

The eruption of Laki

The Quern-Dust Calendar — Ragnall MacilleDhuibh

NEARLY nine years ago now, on 25 March 1988, I wrote here about *Bliadhna an t-Sneachda Bhuidhe*, ‘the Year of the Yellow Snow’. Well enough known as an expression, at least in the northern half of the Highlands and Islands, and traditionally remembered as a famine year, but when was it? Alexander Carmichael made it 1829, and so did D A MacLean of Staffin. Andrew Cumming of Strathnairn made it 1827. But, as I pointed out, the poet Iain mac Mhurchaidh was said in his native Kintail to have composed a song *O far a-nall am botal* after the terrible losses of *Bliadhna an t-Sneachda Bhuidhe*, and he was dead by 1784.

That drew my attention to 1783, which was most emphatically a famine year in the Highlands. There had been an almost total failure of the harvest of 1782, and there was widespread distress. But why should snow be yellow?

I felt I had found my breakthrough when reading a book called “Climate, History and the Modern World” by H H Lamb. This was what caught my eye: ‘In Scotland the harvests of 1781 and 1782 were a faint reminder of the evil experiences of the 1690s, 1709 and around 1740-2, sufficient to give a spurt to emigration. In 1781 the summer was cold and too dry for the grass or corn to grow, and 1782 was such a cold backward season in Stirlingshire that the unripened corn was buried by snow on 31 October. 1783 was not much better because of the haze of dust which obscured the sun for three weeks and the sulphurous fog from the great volcanic eruptions in Iceland in May and June of that year, though the summer was hot in England. Some of the ash-fall damaged the crops in Caithness, in the north of Scotland.’

I wrote to Professor Lamb, and this was his reply. ‘I would not expect Icelandic volcanic dust to produce a yellow coloration. It *is* possible, because of the SO² in volcanic emissions, but most Icelandic dust is black — even when deposited as far away as Finland. Yellow rain and yellow snow are more likely to be associated with Saharan dust.’

I concluded my article like this: ‘Could black ash falling on (or with) white snow turn it the dirty yellow colour we associate with the refuse of the snowplough?’

I had also asked Professor Lamb about his sources for the Caithness statement, and all he was able to remember was that they were ‘mainly Icelandic’. Thanks in the first instance to Mary Beith, however, I now at least know a lot more about the eruption of 1783, and that is what I intend to talk about now. Whether this was indeed the Year of the Yellow Snow, I still don’t know.

Laki is, or was, a small hill in the south of Iceland, lying between the snow-covered mass of Skaptarjökull and the sea. Early in June 1783 there began the greatest outpouring of lava known in history. The lava spilled out from many points along an old fissure twenty-five kilometres long. Such fissures are apparently quite common in Iceland and are identifiable as clefts, known as *gyas*, which are from one to three yards wide, of indefinite depth, and as much as a hundred kilometres long. The *gya* at Laki contained a long line of about a hundred eruption points, running northeast-southwest, and was totally straight except that it made a little bend in the middle around the hill itself.

Until late July 1783 the eruption points were south-west of Laki, and at one time twenty-two columns of fire were seen. The noise was like a huge waterfall. Then late in July the north-east part of the line became active, and the eruptions continued until January 1784.

Cones of ash were formed, some as much as a hundred metres high, and the lava covered the land like a water flood. It descended two river valleys, and spread out on the lowlands to within eight kilometres of the shore. The western flow travelled eighty kilometres.

The effects of the ash on life in Iceland were catastrophic. Nine farms were entirely wiped out, twenty-nine more were ruined, and two parishes were rendered uninhabitable for two years. The meadows were devastated, and a large number of animals died of starvation and disease. According to reliable sources the loss of animals during the years 1783-1784 was: 11,461 head of cattle, 190,448 sheep and 28,013 horses. These figures represent 53 per cent of the island’s cattle, 77 per cent of the ponies and 82 per cent of the sheep.

