19 May:** [at Haslingden] Here I learned that the earthquake observed near Heptonstall had been sensibly felt by very many persons from Bingley, three miles eastward of Kieghley, to the neighbourhood of Preston. It was every where preceded by a hoarse rumbling, about three o'clock; so that in a few minutes it had run east to west, between fifty to sixty miles.

**Journal, 3 Sep 1757:** [at St Agnes] Some who live here gave me an account of the earthquake on July 15. There was first a rumbling noise under the ground, hoarser and deeper than common thunder. Then followed a trembling of the earth, which afterward waved once or twice to and fro so violently that one said he was obliged to take a back-step, or he should have fallen down; and another, that the wall against which he was leaning seemed to be shrinking from him.

Early in 1768 witnesses of the catastrophic great earthquake of Lisbon had reached Britain:

**Journal, 8 Feb 1768:** He was at Lisbon during the great earthquake, just then sitting in his night-gown and slippers. Before he could dress himself, part of the house he was in fell, and blocked him up. By this means his life was saved; for all who had run out were dashed to pieces by the falling houses.

In common with many in England, he was greatly affected by the Lisbon disaster in which tens of thousands were probably killed. In his subsequent sermon "On the cause and cure of earthquakes" Wesley returns to the theme in his 1755 entry blaming the wrath of God induced by the sin of the populus on the events.

This last earthquake extract graphically describes both its effects on the landscape and their dramatic hydrological consequences:

**Journal, 9-10 Jul 1773:** I went, by moderate stages, from Liverpool to Madeley; where I arrived on Friday 9. The next morning we went to see the effects of the late earthquake: Such it undoubtedly was. On Monday, 27, at four in the morning, a rumbling noise was heard, accompanied with sudden gusts of wind, and wavings of the ground. Presently the earthquake followed, which only shook the farmer's house, and removed it entire about a yard; but carried the barn about fifteen yards, and then swallowed it up in a vast chasm; tore the ground into numberless chasms, large and small; in the large, threw up mounts, fifteen or twenty feet high; carried an hedge, with two oaks, above forty feet, and left them in their natural position. It then moved under the bed of the river; which making more resistance, received a ruder shock, being shattered in pieces and heaved up about thirty feet from its foundations. By throwing this, and many oaks, into its channel, the Severn was quite stopped up, and constrained to flow backward, till, with incredible fury, it wrought itself a new channel. Such a scene of desolation I never saw. Will none tremble when God thus terribly shakes the earth?

As this last extract shows, as late in his life as his last year of preaching travels, Wesley was still a keen observer of landscape change - in this case what he considered an advantageous one!

**Journal, 18 Jun 1790:** I preached at Stokesley in the morning; and then went on to Whitby. It was very providential, that part of the adjoining mountain fell down, and demolished our old preaching-house, with many houses besides; by which means we have one of the most beautiful chapels in Great Britain, finely situated on the steep side of the mountain.

## GENERAL LANDSCAPE GEOLOGY

Throughout his travelling life Wesley had a keen interest in detailing the physical attributes of the landscape, either seen first hand or read about in books – sometimes also using them to illustrate aspects of the power of God. Descriptions of such places - sometimes showing his lack of knowledge of true comparative heights of various land forms - include:

**Journal, 10 Dec 1735:** We sailed from Cowes, and in the afternoon passed the Needles. Here the ragged rocks, with the waves dashing and foaming at the foot of them, and the white side of the island rising to such a height, perpendicular from

the beach, gave a strong ideas of “Him that spanneth the heavens and holdeth the waters in the hollow of his hand!”

**Journal, 15 Sep 1755:** [at Cubert, Devon] We walked an hour near the sea-shore, among those amazing caverns, which are full as surprising as Poole’s Hole, or any other in the Peak of Derbyshire. Some part of the rock in these natural vaults glitters as bright and ruddy as gold: part is a fine sky-blue; part green; part enamelled, exactly like mother-of-pearl; and a great part, especially near the Holy Well, (which bubbles up on the top of a rock, and is famous for curing either scorbutic or scrofulous disorders,) is crusted over, wherever the water runs, with an hard, white coat, like alabaster.

