THE COLD AND WET YEAR 1695 — A CONTEMPORARY
GERMAN ACCOUNT

S. LINDGREN
Inst. of History, University of Helsinki, Helsinki
and
J. NEUMANN
Dept. of Atmospheric Sciences, The Hebrew University, Jerusalem

Abstract. After describing briefly some of the outstanding features of the unusually cold and wet year 1695, one of the coldest years of the Little Ice Age, an annotated translation is presented of a contemporary review of the unusual weather events of the year in Europe. The original was published in 1702 in Frankfurt am Main, Germany, in vol. XIV of the series Theatrum Europaeum. The annotation relates to the historical events of the year that were substantially affected by the weather, events to which rather obscure references are made in the aforementioned contemporary account. In addition to the fact that the contemporary review describes the uncommon weather conditions of 1695, it appears to be the first extended weather review in history.

1. Introduction

Sporadic information on weather conditions abound in the general literature of the past centuries. Witness to this is the great collection of excerpts published in four volumes by Weikinn (1958-61), covering the period from the beginning of the Christian Era down to 1750, encompassing several European countries. Virtually all these excerpts relate to unusual weather occurrences and it is probably correct to assert that no extensive and connected account of weather covering any extended period such as a year, appears to have been published prior to the end of the 17th century.

It seems that the first of a kind of 'Annual Weather Review', or more correctly, a 'Review of Unusual Weather Events of a Year', is that published in volume XIV of the German serial publication Theatrum Europaeum (1702; see Section 3) in regard to the year 1695 — and only in regard to that single year. Actually, all volumes of that series print a few paragraphs on unusual weather occurrences during the period under review in any given volume (Weikinn quotes volumes of the Theatrum Europaeum quite frequently), but none contain a connected account such as is found in volume XIV. As the unnamed author(s) of that review make(s) it clear in his (their) opening sentences, the justification for writing the article is in the severe weather of the year.

In view of the facts that the review in volume XIV of the Theatrum Europaeum seems to be the first of its kind in history and that it relates to one of the coldest years in recent centuries (see next Section), including the Little Ice Age, we thought it worthwhile to prepare an English translation of the article. And, in view of the fact that the review makes rather obscure references to historical events that were affected by the years's
rigors, we shall provide annotation on the events where these appeared to be of interest for a better appreciation of the review.

2. Weather of the Year 1695

The 1690s form, perhaps, the coldest decade of recent centuries. In Iceland the decade produced eight ‘severe years’ (Bergthórsson, 1969, Figure 1), the definition of a ‘severe year’ being a year in which there was starvation with people dying from lack of food or a year when drift ice reached Iceland’s southwestern coast. No other equally long period of the over one thousand year long record (from 900 to beyond 1900) had such a high number of ‘severe years’. In London in the period 1671-1720, the 1690s registered the largest number of days with snowfall (Manley, 1962, p. 50).

The cold of the decade was not due to the winters alone: These years were characterized by cold springs and summers as well. A somewhat uncertain estimate of the summer temperatures is that they were about 1.5°C lower than the average for 1580-1790 (von Rudloff, 1967, Figure 22b). One of the grave consequences of the cool and very wet summers was the development of extreme cases of famine and attendant high rates of mortality such as occurred in France, northern Italy, Scotland, Norway, Finland, Estonia and, to a lesser extent, in Sweden (Dyrvik, Mykland and Oldervoll, 1976; Jutikkala, 1955; Neumann and Lindgrén, 1979; Smout, 1978). Finland lost 30% of its population and Estonia 20% in consequence of the severe weather and famine conditions that set in in 1695. In Norway, too, the first grave crisis occurred in 1695 when the harvest failed almost completely, causing a desperate lack of food and famine with a high rate of mortality (Dyrvik, Mykland and Oldervoll, 1976, p. 11). In Scotland already the years 1693-94 produced poor crops in several areas but the situation turned into a national crisis in the autumn of 1695 after a bad harvest (Smout, 1978, pp. 164-167).

Within the above cold and wet decade, 1695 excelled in its harshness in many areas of Europe (Jutikkala, 1955; Le Roy Ladurie, 1972; Neumann and Lindgrén, 1979; Weikinn, 1961). In the temperature series for central England for the period 1659 to 1973 (Manley, 1974, Table I), 1695 constitutes the second coldest year of the series (though it should be added that the figures for the years 1659 to 1720 are somewhat less trustworthy than for the rest). In regard to frequency of snow in London, 1695 is the only year to rival 1784, 1879, 1917, and 1947 (Manley, 1962, p. 50).

Many of the European rivers froze over in 1695. Among them was the Thames which did not freeze frequently: Records for London (Lamb, 1977, p. 568 and p. 570) indicate that during the period 1403-1963, the Thames developed an ice cover but in 25 cases (years). Records of freezing and ‘unfreezing’ are also available for the river Tornio (Johansson, 1932, pp. 26-29) in northwestern Finland, on the Swedish border. The dates of freezing over are reported from 1716 (with some gaps); those for the break-up of ice from 1693 (with some gaps). Boths sets continue to 1906. The latest date in the year in the whole series for break-up is that for 1695, viz. June 5. The year with a nearly as late date is 1810 (June 3) and in 1740, which was a particularly cold and harsh year in western Europe (the coldest year of the temperature series for central England 1695-1973, see