CHAPTER 1

Introduction: From Lake to Lemon Squash

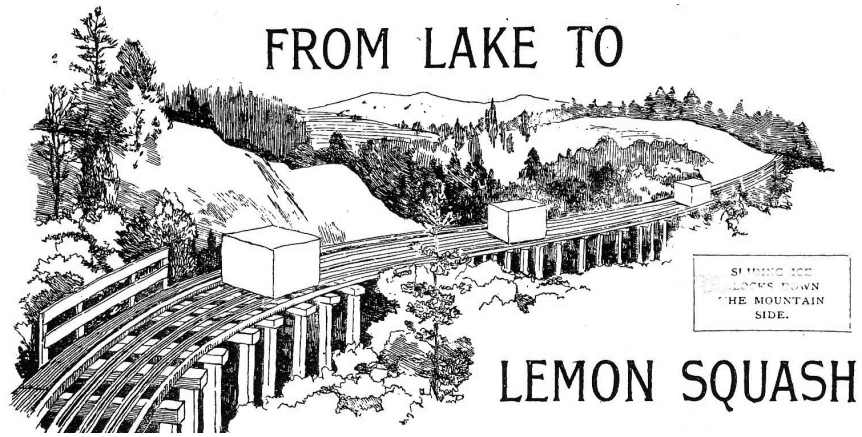

Figure 1.1. Illustration from *Harmsworth Magazine* (Bodleian: Per 2705 d.85/7 p. 17).

In its August number of 1901, the *Harmsworth Magazine* suggested to its British readers that, if the heat was oppressive and you were consumed by a fiery thirst, you would do best to go to your ice block and chip off sufficient to fill half a large tumbler. You then squeezed over this the juice of a whole lemon, added a teaspoonful of powdered sugar and, finally, filled the tumbler with soda water and stirred. What you had made was lemon squash. Drunk through a straw, this was reckoned at the time to be one of the most effective of all thirst-quenching beverages. In hot weather, in the 'dog days' of a July or an August, it was as indispensable as claret cup or ice cream.[1]

1 'From Lake to Lemon Squash: How Norway Lowers Britain's Temperature', *Harmsworth Magazine* VII (1901), pp. 17–21.

Ten years before, lemon squash had hardly been known as a cooling drink in a British summer. What had transformed its use and popularity was the enormous development of the country's ice import trade. In London, the volume of ice landed grew twice over between 1888 and 1900, reaching some 200,000 tons.[2] The ice came almost exclusively from the lakes and fjords of south and south-west Norway, and the August 1901 issue of the *Harmsworth Magazine* took as its task the tracing of the progress of the crystal-clear ice blocks cut from the frozen lakes above the fjords in winter to the tumbler of lemon squash (see figure 1.2) that you savoured on a hot summer afternoon.

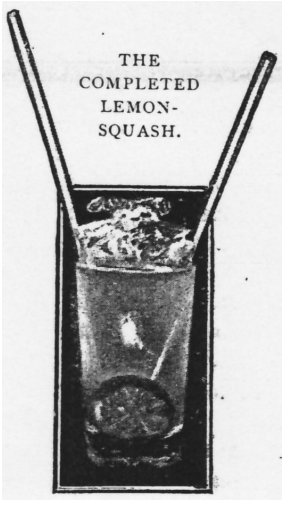

Figure 1.2. Illustration from *Harmsworth Magazine* (Bodleian: Per 2705 d.85/7 p. 21).

In today's age of automatic mechanical refrigeration, it is hard to conceive of an era when the primary means of cooling or freezing was by means of natural ice. Moreover, as an article of consumption, ice became, during the late Victorian period, a necessity of much everyday life. Food distribution, for example, increasingly relied upon it, with leading railway companies of the day constructing specially insulated meat and fish vans to handle the traffic. These vehicles all had carefully arranged ice compartments that were filled with fresh ice on a daily basis.[3] Hotels, clubs and restaurants relied on daily supplies of ice for food preservation, not to mention the use of ice in drinks. Ice cream makers, or confectioners as they were then known, needed substantial quantities of ice for their freezer drums. Hospitals had developed regular uses for ice, as had industries like brewing and fishing. In the household, ice was also growing in its applications. Whereas an

2 All of the statistics on the ice trade cited in this chapter are drawn from the monthly journal *Cold Storage and Ice Trades Review*, first issued in April 1898.

