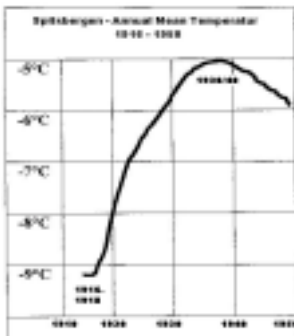


## B. Cooling of Europe

### Arctic Europe - winter of 1939/40 (2\_11)

#### Climate Surprise

In autumn 1939 just 19 years had passed since WWI, named the Great War, had ended. With the end of WWI a dramatic temperature rise had started in the Northern North Atlantic, generating the expression “Greening of Greenland” and “Warming of Europe”. The ‘Big Warming’ was most pronounced at the Norwegian Island Spitsbergen (Svalbard) high in the North bordering the Arctic Sea. The pre World War II winters were the warmest for several hundred years. Suddenly, without any geophysical event, e.g. volcano, earthquake, or meteorite the Northern hemisphere in general, but particularly Northern Europe plunged to Ice Age conditions. Not nature had caused weather to change the course but huge naval armadas going into action on September 1<sup>st</sup> 1939.



#### Top Secret - The Weather

Censorship commenced with the start of WWII. Weather was given a top-secret place. Only when Britain plunged into glacial conditions, not experienced for many decades, His Majesty’s Censor relaxed censorship on weather reporting and The New York Times was able to report as follows (excerpts):

“London, 27 January 1940  
 British Cold Snap Can Now Be Told.  
 Military Censorship on the Weather Lifted –  
 Freeze Severest Since 1894.  
 7-Degrees Low in London.  
 Press Has Noted Subzero Spell in Europe  
 Without a word of Arctic Conditions locally.



Now it can be told. For the first time since the war began, British censors today allowed that humdrum conversational topic, the weather, which has been a strict military secret in Britain, to be mentioned in news dispatches –

providing the weather news is more than fifteen days old. The weather has been so unusually Arctic that by reaction the censors' hearts were thawed enough to permit disclosure of the fact that this region shivered since past several weeks in the coldest spell since 1894, with the mercury dropping almost to zero and a damp knife-edged wind piercing the marrow. While British newspaper readers' teeth chattered, the newspapers told them about a cold wave sweeping Europe, with sub-zero temperature records in Germany, Finland and neutral countries." (NYT, 28 January 1940).

**Note:** Temperatures reported by NYT are in Fahrenheit.

### Introduction

WWII started during a period of fine weather. The previous months of 1939 had been entirely normal. Two decades of global warming had made the late 1930s the warmest period since the 16<sup>th</sup> century. Only four months later Northern Europe became arctic. Since September 1939 the North Sea had blocked Atlantic cyclones from moving east on common routes via Central Europe. (A) The reason is obvious. Enormous naval activities stirred and churned huge seawater areas, due to naval activities (B), which inevitably led to the North Sea and Baltic Sea cooling. (C)



Further details:

(A) Lost West Drift, 2\_12.  
 (B) Sea war events, 2\_13,  
 Sea mines, 2\_14, Depth  
 charges, 2\_15. (C) North Sea  
 cooling, 2\_16; Baltic Sea  
 cooling, 2\_17.

This section proposes to concentrate entirely on the ultimate outcome of the weather conditions in Northern Europe during the first

war winter of 1939/40. It will be done mainly by providing a list of significant events from mid December 1939 until the end of February 1940. These events will demonstrate in the most convincing manner how extraordinary and how severe this winter was. It shall particularly raise the awareness that the arctic winter 1939/40 must have been caused by something. Much of this information has been mainly compiled from reports from three newspapers: The New York Times (NYT), the Neue Zürcher Zeitung (NZZ) and the Hamburger Anzeiger. The marvellous job The New York Times did is highly appreciated. Their reporting was outstanding, excellent, comprehensive, detailed and prompt.

The list will also contain some general information or analysis of events of particular significance pertaining to the theme “war and weather”. On the other hand the list does not aim in any way to provide a detailed or complete account of the situation, but shall only describe, by a collection of certain examples, the severity of this winter. One cannot seriously discuss “climatic changes” as long as the reasons for the icy winter 1939/40 have not been discussed and explained. Nothing had happened on earth prior to 1 September 1939, respectively January 1940, that could have caused or been linked to the sudden arrival of this extraordinary cold winter, except that the Second World War had started. (A)

Further details: (A) concerning impact of El Niño, see : Lost West Drift, 2\_12.

