Extreme winter of 1946/47 in Europe (4_21)

Introduction

The winter of 1946/47 occurred at a time when the war at sea from 1939-1945 had ended. It does not pertain to the general theme of this study, whether naval warfare has caused the two most significant climatic changes in the last century. Actually, the 20th century had in Europe – in addition to the very cold WWI winters, five extreme winters, viz. 1928/29, 1939-1942, and 1946/47. While this investigation has established that Europe's war winters of 1939-42 remain in closest relationship with the war at sea, the question is: where did the other two arctic winters in Northern Europe emanate from? Does the appearance of these 'peace winters' affect the thesis, that the war at sea has generated the arctic war winters of 1939-42 that changed the climate? This section will discuss this matter in brief, but elaborate in particular the following two aspects:

- The 'war winters' and the 'peace winters' were generated under different circumstances and are of different making.
- It cannot be ignored that roots of both peace winters originated in the two World Wars.

In this study more emphasis will be placed on the former point, i.e. on the 'different' theory, without attempting to indulge in an in-depth research.

Before proceeding with the discussion, one interesting observation relating to the winter 1946/47 deserves a mention. People in Northern Europe who were old enough at the time of the three war winters of 1939-42 to remember them, would tell that the winter of 1946/47 was the coldest they had experienced. Actually, they would only mention the latter one, but not even one of the three arctic war winters. Was it the stress of war that the war winters were obliterated from their memory? Depending on the region, at least one of the three war winters was colder than the winter of 1946/47. No doubt, however, that the second winter after the armistice in 1945 was an arctic in North and Central Europe (North Sea countries), and ranks very high in the list of cold winters.

General features of the 'arctic peace winters'

Most relevant aspects seem to be the following:

- They were late-winters; only the February temperatures were extremely low extending the cold spell into March.
- The air pressure over the Baltic massively increased in February (about 20mb).

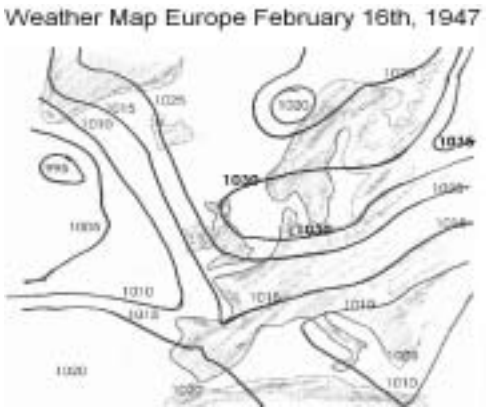
- The Northern North Atlantic had a lower air pressure, while increased temperatures were observed.
- In Western Europe (Britain) wind came from east-south-east[1].

A ranking of the coldest winters in Berlin during the period from 1814 to 1964 based on the monthly 'sum of negative daily means'[2] may give an indication:

Winter	Berlin, °C
1829/30	-791
1939/40	-636
1946/47	-567
1928/29	-503
1941/42	-474
1962/63	-474

It is particularly to note, that the winter 1946/47 was actually a late winter due to an extreme influx of cold air in February. This is well illustrated by the Danish climate conditions. While January 1947 was only 2,6°C lower then normal, the temperatures in February were 7°C lower then the long-term average[3].

Britain takes record



The winter situation in Britain can be taken as proof that a major cause for extreme weather conditions was the incapability of the seas around the British Isles to prevent the influx of cold continental air due to past and ongoing naval activities, e.g. mine sweeping. The situation is outlined in brief: It was a record cold month and one of the snowiest since the early 19th century starting in late January only. Temperatures dropped in parts of southern England to –21°C.
February was gloomy, windy and frosty throughout the month. In London the sun was shining less then 70% as usual, indicating that the seas were still acting. From the moment the dull weather disappeared, e.g. after 22nd February some parts of southern England, measured temperatures around –

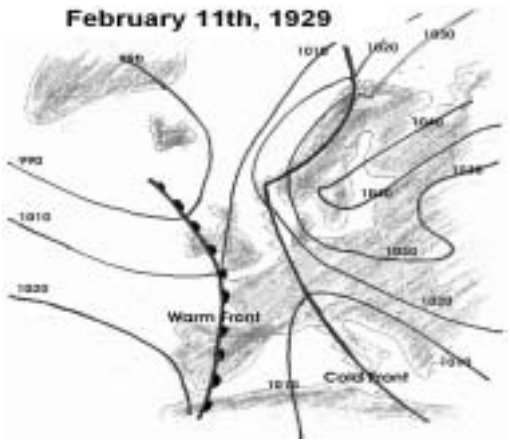
[1] Drummond [2] Lenke [3] Det Danske

20°C. The constantly low temperatures in spite of sky-cover-conditions February 1947 became the coldest February since records began in the 17th century.

The extreme conditions continued in March which was even more out of tune with average then February had been with severe snowstorms in most of England and Wales, ice storm in the South and minus 21°C in the northern part of the Isles. After mid March milder weather caused heavy flooding due to record precipitation three times the average in many parts of Britain. In London it was the third rainiest month since records were taken. Record holder is March 1916 with about 135 hours. By the end of February 1916 the German Kaiserreich announced that armed merchantman would be attacked without warning. In March 1916 German U-boats sank ships with a tonnage of 200.000 tons, or about 4 ships per day.

Winter of 1928/29

February 1929 was at many Middle European stations the coldest ever measured. The deviations were up to minus 8-12°C. In Greenland, however, it was the mildest since observation started[4]. According to Rodewald[5] the tropical Atlantic was the source of that extreme winter.