**Journal, 12 Jul 1762:** I went to Dunmore-Cave, three or four miles from Kilkenny. It is full as remarkable as Poole’s Hole, or any other in the Peak. The opening is round, parallel to the horizon, and seventy or eighty yards across, In the midst of this, there is a kind of arch, twenty or thirty feet high. by this you enter into the first cave, nearly round and forty or fifty feet in diameter. It is encompassed with spar stones, just like those on the sides of Poole’s Hole. On one side of the cave is a narrow passage, which goes under the rock two or three hundred yards; on the other side, an hollow, which no one has ever been able to find an end of. I suppose this hole too, as well as many others, was formed by the waters of the deluge, retreating into the great abyss, with which probably it communicates.

**Journal, 16 Jun 1766:** I took a view of one of the greatest natural curiosities in the kingdom; what is called Arthur’s seat; a small, rocky eminence, six or seven yards across, on the top of an exceeding high mountain, not far from Edinburgh. The prospect from the top of the castle is large, but it is nothing in comparison with this.

**Journal, 14 May 1770:** After ten year’s enquiry, I have learned what are the Highlands of Scotland. Some told me, “the Highlands begin where you cross the Tay;” others, “when cross the North Esk;” and others “when you cross the river Spey:” But all of them missed the mark. For the truth of the matter is, the Highlands are bounded by no river at all, but by Carns, or heaps of stones, laid in a row, south-west and north-east, from sea to sea. These formerly divided the kingdoms of the Picts from that of the Caledonians, which included all the country north of the Carns; several whereof are still remaining. It takes in Argyleshire, most of Perthshire, Murrayshire, with all the north-west counties. This is called the Highlands because a considerable part of it (though not the whole) is mountainous. But it is not more mountainous than North-Wales, nor than many parts of England and Ireland: Nor do I believe it has any mountain higher than Snowdon hill, or the Skiddaw in Cumberland. Talking Erse (*Gaelic*), therefore, is not the thing that distinguishes these from the Lowlands. Neither is this or that river; both the Tay, the Esk, and the Spey running through the Highlands, not south of them.

**Journal, 6 Jun 1778:** I was desired to take a ride to the celebrated Giant's Causeway. It lies eleven English miles from Coleraine. When we came to the edge of the precipice, three or four poor boys were ready to hold our horses, and show us the way down. It being dead low water, we could go anywhere, and see everything to the best advantage. It is doubtless the effect of subterraneous fire. This manifestly appears from many of the stone which composed the pillars that are now fallen down: these evidently bear the mark of fire, being burnt black on one or other surface. It appears likewise from the numerous pumice-stones scattered among the pillars: Just such pillars and pumices are found in every country which is, or ever was, subject to volcanoes.

**Journal, 12 May 1779:** After preaching at Cuthburton and in Teesdale, I went a little out of my way, to see one of the wonders of nature. The river Tees rushes down between two rocks, and falls sixty feet perpendicular into a basin of water, sixty feet deep.

Wesley was a voracious reader of all kinds of books, whether when he was indoors or on the move. These sometimes included topics within physical geography, and he occasionally included comments on what he had read within his journal which demonstrate the very limited real knowledge of many subjects that existed in his time. For instance:

**Journal, 28 Jul 1756:** I read Mr Barton's ingenious 'Lectures on Lough-Neagh', near Lurgan, which turns wood into stone, and cures the King's evil, and most cutaneous distempers. Under part of this lake first there is a stratum of firm clay, and under that stratum of trees four foot thick, all compacted into one mass, doubtless by the pressure of the incumbent earth, (perhaps water too) which it has probably sustained ever since the General Deluge.

**Journal, 17 May 1768:** I looked over Dr. Shaw's Travels: Great part of them is very dull and unentertaining; but some remarks are extremely curious. I was a little surprised at one of them; namely, that the celebrated Mount Atlas is not higher than many of our English mountains, and nothing near so high as the Alps. But it was much farther from Rome: So travellers might make it as high as the moon; and few in Italy would contradict them.