Before starting with the historical list of events, a brief climatic assessment on the severity of the winter conditions in Northern Europe is compiled. It was the coldest winter for more than 100 years for some countries or parts thereof, e.g. Sweden, Germany and Holland. The centre of the “cold pole” in winter the 1939/40 could be located within the triangle Rotterdam – Hamburg – Koenigsberg/Kaliningrad - Riga – Budapest<sup>1</sup>. However, for all countries in the Northern European realm relevant information is compiled in the Chronicle (below, last section), just to give a basic idea as to the exceptional nature of this winter.

This work aims to prove that the war at sea caused this weather anomaly. Naval aspects during the initial war period of a couple of months are given in the three papers. (A) These analyses are also part of the wider investigation to prove that the five years’ war at sea during WWII caused the biggest man-made global climatic disaster in the last century, starting with the first war winter of 1939/40 and lasting for four decades. (B)

Further details: (A) Sea war events, 2\_13, Sea mines, 2\_14, Depth charges, 2\_15. (B) Oceans at war, 4\_11, Ocean system affected, 4\_12.

## Severity of the winter of 1939/40

### *Great Britain*

#### Britain’s overall assessment:

- January 1940 had the lowest mean temperature over Britain. The mean temperature at sea level was 33°0°F over Scotland, and 31°7°F over England and Wales<sup>2,3</sup>.

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<sup>1</sup> Scherhag, 1951

<sup>2</sup> Lewis

<sup>3</sup> Glasspoole

<sup>4</sup> Gunton, H.C., (1939/40)

Extract from „Climate Change & Naval War – A Scientific Assesment 2005  
Trafford on demand publishing, Canada/UK

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- January 1940 was probably the coldest for 100 years<sup>4</sup>.

Some locations:

- Richmond (Kew Observatory)/London: January 1940 was the coldest since 1791<sup>5</sup>;
- Richmond (Kew Observatory)/London: January 1940 had the highest percentage of ‘frost days’ (87%) since 1854, and registered 84% morning frost<sup>6</sup>; of the whole winter (December-February) 58% were ‘frost days’ and 13% were ‘ice days’<sup>7</sup>;
- Greenwich: As regards mean temperatures at Greenwich in January the figure was the lowest recorded during the past one hundred years, it being 30.8° F, which is 7.8° F below normal and 0.9° F lower than the mean for the long – remembered January 1881<sup>8</sup>;
- in Kilmarnock (ca. 35 km south of Glasgow): on January 22, 1940 the temperature deviated by minus 25.3° F from average, the highest since 1902<sup>9</sup>;
- in Durham: January mean temperature (34.8°F) was the lowest of a table 1901-1940; the February temperatures correspondingly were the lowest since 1902<sup>10</sup>.

*The Netherlands*

The winter of 1939/40 ranks as No 8 in the list of the coldest winters since 1706, and was the coldest since 1845<sup>11</sup>.

The record winter conditions were reckoned immediately:

- The meteorologists say that last month has been colder than any January in the last one hundred years, with mean daytime temperatures of 23 degrees Fahrenheit (-5°C). (NYT, 1 February 1940).
- “February has not yet reached January’s disagreeable record but during the last two days has not been far away”. (NYT, 15 February 1940).
- “The coldest winter since 1830.” (NYT, 20 February 1940).

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<sup>5</sup> Drummond, Table I

<sup>8</sup> Dines

<sup>11</sup> Labrijn

<sup>6</sup> Drummond, Table VII

<sup>9</sup> Dunbar

<sup>7</sup> Drummond, P. 30

<sup>10</sup> Manley

### Norway

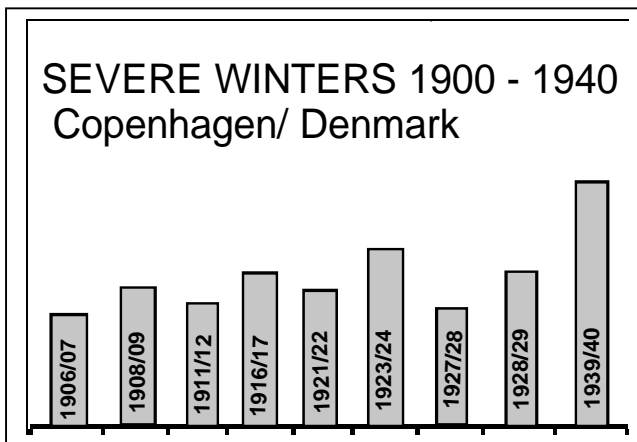
The mercury dropped to 54 degrees below zero Fahrenheit at Tynset, in Eastern Norway. (NYT, 18 January 1940).