It has been explained elsewhere that the severe warming at Spitsbergen in 1918 'spread west' and southwards over the subsequent decade (A), and that in 1928 a massive inflow of Atlantic Gulf water streamed northwards to the Norwegian Sea[6].
That the North Atlantic, respectively the Northern North Atlantic provided the principle conditions for this event can be taken for sure. What surprises is that this still has not been scientifically established nowadays although the event occurred 85 years ago. It should be noted that the time period 1928/29 is not on the list of El Niño years.

Further details: (A) Warming of Europe, 5_15; (B) Lost west-wind drift, 2_12.

[4] Groissmayr, 1944 [5] Rodewald, Winter II [6] Helland-Hansen

Winter of 1946/47

US meteorologist Jerome Namias gives a detailed account in 1947 about the winter of 1946/47[7]. According to his observation, the winter generated a large variation from normal, especially in England, where the climate became continental rather than the normal maritime in winter 1946/47. He establishes, that, in the Northern Hemisphere there remained only two warm areas in February 1947, one in the North Pacific (Alaska), and the other and larger, in the North Atlantic (including the North Pole), while the rest was subject to an extreme arctic cold spell, down to Florida, the Mediterranean, and Japan. Namias attributes the February warmth in Alaska as being associated with the diverted warm maritime Atlantic air. He notes that in the United States extensive mildness prevailed in December and January, giving way to a severe winter cold in February, and describes the features of the January weather chart as follows:

1. The westward intrusion of the Siberian High into Europe (+17mb anomaly over Scandinavia).
2. The absence of the normal low-pressure trough and the storm track from the Icelandic Low north-eastward, and instead, the trough from the intense Icelandic Low through Davis Strait into the Polar Basin.
3. The imprisonment

[7] Namias [8] Lenke

of the North American Polar Continental anticyclone in northwest Canada and the resultant domination of the United States by Pacific air masses and the Great Basin anticyclone.

4. The weakness of the western cell of the Aleutian Low.

Sea ice conditions in the North Sea were more severe than in the Baltic Sea. Icing started early in the south of the Helgoland Bight (December 12th), and at the west coast of Denmark (December 22nd), becoming particularly severe in the eastern North Sea, Skagerrak, and in the Danish Belt passages to the Baltic Sea, being the heaviest icing in the time period 1896-1955.

A detailed assessment of the air pressure situation over the North Atlantic indicates that the seas around Britain had too little heat reserves to prevent cold continental air to reign the air column over the North Sea and English Channel.

Difference between war and peace winters

- War winters were long, lasting from December to March; see for example: Northern Europe plunged into arctic conditions – winter 1939/40 (2_11); the peace winters developed their extreme cold spell not before February[8].
- Peace winters were rooted in the Northern Atlantic. The war winters of 1939-42 were initiated and sustained in the North and Baltic Sea, as explained in a number of chapters: Sea war events (2_13), North Sea (2_16), Baltic Sea (2_17) and Lost West Drift (2_12).
- During war winters the wind in Britain came from NE-directions; while in the peace winters it came from SE-directions. While the latter situation occurred during several cold winters in England (1904, 1895, 1891, 1879, 1870 and 1845), the NE-directions occurred before 1940, the last time in 1841 and another time in 1814 and in no other year since such observations were recorded since 1788[9].

Can the winters of 1928/29 and 1946/47 prove something?

With regard to the winter of 1946/47 it seems possible to see a correlation between WWII activities at sea and a temporary shift in the sea water structure of the North Atlantic. The turmoil at sea had not stopped long before the huge amount of 'stuff', including bombs, shells and 'chemicals, was deposed in the sea, and huge mine sweeping operations continued for some more time after the armistice.

[9] Drummond

The following record is presumably not a mere coincident. At Greenwich Observatory the temperature was –26.5°C on April 4th 1946 (The Independent, 11th April 1997, p.1). This shows that neither in April 1946, i.e. 10 months after the war had ended, had the Western European seas and ocean areas fully recovered.

The winter of 1928/29 is different as its occurrence took place 10 years after WWI had ended. A link could nevertheless exist via the 'spread' of the severe warming during the 1920s.

An interesting aspect remains to be mentioned. Both winters, of 1928/29 and of 1946/47, seem to stand quite 'solitary' since the Little Ice Age ceased at about 1880. They may have something to do with a 'warming variation in the Northern Atlantic'. They had a comparable pattern and severity and their appearance lasted for only one winter. They have left no mark in climate change incidents. In a warming world since 1880, only these two winters were associated with the coldest February temperatures. Over such a long time period they are still very close to the two World Wars.

A very interesting aspect is certainly the El Niño phenomenon that has been reckoned in a previous chapter (West wind lost, 2_12). While 1946/47 is regarded as El Niño period, 1928/29 is listed as an anti-El Niño event (La Niña). Further research would be helpful as it will subsequently support the 'war at sea' thesis.

Summary

It could be shown that some sort of anomaly in the North Atlantic made the winters of 1946/47 and 1928/29 abnormally cold. There is no further need to look for clues whether the circumstances of these winters affect the main theses of this investigation. That is not the case.

The result of this elaboration seems nevertheless quite clear. The North Atlantic and the North Pacific generated a situation where polar air masses pushed far to the south.

While the winter of 1928/29 seems at best be distantly connected with the severe warming at Spitsbergen in 1918 without any direct link to WWI ten years earlier, this cannot be said with regard to the late but arctic winter of 1946/47. The latter can be considered a direct consequence of the just ended WWII due to its timing, location and circumstances.