**Journal, 17 Jan 1770:** In a little journey, which I took into Bedfordshire, I finished Dr Burnet's *Theory of the Earth*. He is doubtless one of the first-rate writers, both as to sense and style; his language is remarkably clear, unaffected, nervous and elegant. And as to his theory, none can deny that it is ingenious, and consistent with itself. And it is highly probable, 1. That the earth out of the chaos in some such manner as he describes: 2. That the antediluvian earth was without high or abrupt mountains, and without sea, being one uniform crust enclosed by the great abyss: 3. That the flood was caused by the breaking of this crust, and its sinking into the abyss of waters: And, 4. That the present state of the earth, both internal

and external, shows it to be the ruin of the former earth. This is the substance of his two former books, and this far I can go with him.

### UNUSUAL ENVIRONMENTAL EVENTS

Wesley occasionally reported unusual extreme weather events he had become aware of. During one visit to Cornwall he collected two such reports, of tornado/water-spouts, which had caused considerable consternation and damage:

**Journal, 15 Sep 1760:** I inquired concerning the uncommon storm, which was here on March 9, the last year. It began near the Land's End, between nine and ten at night, and went eastward not above a mile broad, over St. Just, Morva, Zennor, St. Ives, and Gwinear, whence it turned northward, over the sea. It uncovered all the houses in its way, and was accompanied with impetuous rain. About a mile south-east from St. Ives, it tore up a rock, twelve or fourteen ton weight, from the top of a rising ground, and whirled it down upon another, which it split through, and at the same time dashed itself in pieces. It broke down the pinnacles of Gwinear church, which forced their way through the roof. And it was remarkable, the rain which attended it was as salt as any sea-water.

**Journal, 17 Sep 1760:** At noon I preached on the cliff near Penzance, where no one now gives an uncivil word. Here I procured an account, from an eye witness, of what happened on the twenty-seventh of last month. A round pillar, narrowest at the bottom, of a whitish colour, rose out of the sea near Mousehole, and reached the clouds. One who was riding over the strand from Marazion to Penzance saw it stand for a short space, and then move swiftly toward her, till the skirt of it touching her, the horse threw her and ran away. It had a strong sulphurous smell. It dragged with it abundance of sand and pebbles from the shore; and then went over the land, carrying with it corn, furze, or whatever it found in its way. It was doubtless a kind of water-spout; but a water-spout on land, I believe, is seldom seen.

In 1757 he reports on exceptional damage to vegetation done by "burning winds" – presumably not only extremely strong, but exceptionally dry and perhaps salty:

**Journal, 24-5 May 1757:** We rode from Keswick to Whitehaven ..... I was surprised to see, not only hedges and shrubs without a green leaf upon them, but abundance of trees likewise naked as in the depth of winter. Upon inquiring, I found that some time before, a violent wind had gone through all these parts, which not only threw down chimneys, walls, and barns, and tore up trees by the roots, but scorched everything green it touched as with fire, so that all the leaves immediately fell off, and not only bushes and fruit trees, but elms, oaks and firs, withered away to the very roots.



**Journal, 7 & 15 Sep 1757:** (*near Camborne*) I observed more and more the effects of that burning wind which was in these parts on Sunday, the 28th of last month. It not only scorched all the leaves of the trees, so as to bring mid-winter upon them in two hours, but burned up all the leaves of potatoes and cabbage, and every green thing which it touched! What a mercy that it did not come a month sooner! Then it would have left little work for the reapers.

As we rode toward Helstone, I think the sun was near as hot as it was at midsummer; yet all along the trees looked as in the depth of winter, that scorching wind having destroyed all it touched.

In the eighteenth century the Aurora (Northern Lights) tended to be thought of as exceptional meteorological phenomena by scientists and often as a portent of impending disaster or divine judgement by many of the general population. Wesley occasionally reported them among all his other records of unusual events:

**Journal, 11 Oct 1752:** I rode to Cork once more, and was very fully employed all the day. The next morning we returned to Cove, and about noon got out of the harbour. We immediately found the effects of the late storm, the sea still boiling like a pot. The moon set about eight, but the Northern Lights abundantly supplied her place.

**Journal, 24 Oct 1769:** [at Northampton] This evening there was such an Aurora Borealis as I never saw before: The colours, both the white, the flame-colour, and the scarlet, were so exceeding strong and beautiful. But they were awful too: So that abundance of people were frightened into many good resolutions.