### Sweden

On the basis data for four months i.e., December – March, the winter of 1939/40 ranked 9<sup>th</sup> in the list of the coldest winters since 1757, trailing behind only the winters of 1880/81 (rank 6); 1837/38 (rank 5); 1808/09 (rank 2). On the basis data for three months the winter is ranked No.10., succeeding the winter of 1892/93 (rank 9)<sup>12</sup>.

“In Sweden all cold records were broken in the last twenty-four hours, the coldest since 1805.” (NYT, 21 February 1940).

### Denmark



Based on a list taken from ten observation stations from 1906 to 1941 the amount of cold in winter of 1939/40 was by far the severest at any of the places observed. The figures available, with the mean data

in respect of the 10 coldest years since 1906 in brackets, are as follows: Kobenhavn –378.5 (204.0); Fanø – 349.9 (208.2); Hammershus - 305.6 (176.4); Bogø – 438.0 (235.0). The lowest winter temperatures noted had been for December(-22.2°C); January(-24.3°C); February (-27.4°C); March (-22.0 °C)<sup>13</sup>.

“It is Denmark’s worst winter since 1860”. (NYT, 15 February 1940). The Chronicle (below) provides further information on the severity of the situation in Denmark.

<sup>12</sup> Liljequist, ,1757 –1942’

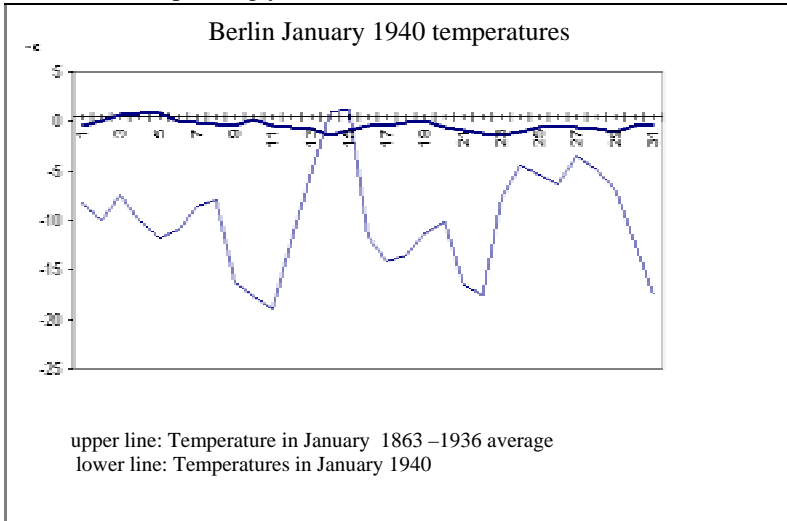
### *Baltic Countries*

The lowest temperature in seventy years was reported at Riga, Latvia, with a reading of 47.2°F degrees below zero (-44°C); (NYT, 18 January 1940).

Remark: Information on the weather situation during the WWII war winters in the Baltic countries is rare, if existed at all. Presumably, Tallin, Riga and Vilnius experienced the same glacial war winters as Stockholm, Copenhagen, Rotterdam, and London from 1939 to 1942.

### *Germany*

For Berlin and Halle it was the coldest winter in 110 years. The assessment is based on the ‘summary of the daily mean data from November to March’. For Berlin (correspondingly for Halle), the data noted for 1829/30 is the ‘cold



sum’ figure -791°C, for the winter 1939/40 the figure is -736°C<sup>14</sup>. These data are confirmed by other researches as well<sup>15</sup>.

The coldest January months with respect to Berlin since recording started in 1719 are: 1823, 1838 and 1940. With regard to the winter of 1928/29, February (-10.4°C) was colder than February 1940 (-7°C), but as January 1929 is not among the 20 coldest winter months, the winter 1939/40 ranks higher on the list of cold winters<sup>16</sup>For Dresden the winter of 1939/40 (December-February) was the second coldest in the 115 year record, only surpassed by the winter of 1829/30<sup>17</sup>.

<sup>13</sup> Det Danske, 1939-40.

<sup>14</sup> Lenke, P.92/42

<sup>15</sup> Stellmacher/Tiesel

Dresden recorded the coldest January ever measured since observations started, with minus 9.1°C from average, while the previously lowest figure for 1838 was minus 8.2°C. It was the coldest January for at least 112 years<sup>18</sup>.

For Darmstadt (near Frankfurt a. M.) the winter was the severest since 1837/38 and 1829/30 accompanied with abundant snowfall<sup>19</sup>.

