



tedious to be read at the Societies Meetings; I therefore desire the following Extract may be acceptable.

Mr. *Confett*, from the beginning noteth down the Barometrical Variations, but I know not his Divisions, and Degrees, 'till *Decemb.* 18, at 3<sup>h</sup>. p. m. and then the Barometer was at 30.66 Wind N E<sup>r</sup>. and Fair.

From *Novemb.* 24 to the End of the Month, the Weather was Cloudy, with Snow, and a deep Snow on the last Day, and Fair on the 28th. The Winds were Easterly and N E. of 2 and 3 Degrees Strength, 'till the 29th and 30th, and then S E<sup>r</sup>. S<sup>r</sup>. and S W<sup>r</sup>.

In *Decemb.* it was Cloudy, with some Snow, 'till *Dec.* 8, and 9, which were fair Days. Then Cloudy on the 10th and 11th, and Rain in the Evening. Afterwards some cloudy and moist Air; some Fair, 'till *Dec.* 23, and then Hail; Wind S W<sup>r</sup>. The next Day Snow; and the rest of the Month some Cloudy and Dark, with Snow, and some Fair. The Barometer, ever since the 18th, hath been above 30 Inches, and on *Dec.* 26, it was 30.84; on *Dec.* 30, 30.96, and 31.00; and lastly on *Dec.* 31, it was 31.12,

In *Jan.* 172<sup>d</sup>, on the 3d Day, the Barometer was at 30.65, on the 4<sup>th</sup> before Noon 31.32, after Noon 31.36, but on the 5th it was in the Afternoon 31.59, the Wind S W<sup>r</sup>. and cloudy Weather, which is the highest Range of the Quick-silver in all the Observations, and if I mistake not, the highest I ever met with any where, and at any time. On the other Hand, the lowest Range was on *February* 25, at 28.28; Wind W<sup>r</sup>. and Snow. The Barometer was above 30 Inches all the Beginning of *Jan.* 'till the 18th, and then it gradually fell to 28.36. The Winds,

Winds, for the most part, were in some Westerly Point: 'till *Jan.* 11, and then S E<sup>2</sup>. with Fair, and an hard Frost for a Week; the Weather, before the 11th, being Cloudy and Moist, with some Snow now and then, and a little Rain on *Jan.* 1. All the rest of *Jan.* was, for the most part, Cloudy with Snow, and but little Fair, and that attended with Frost.

In *Feb.* the Barometer continued high, until, by a gradual Descent, it came to 28.98, on *Feb.* 15, and 17; Wind Westerly 3. and 4. But on *February* 25, it fell to 28.28; Wind W<sup>4</sup>, and is abovementioned. The greatest Part of this Month the Weather was cloudy, and sometimes with thick Darkness, frequent Snow, and now and then Fair, with sharp Frost.

All *March* the Barometer was above 29 Inches, sometimes above 30. The greatest Part of the Month was Cloudy, with frequent Snow, and some Fair, with sharp Frosts; the Winds were variable, and their Strength about 1 and 2 Degrees all the Month, and seldom at 3 Degrees, nor Calm at any time.

All *April* the Barometer was above 29 Inches, and under 30. In the Beginning of the Month Snow and Cloudy, with some Fair, and sharp Frosts, 'till *Apr.* 13, when Mr. *Conssett* saith, the continual Winter-Frosts were thawed; and that on the 15th they left off their Fires in their Stoves. After this, some Cloudy, some Rain, and some Fair; the Winds were variable, commonly 1 and 2 Strength, now and then 3, and not any Day 0.

From *Apr.* 16, he observed the Thermometer; which being one made by Mr. *Haukesbee* stood at 51, which is between cold Air, and Temperate; the freezing Point being at 65; it then rose for some Days to 46, and 40, 'till on the 22d it was at 36, and towards the End of the Month it fell again to 47. All

All *May* the Range of the Barometer was between 28 and 29 Inches; and for the most part above 29.50. The Thermometer was on the 1st Day at 52.8, and continued rising to 50 on the 7th, where it stood to about the 14th, and then arose to 40 for the following Days, being at 40.25 on the 17th in the Morning, Wind S<sup>2</sup>. and fair, when in the Evening of the same Day it arose to 30.34, Wind W<sup>2</sup>. with Rain; it soon got down again to 40 for several Days; but from the 27th to the End it was about 30.50. This Month had much more Fair than any of the preceding Months, together with some Cloudy with Showers, and some heavier Rain.