3 The *Cold Storage and Ice Trades Review*, in several of its earliest issues in 1898, set out in some detail the measures that railway companies were then taking to provide refrigerated transport: see, for example, I (1898), pp. 15, 25, 37.

ice-cellar or an ice-house had traditionally been the province of the upper classes, by the late nineteenth century, growing numbers of middle-class families were using ice-chests and ice safes, especially during the summer months. When a heatwave struck, even the ordinary man on the street began clamouring for ice. In London and other large cities, sudden hot spells brought fears of ice famine. In mid-June 1900, a heatwave caught the capital completely unawares and perspiring Londoners found to their dismay that iced drinks were not instantly available in hotels and eating-houses. Headlines in some quarters of the daily press speculated that ice might soon run out altogether, but wiser counsel soon prevailed as it became clear that there were extensive stocks in the capital's ice-cellars and ice-wells and it was merely a matter of extracting new supplies. One wag of a journalist went as far as to claim that the ice-clad mountains of Norway from whence ice was obtained could be reached by the District Railway in less than 30 minutes from King's Cross.[4]

Few of us today give a second thought to food preservation. We wander at leisure around supermarket stores lined with ranks of cold cabinets and chest freezers and load our trolleys with several weeks supply of provisions. Once home, our purchases are immediately re-stored in identical machines. There is hardly a home without fridge and freezer. But a hundred years ago, such a routine would have seemed incredible. Of course, many households had a larder or pantry, with stone floor, tiled walls, marble slabs for shelves and carefully sited air vents to minimize ambient air temperatures. The secret of a really effective larder was airflow, preferably from a northerly aspect. The best ventilation was achieved by means of a window fitted not with glass but with fine wire gauze or perforated zinc. When summer came, though, the larder often failed its users. In sultry weather, food quite quickly became tainted. In 1900, *The Book of the Home* described the elaborate measures that were sometimes necessary in the larder. A large pail of water, for example, assisted in reducing the effect of atmospheric heat, while inverted flowerpots placed in soup-plates filled with water and covered with wet cloths sufficiently large to

4 See *British Refrigeration and Allied Interests* III (1900), pp. 121–2.

touch the water, formed a means of prolonging the life of butter and lard.[5] A cellar could be used for food storage, of course, for despite its dank reputation, it came into its own in hot weather. However, precautions invariably had to be taken against vermin.

The evident difficulties of food preservation meant that many basic foods were consumed within a day or so of their having been purchased. If you desired to keep such perishables, especially in summer, the ice-chest or ice-box became your saviour. Constructed to all manner of patent designs, the basic principle was that whole or broken ice placed in a special cage or compartment within the box would preserve for several days any item of food placed in it. There had to be a tray to collect the water from any ice that melted, but as long as the ice mass was not allowed to diminish significantly, such contraptions were generally quite effective. Butchers, fishmongers, hotels and restaurants used scaled up versions of these same chests and safes in a similar manner. In America, they were known as ice refrigerators, a term that soon found currency in Britain too. Today, we still employ the same principle in the cool-bags or cool-boxes that we take with us on picnics. A specially lined interior provides the insulation, and the cooling is achieved with sealed ice packs which we take straight from our freezers. Of course, the intention is to keep food fresh for hours rather than days, but the modern practice affords a neat reminder of what was once the primary means of food preservation.

Until the very last decade of the nineteenth century, it was natural ice that formed the mainstay of Britain's ice consumption. Although there was a long history in Britain of collecting ice from ponds, lakes and other water courses, the supply was of indifferent quality and unreliable. Instead, it was the lakes and fjords of south and south-west Norway that were the primary source of natural ice used. However, earlier in the century, a trade had developed in natural ice from America, brought across the Atlantic from Massachusetts, in particular from Lake Wenham. 'Wenham ice', so-called, was as crystal clear as its Norwegian counterpart, and its use spread rapidly. It was desired not just by butchers and fishmongers, for it became an article of necessity on the tables of society.

5 H.C. Davidson (ed.), *The Book of the Home* III (London, 1900), pp. 60–1.

Chefs made decorations out of it. Small lumps were placed in beverages. No restaurant or bar seemed complete without its supply of Wenham ice. In the most fashionable establishments, the ice went to make mint juleps and sherry cobblers as Britons quickly caught American ice habits.[6]

The ice trade from Massachusetts had all but vanished by 1870, forced out of existence by the rapidly growing trade from Norway which soon acquired a near monopoly in the British market. However, the technology was steadily becoming available for the production of ice by artificial means and, by 1900, London as well as many provincial centres had acquired ice factories. In the major fishing ports, dockside ice-making plants also sprang up to ensure for the expanding trawler fleets a continuous supply of crushed ice for preserving their fish stocks while at sea. By the 1920s, even small towns had acquired ice factories, especially the seaside resorts with their prodigious demands for ice for making ice cream in the summer tourist season.