Next year’s inevitable famine killed 9,283 people, or 19 per cent of the entire population of Iceland. Only 40,000 were now left. Nor do eruptions as massive as that of Laki come by themselves. In 1784, the famine year, an earthquake — also in southern Iceland — destroyed sixty-nine farmsteads totally, wrecked sixty-four, and seriously damaged 372. Of houses 1,459 were levelled to the ground, 212 were wrecked, and 333 were seriously damaged.

Laki was in fact only the culmination of a century of misery. In 1693 Hekla had erupted for the sixteenth time, depositing ash all over Iceland and as far as Scotland and Norway. Bad seasons, famine, epidemics and volcanic eruptions came thicker and faster. Magnus Stephensen wrote: ‘Iceland experienced forty-three years of distress due to cold winters, ice-floes, failures of fisheries, shipwrecks, inundations, volcanic eruptions, earthquakes, epidemics and contagious diseases among men and animals, which often came separately, but often in connection with and as a result of one another.’

It has been estimated that in the years 1752-9 between 9,000 and 10,000 people died in Iceland of famine and the resulting epidemics. Sheep scab, introduced by some Spanish rams which had been imported to improve the stock, had begun in 1761 and had only been stopped by the slaughter of all the affected animals in 1772-9.

Generally speaking, the condition of this once proudly independent people was appalling. Iceland, like Norway, was part of the kingdom of Denmark, and the Icelanders can be compared to the Irish at the same time. Knut Gjerset, in his "History of Iceland", wrote: 'The Icelandic peasants bore their wretched lot with great patience and fortitude. Though complaints were often heard, they scarcely ever resisted their landlords or failed in the performance of the duties imposed upon them. But their hopeless condition destroyed their optimism and spirit of enterprise. Since various calamities had reduced them to abject poverty, and since the system of landownership made it impossible for them to own their houses or the soil they tilled, they lost all hope of accomplishing anything but keeping themselves and their families alive.'

So what was to happen? The Icelanders seemed to be facing complete extinction. A committee was appointed in Copenhagen to devise means for relief. Large sums of money were collected. Cargoes of provisions and building material were sent to Iceland. Two ships were set aside to transport necessary articles for the sufferers. The government also provided credit for the people with the merchants in the Icelandic towns. The plan was even considered of removing the entire population from Iceland, and colonizing them on the heaths of Jutland.

In this crisis the weakness and inefficiency of the government administration became painfully evident — of the 40,000 rigsdaler collected as a relief fund only a quarter was ever used for the purpose for which it had been contributed. In other words, there was little hope of improvement till Iceland could control her own affairs, a control she struggled to gain in the nineteenth century, and indeed it was the mid-1800s before Iceland recovered from its misfortunes.

Regarding effects further afield, fine dust from the eruption caused peculiar refraction effects in the air and gave brilliant sunsets across the whole of Europe to North Africa and western Asia. The sulphurous atmosphere smelt noxious, made the eyes smart and damaged plants in Holland. In the south of France, because of the density of the upper haze, the sun was not visible in June 1783 until it was 17° above the horizon. Throughout Europe grassland was blackened and scorched grassland and trees shed their leaves.

Professor Lamb points out, too, that globally the few years from 1783 were marked by an exceptional amount of volcanic dust in the high atmosphere — apart from Laki, there was a major volcanic eruption in August of the same year in Japan. 'Whether or not this was the whole reason,' he says, 'it was certainly a decade of abnormal climate and wind circulation.'

In Iceland today, the main south coast road passes through the lava field of Laki. The huge lumps of lava are green with moss and lichen. An area further inland called the Brunasandur was once a desert covered by ever-changing glacial streams flowing through gravel, but the eastern lava flow, from Laki, the Brunahraun, diverted these rivers to the east, and the Brunasandur since then has been watered by a small number of regular streams coming from the front of the lava. The Brunasandur is thus now meadowland with plenty of pasture for sheep and cattle, and supports several farmsteads.

So much for Laki. But what of famine in the Highlands? That is something for me to look at next time.

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