In *June* the Range of the Barometer was (as in the last Month) between 28 and 29 Inches, but more frequently under 29.50 than it was in that Month. The Thermometer was all this Month between 40 and 41, only on the 1st, 2d, 3d, 8th, 11th, 13th, 23d Days, it was a little above 31, but never so high as 30, which is between warm Air, and Hot. On *June* 2, Rain fell with Hail. And (as I have observed in some of these Papers) that *Cold in Summer produces Rain*, so much Rain fell on *June* 5; after which, some Cloudy, with frequent Showers, and many Days fair, to *June* 23, on which the Observations end.

Thus I have given an Abstract of the *Meteorological Observations* at *Petersburgh*, and have taken what Care I could to note such Matters as may give the Society a just Notion of the State of every Month at that Place, and that which was most observable in it. I could wish, that either the Society, or I myself could have had some Observations in the more Southerly Parts, to have tallied with these.

## A P P E N D I X

To the foregoing Observations, being Meteorological Observations at Lunden in Sweden, in the Year 1724, which tally with Mr. Confett's.

These Observations not coming to Hand 'till I had finished those at *Petersburgh*, I am forced to subjoin them by way of Appendix; and the 1<sup>st</sup> Observation I shall make, shall be of the Range of the *Mercury* in the *Barometer*, which seems to be different in both Places, as far as I can judge of the Matter, by the few Observations that tally with one another, which is only from *December* 18, to the End of that Month, Mr. *Confett's* Barometrical Divisions before that time not being intelligible: And in all that Fortnight's time, the *Petersburgh* Barometer was above 30 Inches, and once above 31; whereas that at *Lunden* was but a little above 29, and but once at 29.6: And indeed, through the whole Year, the *Lunden* Barometer, I observe, was only now and then below 29 Inches, and much seldomer above 30. But I shall perhaps be better able to give an Account of these Matters when I come to the Observations of future Years.

2. As I have taken Notice in other Places, so I find in these Observations a great Conformity between the Winds, especially when strong for some time, and when they have been for some time in or near the same Quarter.

3. As for the *Weather*, no good Judgment could be made of it in the Space of five Weeks, which is all the time in which the Observations tally: Only I take Notice that Thunder was more frequent at *Lunden* than *Petersburgh* during that time.

*An Abstract of the Meteorological Observations of the whole Year 1724, made at Lunden in Sweden. By ———: Abridged for the Use of the Royal Society. By Wm. Derham, F. R. S.*

Having taken Notice of the Observations in 1724, that tally, I proceed to the whole Year's Observations of *Lunden*.

I begin with the *Barometrical Ranges*, which will be best seen and compared by these two little Tables; the first of which is, in part, the curious Author's, *viz.* the mean Heights of the *Mercury*; to which I have added the highest and lowest Ranges in each Month. And because it will take up but little Room, I have added the Author's Mean of his Thermometrical Observations, although, I confess, I scarce understand the Divisions of his Thermometer.

The Highest and Lowest Ranges of the Barometer, and the Mean of the Barometer and Thermometer at <i>Lunden</i> , in the Year 1724.						
	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May</i>	<i>June</i>
High	29. 8	29. 9	30. $\frac{1}{2}$	30. $\frac{1}{2}$	29. 9	29. 9
Mean	29. 3	29. 2	29. 4	29. 6	29.4 $\frac{1}{2}$	29. 4
Low	28. 8	28. 6	28. 8	29.1 $\frac{1}{2}$	29. 0	28. 9
Therm.	24.i	37.i	21.i	6 $\frac{1}{2}$	13.s	45.s
	<i>July</i>	<i>Aug.</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
High	29. 7	29. 9	29. 9	30. $\frac{1}{2}$	30. $\frac{1}{2}$	30.1 $\frac{1}{2}$
Mean	29.2 $\frac{1}{2}$	29.5 $\frac{1}{2}$	29. 3	29. 5	29. 5	29.2 $\frac{1}{2}$
Low	28. 8	29.2 $\frac{1}{2}$	28. 7	29. $\frac{1}{2}$	28. 9	28. 3
Therm.	34.s	23.s	1 $\frac{1}{2}$	15. i	30. i	43. i.

