



Air temperature in Toruń (Poland) in the period 1885-1889

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Daily meteorological data from Toruń (Poland) for the period from 1885 to 1889 were published in yearbooks by the Königlich Preussischen Meteorologischen Institut. Air temperature measurements were conducted three times a day (at 6 a.m., 2 p.m., and 10 p.m.) using a Celsius scale thermometer. The daily data from the 19th century were quality-controlled and compared with corresponding data from the contemporary period (2001-2005). Additionally, monthly historical data were compared with all available and standardised air temperature series (1871-2010). The mean annual air temperature in the analysed period (7.1°C) was approximately 0.6°C and 1.6°C lower than the same variables in the periods of 1871-2010 and 2001-2005, respectively. The coldest year occurred in 1888 (6.5°C), whereas the warmest were the years of 1887 and 1889 (both 7.4°C). The highest temperature measured in Toruń after 1921 was 38.2°C and occurred on 11th July 1959, whereas the lowest temperature was -32.4°C , recorded on 19th January 1963. The maximum air temperature in the analysed period reached 34.1°C on 11th June 1889, whereas the minimum temperature was -23.7°C on 2nd January 1888. On average, the annual mean temperature was mainly influenced by winter and summer thermal conditions. The warmest month in the analysed period was July (17.6°C), which however was nearly 2°C cooler than in the contemporary period. On the other hand, January was the coolest month in both periods. An increase in the mean temperature of this month between the historical and the contemporary period reached as much as 2.6°C . In 1885-1889, the highest mean monthly day-to-day variability of air temperature was observed in winter and spring. In contrast, the lowest one was observed during summer. Although the annual cycle in variability was similar to the one observed at present, the values were greater in the historical period. In the contemporary period of 2001-2005, mean daily air temperatures exceeding 5.0°C were more frequent than in the historical period. The most diverse distribution of frequency of air temperature calculated for 5°C intervals appeared in spring. The analysed period was generally cooler than the 20th and the beginning of the 21st century.