### *Hungary*

The winter 1939/40 ranked 6<sup>th</sup> among the 115 year record, and occupied third place in the list of frost days, after 1829/30 (84), 1890/91 (82), and 1939/40 (76); while the coldest February in the last 115 years occurred during the winters of 1929/30 and 1939/40<sup>20</sup>.

### *Switzerland*

As observed by Groissmayr in 1947: “In contrast to Germany, Austria and Hungary, the winter of 1939/40 in Switzerland was short, the February was close to normal”<sup>21</sup> while by comparison the difference in mean temperatures was -8.2°C in Königsberg, and -6° to -8°C in Hungary (compared with Switzerland’s average temp.)<sup>22</sup>

### *Italy*

Italy experienced some cold from the end of December 1939 to mid January 1940.

A record low had been measured in Modena with 13.8°F (-25 °C) on 15<sup>th</sup> February 1940.

(NYT, 16 February 1940).

For further details concerning the weather conditions in the Mediterranean from end of December 1939 to mid January 1940 (see: Turkey quake, 2\_51).

### *Turkey*

*(Black Sea - Rumania, Bulgaria)*

An assessment concerning the earthquake in Turkey on 27<sup>th</sup> December 1939 is given in: Turkey quake (A). Further details: (A) Turkey quake, 2\_51.

<sup>16</sup> Fischer, ‚Berlin’

<sup>19</sup> Fischer, ‚Darmstadt’

<sup>22</sup> Groissmayr, 1947

<sup>17</sup> Groissmayr, 1944, P 53

<sup>20</sup> NN, ‚Hungary’

<sup>18</sup> Naegler, ‚Dresden’

<sup>21</sup> Groissmayr, 1947

*United States*

The months October to December 1939 had been very dry all over the US, (A) which may have some connection to the military activities in Europe and Asia in autumn 1939.(B) January 1940 was cold, followed by a mild February<sup>23</sup> Due to above normal average temperatures over the arctic (and Siberia), the cold pole over Canada has moved south towards the US in January 1940. According to Scherhag<sup>24</sup> January 1940 saw the ‘typical picture of a weakened sectional circulation’. Brooks observed that most of eastern Canada north of latitude 48°N was above normal in January 1940, with deviations running up to more than 25°F above normal north of latitude 58° N and 18°F above normal in the interior of Alaska. Missouri was actually as cold as the Hudson Bay region for the month<sup>25</sup>.

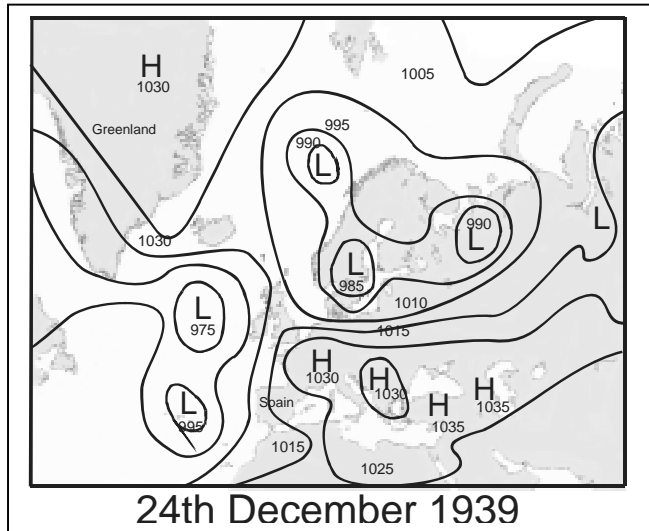
Further details: (A) USA dried out, 2\_32; (B) Rain-Making, 2\_31

**Chronicle**

Mid December 1939 to February 1940

NOTE: The temperatures reported by The New York Times are always in Fahrenheit; some of which have been converted to Celsius (in brackets).

22/23  
December  
1939;  
Snowstorm at  
the Petsamo  
(Arctic) Front  
in Finland with minus 30°C to minus 36°C (Frankfurter Zeitung, 23 Dec.39).



22 December 1939; A very severe snowstorm brought shipping in the Black Sea and the lower Danube river to a standstill on Thursday (21 December 1939). At the coast the temperatures dropped to 15°C below zero.

<sup>23</sup> Groissmayr, 1944

<sup>24</sup> Scherhag, 1951

<sup>25</sup> Brooks, 1939/40



The storm caused considerable damage in Bucharest. (Hamburger Anzeiger, 23/24 December 1939). Snow also fell all over Bulgaria on 21-22 December, starting a new cold weather episode (down to -16°C), 24<sup>th</sup> in Northern Bulgaria -20°C, (according to Bulgarian newspaper 'Zora'; by personal communication).