The

The Barometrical Heights at <i>Petersburgh</i> , A. D. 1724 and 1725.							
	<i>Dec.</i>	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May</i>	<i>June</i>
High	31.12	31.59	30.36	30.35	29.87	29.99	29.81
Mean	30.61	29.97	29.32	29.76	29.57	29.67	29.45
Low	30.11	28.36	28.28	29.18	29.28	29.35	29.10
The Heights of the Thermometer.							
High	—	—	—	—	36.0	30.34	30.70
Mean	—	—	—	—	45.0	40.98	40.0
Low	—	—	—	—	54.7	52.8	40.63

By comparing these two Tables together, it is manifest that the *Mercurial Ascents* are much greater at *Petersburgh* than at *Lunden*, and that the *Descents* are nearly the same; so that the Range of the Barometer at *Petersburgh* is 3 Inches, 31 hundredth parts; but at *Lunden* only 1 Inch, and about 8 Tenths. And the greatest Height of the Thermometer at *Petersburgh*, was on *May 17*, 30.34.

*Of the Winds and Weather at Lunden, in 1724.*

In *Jan.* the Winds were, for the most part, about the Westerly and Southerly Points, and frequently very boisterous. The Weather was some Cloudy, some Fair, frequent Rain, but no Cold taken notice of 'till *Jan. 30*.

In *Feb.* the Winds frequented the same Points as in *Jan.* but they lay more between the N. and E. than then; and they were very boisterous oftentimes. In this Month Snow was frequent, and now and then Thunder, and but little Fair Weather.

In *March* the Winds were very variable, and sometimes strong. The Weather more serene than before,

with sometimes Snow, and towards the latter End Rain, and now and then a Frost.

In *April* the Winds were more Northerly and Easterly than in *March*, and not very strong. The greatest Part of the Month was Freezing, and Fair, with some Days of Rain with Thunder.

The Beginning of *May* to the 16th the Mornings were Frosty, with some Rain, some Snow, and some Fair the rest of the Day; after the 16th some Rain and some Snow; and towards the End of the Month Fairer. The Winds were variable, brisk, and about the 23d, 24th, and 25th, stormy.

In *June* the Winds variable, pretty brisk, and stormy on the 10th, 11th, and 12th; then the Weather for the most part Fair 'till the 15th; after that Cloudy, and but little Fair, with frequent and plentiful Rain.

*July* also was a Cloudy, Wet Month, with but little Fair, and some Thunder, which was sometimes violent. The Winds, for the most part, were between the W. and S. and moderate.

In *August* the Winds were more Northerly and Easterly than in *July*, and sometimes between the West and South, and moderate in all the Points. The first 9 or 10 Days were, for the most part, Fair; after that, 9 or 10 Days, more Cloudy, Rain, Lightning in the Evening, loud Thunder and Rain in the Day, and some in the Night; and from the 20th to the Month's End Fairer, with Cloudy, Hail, and Rain.

In *Sept.* the Winds frequented the Northerly and Westerly Points, were Brisk, and sometimes Stormy; the Mornings, for the most part, Cloudy the 9 first Days, and Fairer the rest of the Day. The greatest part of the rest of the Month was Rainy, with plenty of  
Snow



Snow on the 25th; then Rain, which continued in the Month of

*October* during the 9 first Days; the rest of the Month was Cloudy, with now and then Hoar-Frosts, and some Fair. The Winds varied often, but were the most frequent in some of the Southerly and West-erly Points, and not very high.

In *November* the Winds were sometimes in the Westerly and Southerly Points, but more frequent in the Northerly and Easterly, for the most part of a moderate Strength. The 9 first Days the Weather was Cloudy, then Snow and Frost to the 17th; then to the End Cloudy, Snow, Hoar-Frost, Rain, and but little Fair, and that in the Morning.

In *December* the Winds were moderate, and often in the Southerly and S W. Points, seldom North-erly. The 5 first Days were Cloudy and Wet; then Snow and Frost the 6th, 7th, and 8th; then Cloudy to the 13th; then Hoar-Frost, and Fair on the 14th, 15th, and 16th; then Cloudy, with Thunder, Rain, Snow, and Frost, at diverse times, in the rest of the Month.

III. *An Account of the damp Air in a Coal-Pit of Sir James Lowther, Bart. sunk within 20 Yards of the Sea; communicated by him to the Royal Society.*

**S**IR *James Lowther* having Occasion to sink a Pit very near the full Sea-Mark, for the draining one of his principal Collieries near *Whitehaven*, in the County of *Cumberland*, which was known would