Although the peak year of Norway's ice trade with Britain was 1899, when over half a million tons were landed in ports all around the country, the trade remained vigorous right up until the First World War and competed well with the rising volume of artificial ice production, not only on price but on quality and on availability. Over the 10 years from 1898 to 1907, nearly 4 million tons of Norwegian ice came into the country, with London alone accounting for some 1.9 million tons. By 1900, natural ice had become one of Norway's most important exports, involving thousands of people and hundreds of vessels.[7] The continuing attraction of natural ice was most visibly manifest in the way several of the biggest of the London ice manufacturers imported large quantities of Norwegian ice to sell alongside their factory product.

Norwegian ice also had another rather more singular feature in its favour. It brought with it a sense of the exotic, an element of the sublime. For many Victorians, the Arctic and the frozen north had long had an allure. Whereas the ice one gathered from frozen ponds and lakes in an English winter was opaque, often dirty and broken, Norwegian ice came

6 See *Illustrated London News* VI (1845), pp. 315–6.

7 P.G. Norseng, 'The "Last Ice Age" in Maritime History: An Introduction', *International Journal of Maritime History* 34, 1 (2022), p. 109.

Figure 1.3. Norwegian vessels loading ice blocks at Drammen, Drammensfjord, March 1906, the ice destined for ports in Britain (Norsk Folkemuseum NF.W 04929).

in giant, shimmering, near translucent cubes. Fishmongers and ice merchants would often display examples in their shop windows. Street shoppers rarely failed to pause and gaze at them. What puzzled most was the way the blocks appeared to show little wastage from one day to the next. And it was the lasting quality of Norwegian ice, as well as its perceived purity ('nature's harvest'), that appeared to guarantee it a healthy market in the decades before 1914. For years, the early producers of artificial ice had had problems making ice that was clear in the manner of the natural product. It was air bubbles trapped in the freezing process that accounted for early factory ice being opaque. The secret was to insert a mechanical agitator, but there was then still the problem of bubbles forming in the core once the agitator had been withdrawn.

With the growth of the Norwegian ice trade to Britain over the final decades of the nineteenth century, lakes and fjords there began taking on the value that was normally attached to mines. British as well as Norwegian companies were found purchasing them much as one would purchase coal or mineral deposits. However, no ice merchant or ice trader

claimed to 'mine' ice. Instead, it was 'grown' and then 'harvested'. Ice, in other words, became a resource that was farmed. And the trade soon gathered about it a whole raft of terminology that made it, if at times disconcertingly, seem to be a form of agriculture. The impact on the trade of the vagaries of weather was probably the most critical of these features. The ice harvest fluctuated according to the duration and intensity of winter cold. Equally, consumption of ice varied according to the heat or otherwise of a British summer.

For some commentators and observers, the great blocks of imported Norwegian ice were a reminder of the grand ice palaces that had once been constructed in Russian winters. The eighteenth-century poet, William Cowper, once described the structure erected for the marriage of Prince Gallitzin at St. Petersburg. Fifty-two feet long, sixteen feet wide and twenty feet high, its ice blocks were hewn from the frozen river Neva. The palace walls were sculpted with all manner of ornamentation and the furniture was also fashioned from ice. The entire structure was then defended by six ice cannon which fired hempen shot.[8]

At the start of the 21st century, we are again coming face to face with the translucent ice blocks that once went to make such palaces and which, at one time, were carried across the North Sea to Britain. For today, from the River Torne in arctic Sweden, ice is harvested annually to create an ice hotel there, not unlike the ice palace on the Neva. Even the hotel beds are made out of ice, the ultimate in 'cool' living. In parallel, London and a number of other world cities now boast ice-bars, created from the very same Swedish ice blocks. The air temperature is kept at minus five degrees centigrade. Clientèle dress in thermal ponchos and mittens. They drink vodka from glasses carved from the same ice that comprises the walls. The bar, too, is made from ice, its surface smoothed from time to time with a hot iron, while glassy ice sculptures decorate the surroundings.

If you were to roll the historical film back a century or so, the task of gathering stored Norwegian ice from a London ice well or ice cellar would not have felt or looked so different: sub-zero temperatures, ice-blocks stacked one upon another glistening in the lamplight. Or you

8 See *Chambers's Journal* VII (1847), p. 261.

might have been a Norwegian sailor in early spring on board a sailing barque carrying ice from Norway to an English port on the east coast. A five-day passage over the North Sea was challenging in itself at this time of year, but not when the hold was packed with 300 tons of block ice. Every part of the ship would have been like an ice-house, whatever the air temperature outside. And if the pumps were not worked regularly, the ice blocks lying nearest the bottom of the ship's hold would melt from their base and be liable to shift in rough seas. Thus an ice-laden vessel was potentially a 'coffin ship', and the wreck lists in the maritime press often told their own sad story.