23 December 1939; Heavy snowstorm reported from Latvia (Hamburger Anzeiger).

24-27 December 1939: Baltic countries temperatures: In the Eastern parts of the Baltic countries (Russian West border) the temperatures fell to minus 17°C from the 24<sup>th</sup> to 25<sup>th</sup>, and below 20°C one day later, extending to the Baltic coast, with minus 14°C in Klaipeda and minus 17°C in Gdynia (Bight) on 27<sup>th</sup> December<sup>26</sup>. (Newspaper reports)

28 December 1939; Snow storms sweep Denmark (Frankfurter Zeitung, 29 December 1939).

29 December 1939; Ice closes Danube to German supplies; Rail traffic expected to be hampered by snow (NYT, 30 December 1939); "Cold winds recently have been blowing westward from Russia and the constantly low temperature in the river valley indicates a general freeze will set in soon." (NYT, ditto).

29 December 1939; From Agram in Yugoslavia temperature of minus 32°C is reported. (Neue Zürcher Zeitung, 31 December 1939).

30 December 1939; Cold wave over the Riviera. In Genoa a rapid fall of temperature was followed by an extensive snowstorm. Trieste reports heavy winter storms. Milan had minus ten degrees Celsius during the Saturday night. (Neue Zuercher Zeitung, 31 Dec. 1939).

30 December 1939; "An unprecedented and severe snow storm in Naples region today indirectly caused a train wreck in...". "Rome's heaviest snowfall in recorded history - six inches - made the Romans feel as New Yorkers did in the 1888 blizzard. There had been nothing close to this as snow fell for three days continuously from December 16 to 18, 1846. (NYT, 31 December 1939), (so also: Neue Zürcher Zeitung (2 Jan. 1940), but snow fall lasted only for eight hours. The snow melted away in a few hours on 1<sup>st</sup> January 1940).

30 December 1939; Roma covered by 25-30 cm snow; Venice minus 5°C; Finland's Arctic Front minus 48°C; record cold in Sweden and Norway with

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<sup>26</sup> Seewarte

minus 40°C (earlier severest in January 1914 minus 50°C); severe cold in  
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Yugoslavia with minus 23°C (Frankfurter Zeitung).

31 December 1939); cold wave in Bulgaria, the lowest at Rustschuk at the Danube river with minus 20°C. Banja Luka/Westbosnia minus 27°C; in Slovenian cities minus 26°C. (information by personal communication)

31 Dec. 1940; The Atlantic island Madeira reports a violent storm on Sunday (31 December) with heavy flooding. (Neue Zürcher Zeitung, 2 January 1940);

31 December 1939; Thin ice reported at Briala, River Danube – 11°C<sup>27</sup>

### *January 1940*

1 January 1940; All navigation on Danube stopped owing to ice<sup>28</sup>.

3 January 1940; Heavy snowstorms reported again from Denmark and traffic at Jutland is affected. (Neue Zürcher Zeitung, 03 Jan. 1940).

2 January 1940; Weather curtails West Front Action. (G.H. Archambault reporting) With the cold becoming keener and much snow under foot, activity on the Western Front is best described as relatively – very real to the men who must continue to patrol, but virtually insignificant from a military point of view. Rain and mud are bad enough; snow and ice are even worse. (NYT, 3 January 1940).

8 January 1940; A record frost today covered Northern and Central Russia, with the thermometer at 31 degrees below zero Fahrenheit (-35°C) and affected normal activity. (NYT, 9 January 1940). Sport events have been cancelled. Twelve persons with frozen legs – the majority intoxicated – were picked up by ambulances. (NYT, 11 January 1940).

10 January 1940; Cold weather, worst in Hungary since 1929, is expected to break all previous records. Already the Danube is a solid sheet of ice. (NYT, 11 January 1940).

11 January 1940; Rumania. Temperatures as low as 40 degrees below zero Fahrenheit (-40°C); Bulgaria was reported to be suffering under the worst cold in the memory of living persons, with scores of villages isolated by snow. (NYT, 12 January 1940)

<sup>27</sup> Frankcom <sup>28</sup> Frankcom

11 January 1940; Sea freezing near Odessa. Very low temperatures over the Black Sea. Rumania caught in minus 33 °C cold, (according to Bulgarian newspaper 'Zora'; by personal communication).