Remarkably little has been published on the shipment of natural ice from Norway into Britain. Four studies deserve particular mention. The first is Felicity Kinross's intriguing work (1991) telling the story of Carlo Gatti, a Swiss Italian emigrant who came to London in 1840 and set up an ice cream and confectionery parlour. In due course, he became a leading importer of Norwegian block ice, via the Regent's Park Canal. Kinross's book, although titled *Coffee and Ices*, actually offers a wonderful vignette of the ice trade between Norway and Britain as viewed through the lens of one company. The second study forms an MSc dissertation undertaken at the London School of Economics and published as a working paper of the Department of Economic History there in 2006. It is by Bodil Blain and offers a fascinating perspective on the rise and decline of the Anglo-Norwegian ice trade under the broad explanatory concept of 'melting markets'. The study conforms to what is traditionally expected of a Master's dissertation, in that it follows a generally prescribed academic structure. However, it includes valuable statistical series and affords a highly succinct appreciation of the underlying elements and overall dynamics of the trade. The third and fourth studies are both by R.G. David and address the place of Norwegian ice imports in the economy of the North of England from 1840 to 1914, and, more broadly, the demise of Anglo-Norwegian ice imports in the early twentieth century. The work of all three authors is detailed in the bibliography.

By contrast, there is rather more in print on what one may call the 'supply' side of the trade in ice from Norway to Britain, in other words the harvest of Norwegian lake and fjord ice and its export out of Norwegian

ports. This gathered momentum with the launching of Per Norseng's 'Natural Ice Project': *The Last Ice Age: The Trade in Natural Ice as an Agent of Modernisation and Integration in the Nineteenth and Early Twentieth Century* under the auspices of the Norwegian Maritime Museum (Norsk Sjøfartsmuseum) and the University of South-Eastern Norway around 2009. Some of the collected results of this work have appeared in an issue of the *International Journal of Maritime History* 34, I (2022).

The primary source for the present study has been a British trade journal, the *Cold Storage and Ice Trades Review*, which first appeared in April 1898. Original records of the Norwegian ice trade are relatively few in Britain, but the pages of this particular voluminous monthly publication, printed in large format on glossy paper, fully illustrated, more than compensate, for they afford a penetrating narrative and extensive overview of the trade from among the many individuals and companies who engaged in it.

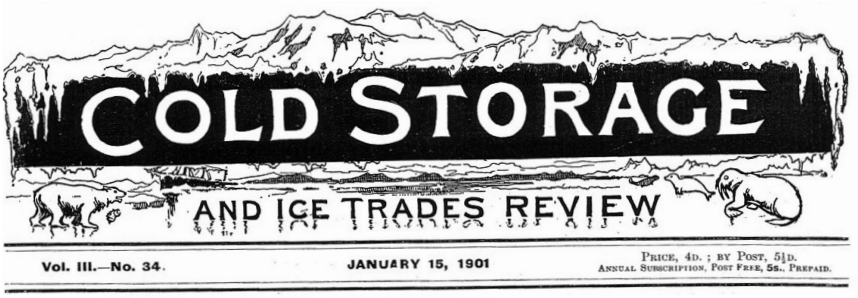

Figure 1.4. Masthead of the journal *Cold Storage and Ice Trades Review* (Bodleian: Per 193998 d.1/ III p. 337).

Month by month from April 1898, the reader is transported back into a virtual world, the pages of each issue opening a window on just about every aspect of the natural ice trade from Norway, as well as the competitive rise of artificial ice production in Britain. There are 'natural ice notes' almost every month, sent in by correspondents, reporting on conditions in the trade across Norway. In parallel, British consular officials in Norway would submit regular updates on winter ice crops in their respective domains. Come early spring, the journal contained near continuous accounts of the progress made by ice shippers in meeting their advance contracts. London receiving merchants would be constantly on

the lookout for signs of warm weather, for all in the trade remained on tenterhooks as to whether they had sufficient stocks of ice in store and had made sufficient advance orders to meet a prolonged heatwave. The truth was that fortunes could be lost or made in what was a disturbingly volatile market. Indeed, so anxious was the desire for information in real time that the *Cold Storage and Ice Trades Review* found itself with a competitor journal by the start of 1899. This was the short-lived *British Refrigeration and Allied Interests*, another monthly publication that seemed almost to trace the same ground, except that its editor, Cecil Lightfoot, was very firmly in the ice factory lobby, his name later associated with Lightfoot Refrigeration.[9]