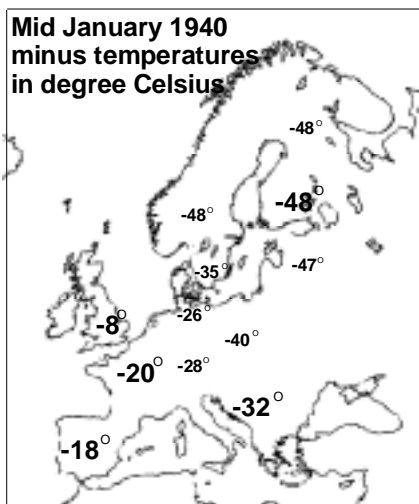
11 January 1940, Berlin: Mercury dropped to about four degrees below zero, Fahrenheit (-20°C), in the capital and to about five below zero in the suburbs. (NYT, 12 January 1940).

11 January 1940; Riga -41° C; Budapest -26° C (Neue Zürcher Zeitung, 11 January 1940).

11 January 1940; Budapest -26, Vienna -25, Sofia -22; heavy and icy storm over North Italy; shipping halted in The Netherlands by frozen rivers; icing between the Danish islands (Neue Zürcher Zeitung, 11 January 1940)

12 January 1940; Amsterdam. Floating ice is halting traffic on the rivers Rhine, Maas and Yssel. The ports of Amsterdam and Rotterdam are being kept open with considerable difficulty. The cold increases losses already caused by war conditions. For instance, the number of ships calling at Rotterdam has dropped from 1,300 per month before the war to 380 now. (NYT, 13 January 1940).

12 January 1940; From the lowland of Rumania a severe cold of minus 35° C flows to Besarabia. The ice in the Danube becomes more firm and has already reached a thickness of 35 cm at some places. (Neue Zürcher Zeitung, 13 January 1939).



according newspaper reports

13 January 1940; The temperatures fell to 25.6 degrees below zero Fahrenheit (-31.5°C) in Northern Rumania, and many villages in Dobruja were snowbound. (NYT, 14 January 1940).

13 January 1940; Riga/Latvia; The bitterest cold wave for years, which sent temperatures in the Baltic countries down to as low as 40 degrees below zero Fahrenheit, ended here abruptly today. The mercury rose rapidly to a few degrees below zero. Parts of the Baltic Sea have frozen over and floating and pack ice are likely to interfere with shipping for some time. (NYT, 14 January 1940).

13 January 1940; In the Soviet Union, extreme cold, particularly at the Don, temperatures on Friday, 12 January was minus 38° C. (Neue Zürcher Zeitung, 14 January 1940).

14 January 1940; Amsterdam. A break in freezing weather supplemented by rain, fog and melting ice (came). (NYT, 15 January 1940). At least two ships were crushed in ice packs on the Rhine and Ijsselmeer Rivers and thirty others were damaged severely. (NYT, 14 January 1940).

15 January 1940; Temperatures of 40 degrees below zero Fahrenheit reported from Warsaw, and the Danube frozen solid, there is no doubt that Eastern Europe is in the grip of an icy winter which is made doubly hard by the war. (NYT, 15 January 1940).

16 January 1940; Headlines: Snowstorm eases anxiety in West. German Attack; Dependant on Machine; Held Unlikely in Present Weather. No Visibility for Planes. Snow has been falling steadily all day long after a night of heavy thaw. (NYT, 17 January 1940).

17 January 1940; Cold paralyses Northern Europe. The unexpected swiftness with which temperatures fell was featured in almost all weather reports. After comparatively warm weather over the weekend, the temperatures suddenly began dropping towards the bottom of the thermometers. A typical report from Riga said that the temperature was at freezing point on Monday morning (15 January) and at 22 degrees below zero Fahrenheit yesterday morning. Then it tumbled to 47.2 degrees below zero – a drop of 79.2 degrees in about thirty-six hours. (NYT, 18 January 1940).

17 January 1940; In Copenhagen: 14.8 degrees below zero Fahrenheit (-26°C) was registered early today; there was no sign that the cold wave would abate soon. Heavy snowstorms accompanied the cold, and traffic in many parts of Denmark was impeded or brought to a standstill. (NYT, 18 January 1940).

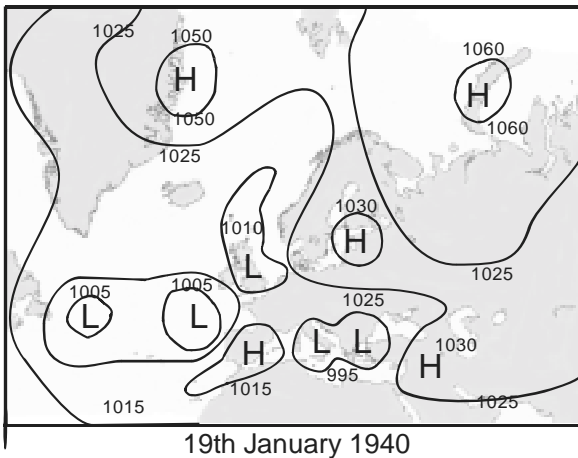
17 January 1940; Moscow. Severe cold continued in Moscow today, the average morning temperature being 49 degrees below zero Fahrenheit (-45°C). (NYT, 18 January 1940).

17 January 1940; Helsinki. “Pitiless, deathly cold laid a glacial hand on Russian’s war machinery tonight... near Salla, above the Arctic Circle. Phenomenal 54-degrees-below-zero Fahrenheit temperature (-48°C) restrained the Russian air forces, ...and apparently immobilised Russian ground forces, which have been attacking on the Karelian Isthmus. (NYT, 18 January 1940, front page). At Viborg the thermometer registered 54.4 degrees below zero Fahrenheit, while at Helsinki the temperature sank to 23.8 below zero Fahrenheit. (NYT, 18 January 1940, inside page).

Remark: As both cities are less than 200 km apart the difference should be seen with suspicion.

Tallin, just opposite the Gulf of Finland reported 14.8 degrees below zero. On the other hand Riga reported 47.2 degrees. (ditto). In Berlin the temperature tumbled 40 degrees, but the exact reading could not be transmitted abroad 'because of military reason'. (ditto).

17 January 1940; Budapest. The Danube is entirely frozen over. About 1,200 tugs and barges fully loaded have taken refuge in Hungarian ports. About 85 per cent of the transport is destined for Germany. Of these, 200 are oil tankers and 400 carry grain. (NYT, 18 January 1940).



21 January 1940; "The cold polar air remained stagnant over vast areas of Europe and North America. Result: One of the coldest weather in half a century. In Moscow the temperature dropped on Wednesday (January 17) to 49 degrees below zero Fahrenheit (-45°C),

in parts of Finland to 58 below zero. Such temperatures can be measured only on alcohol thermometers, as mercury freezes solid at 38 below. (NYT, 21 January 1940; Weekend in Review, 'War in the Cold').

21 January 1940: -23C was recorded at Rhyader (Wales).

22 January 1940; Severe snowstorms swept Europe from the Adriatic Sea to Scandinavia. (NYT, 23 January 1940).

26 January 1940; Headline: Cold Greater Foe Than Germans For French Army in Front Lines. Most Severe Winter in Generations Taxes Troops' Endurance to the Limit but Test Is Met With Courage (NYT, 27 January 1940). It has been freezing for six weeks. Everything is frozen – the bread in the sling bag, the wine in the canteen. (ditto).

28 January 1940; In the close vicinity of London the river Thames has frozen for the first time since 1814. (Neue Zürcher Zeitung, 29 January 1940).

29 January 1940; Icy Storm Hits Britain; London Has Heavy Snow (NYT, 29 January 1940). Heavy snow paralyses Britain; Transportation is badly

affected. Trains from Scotland fail to reach London. The united Press said that snow was falling over most of the country yesterday and that the cold broke a forty-six-year record. Snow still was falling heavily over most of the country today and there were three inches of snow in the centre of London. (NYT, 30 January 1940).

31 January 1940; Crawford/Scotland had been cut off by a blizzard raging over the British Isles last Saturday (27 January). Newspapers permitted to publish the first details of the blizzard, called it the coldest weather in a century. (NYT, 01 February 1940).

### *February 1940*

1 February 1940; Activities increase on Western Front. French send out four patrols as cold moderates. With the cold becoming less bitter on the Rhine-Moselle front, more activity is developing. ...Once again casemates along the Rhine have exchanged shots. After months of complete calm such exchanges are becoming more frequent. (NYT, 2 February 1940).

11 February 1940; Copenhagen. Temperature is still dropping today and is between 7 degrees above and 5 degrees below zero Fahrenheit in Denmark. Due to energy shortage the government ordered drastic restrictions forbidding the use of hot water, geysers and kitchen pipes until 1 April, getting the whole of Denmark splashing in bathtubs to get its last hot water bath for some time to come. (NYT, 12 February 1940).). Similar shortages had been reported in Germany three weeks earlier: Nazis Tighten Water Ban. Berlin Heating Plants to Issue it Only Twice Weekly. (NYT, 20 January 1940).

11 February 1940; Sweden. Stockholm set a lowest record with 13 degrees below zero Fahrenheit (-25°C). (NYT, 12 February 1940).