In the meantime, the *Cold Storage and Ice Trades Review* published detailed statistics, monthly and annually, on the volume and value of Norwegian ice imports into Britain. There were correspondents in cities and towns across Britain updating the journal's editorial team on conditions of demand and supply in the local ice trade, whether it was over Norwegian imports or the artificial ice produced by local factories. A running tally seems to have been kept on new patent applications affecting technical improvements in artificial ice manufacture and refrigeration. There were also regular shipping reports and all manner of other 'market memoranda'. Leader columns would offer assessments of the future direction of the trade, and in cases where government or local authorities (the local state) had instituted inquiries bearing upon the ice trades, the results would be laid out in some detail in the journal. Equally, where notable court cases had been brought by participants in the trade, these would be rehearsed in the journal. When bound into 12-month volumes, the *Cold Storage and Ice Trades Review* frequently ran to over 400 pages, and the quality of its production may partially be explained by the fact that it had a world-wide sale, evidenced in it being available on subscription at just five shillings per annum, post-free.

In Norway, there are far more surviving business records that touch on the ice trade into Britain, for example the extensive papers of the Wiborg

9 By the 1920s, this company had become an international supplier of refrigeration plants, alongside its many installations across Britain: see *Cold Storage and Ice Trades Review* XXVI (1923), p. xxvi.

family which operated a large and highly profitable ice-export business from Kragerø in the south-east of the country.[10] There is also a fine collection of glass plate images depicting many aspects of the ice trade at the Norsk Folkemuseum in Oslo, many of which are accessible online. Both sources have been fully utilised in the present study.

Another critical body of evidence for the present study has come from London's *Times* newspaper, especially now that it is available in electronic archive form. Whereas once one spent days and weeks poring over its newsprint or endeavouring to read indifferent microfilm copies, *The Times Digital Archive* affords the most instantaneous of search facilities. It proved vital, for example, in tracing some of the calamities that befell ice-laden ships on their journey across the North Sea and up the Thames estuary, or others that were in passage to more northerly English, Scottish and Welsh ports.

Beyond the three sets of sources set out above, the study draws on a wide variety of other nineteenth-century printed literature, as well as more recently published material. Full details are given in the bibliography.

The organisation of the book features an introduction, followed by chapters that explore different dimensions of the ice trade. Chapter 2 takes the reader back one hundred or more years to a typical sea passage from the port of London across the North Sea to Oslo fjord and the port of Oslo, the passage taken by countless ships that traded ice, either direct from London to Oslo, or else via some of Britain's east coast ports where they would have loaded coal or coke as a return traffic. From early spring, these vessels, laden with fresh lake or fjord ice, would then have made passage back across the North Sea to face the difficult task of navigating the wide open Thames estuary and the sinuous course of the river to reach London itself. Chapter 3 focuses on the Norwegian ice farms, the source of the high quality, translucent block ice that was demanded by ice merchants in Britain. Ice farming generated a whole support system of

10 An idea of the range of possible Norwegian sources can be gleaned from E. Bagle, 'Ice from "Nature's Factory"', *International Journal of Maritime History* 34, 1 (2022), pp. 123–32. Bagle offers three different perspectives, one centering on the large Wiborg business enterprise around Kragerø, another on the Dahll brothers' venture, the brothers being among the pioneer ice farmers in the 1850s and 1860s at Røyken in the Oslo fjord, and, finally, a ship captain, farmer and ice exporter (Thorvald Baarsrud) whose business centred on his own property in the inner Oslofjord.

ice stores and wooden trunkways for transporting ice blocks down to the fjord sides, along with an elaborate labour force that was often diverted from fishing and forestry. Chapter 4 explores the ships that plied ice over the North Sea, the mix of sail and steam power, and the men who crewed them. Chapter 5 then examines the rise of the Ice Factory in Britain, with the production of artificial ice becoming steadily more technologically efficient, though never quite achieving the purity that high quality Norwegian block ice typically demonstrated. Chapters 6 and 7 deal with the consumption of ice in Britain, including the rapid rise of the ice cream trade that helped sustain Norwegian ice imports. Finally, Chapter 8 traces the slow decline of Norwegian ice imports during and following the First World War. A series of uncharacteristically mild winters in Norway in the 1920s and similarly cool summers in Britain acted to reinforce that decline.