13 February 1940; Europe suffered tonight ...in the cold wave, which extended from the Arctic fringes of Norway and Finland...the Baltic countries, to the Netherlands and Hungary. (NYT, 14 February 1940).

13 February 1940; Amsterdam. Europe suffered tonight in the paralysing grip of the bitterest cold in more than 100 years. Hundreds of persons abandoned their homes in the face of crushing ice packs boiling up from ice-locked canals, rivers and seas.

Weather Bureaus here recorded the lowest temperature ever recorded in this country, 11.2 degrees below zero Fahrenheit (-24°C). To the Netherlands, which has a rather mild climate, this is more severe than the lowest temperatures recorded in Minnesota. The average for the whole country was 1.4 degrees above zero (-17°C). Water transportation in the Netherlands has been completely paralysed. The canals have been covered with thick ice for

more than six weeks, while the traffic on the Rhine and Waal stopped on January 11. (NYT, 14 February 1940).

13 February 1940; Copenhagen. The temperature has dropped to 13 degrees below zero Fahrenheit ( $-25^{\circ}\text{C}$ ). (NYT, 14 February 1940).

13 February 1940; Baltic countries. In Estonia, Latvia and Lithuania more than 10,000 persons suffered severe frostbite. At least five persons froze to death in the three Baltic countries, where temperatures reached 54 degrees below zero Fahrenheit ( $-47,7^{\circ}\text{C}$ ) recently for the first time in 160 years (NYT, 14 Feb. 1940). Baltic Sea frozen over. (ditto).

13 February 1940; Hungary. The most severe snowstorm in memory has been raging over Hungary all evening. The whole country is covered with snow several feet deep. (NYT, 14 February 1940).

13 February 1940; Romania. Romania reported heavy snowfall particularly in Bessarabia. (NYT, 14 February 1940).

15 February 1940; All records for cold in Europe were broken last month and just when it was hoped the worst was over, another cold wave has bound the whole continent. (NYT, 15 February 1940).

15 February 1940; Budapest suffered today from the bitterest cold for sixty years, 28 degrees below zero Fahrenheit ( $-33^{\circ}\text{C}$ ). (NYT, 16 February 1940).

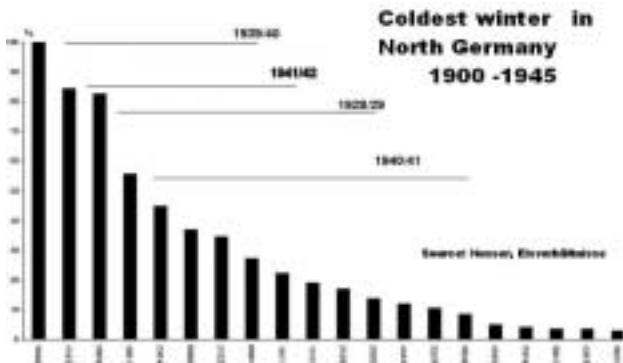
15 February 1940; Ice-locked canals and rivers and snowbound trains made it impossible to transport coal. New blizzards, with snowfall heavier than any in Germany for decades, caused delays for hours in all transportation. Snow was three feet deep in the streets of Berlin's suburbs. 15 February 1940; Italy is undergoing a new period of exceptionally severe cold with temperatures several degrees below freezing in some northern towns. The record low today was held by Modena with 13.8 degrees below zero Fahrenheit.



15 February 1940; In France canals that had been icy for weeks had scarcely been opened when the new cold wave bound the broken ice blocks again, immobilizing barges everywhere. (NYT, 15 February 1940).

17 February 1940; Slovakia. Cold cripples Slovakia. Following two days of snowfall and a period of bitter cold, Bratislava was largely cut off from the outside world. (NYT, 18 February 1940).

19 February 1940; Holland/Amsterdam. The coldest winter since 1830. (NYT, 20 February 1940).



20 February 1940; In Sweden all cold records were beaten in the last twenty-four hours with 32 degrees below zero Fahrenheit (-35,5°C), the coldest since 1805. The

previous record in Stockholm was 22 degrees below zero F. Copenhagen tonight 2 degrees above zero Fahrenheit. (NYT, 21 February 1940):

22 February 1940; Berlin had a sudden thaw today after two months of cold and snow such as the city has not seen for decades. At Warsaw workers clear away nearly three feet deep snow. (NYT, 23 February 1940).

25 February 1940; Danube river is still ice-choked. (NYT, 26 February 1940).

### Conclusion

The Chronicle is self-explanatory. The extreme conditions were not mere 'natural variations' but caused by the war at sea. (A)

Further details: (A) North Sea cooling, 2\_16, Baltic Sea cooling, 2\_17.