

## FOREWORD

After the dynamic developments in historical climatology and palaeoclimatology in the last half a century, some major syntheses have been published in recent years, such as *The Palgrave Handbook of Climate History* (2018), *Old World Drought Atlas* (Cook et al., 2015) and *Natural proxy records of temperature- and hydroclimate variability with annual resolution from the Northern Balkan–Carpathian region for the past millennium – Review & recalibration* (Kern et al. 2016).

This special issue of *Economic- and Ecohistory* aims to add some particles of unequal size to the puzzle of the history of climate from the eastern Adriatic in the south to the Carpathian Basin in the north and from the south-eastern Alps in the west to the Carpathians in the east. Namely, there exist great differences in the state of historical climatology research in various parts of Europe. Concerning the early modern period as the timeframe European historical climatology has most focused on, “[s]ome countries (e.g., the Czech Lands, Germany, Switzerland, the Netherlands, and Iceland) are much better studied than others[.]” but “subcontinental regions may undergo multidecadal and longer periods of sustained temperature deviations from the continental mean.”<sup>1</sup> There have been significant uncertainties in historical climatology of the study area especially due to many contact zones between different patterns of air mass circulation and different climate types. For instance, there exists extensive research on the year without a summer of 1816<sup>2</sup> and the fact that “[t]he Carpathian Basin ... also faced exceptional cold and persistent flooding[.]” so that “[t]housands of houses were submerged and collapsed under weeks of rain” has recently been integrated into a referential synthesis on the Tambora crisis.<sup>3</sup> Nonetheless, there is still research potential to fully understand this crisis’s dimensions in (South-)Eastern Europe, as demonstrated by Dorin-Ioan Rus in this journal issue.<sup>4</sup>

Contents of studies in this special issue range from (1) historical weather and climate reconstructions, (2) impacts of weather anomalies on human societies, (3) impacts of historical climate change on ecosystems (a topic that deserves much more research attention in the future, in older periods in particular), to (4) historical human perceptions of and knowledge about weather and climate. The timeframe of this special issue ranges from the Late Middle Ages to the early 21<sup>st</sup> century. Some of these studies are fundamental contributions; others are solid starting points for further, more contextualized research.

It is well-known in international historical climatology that the state of research is better in the Carpathian basin than elsewhere in the designated study area.<sup>5</sup> However, there also exist some thorough article-length studies in English by Slavic authors that are often overlooked.<sup>6</sup> Furthermore, some publications in local languages include relevant data that have not been made accessible to the international scientific community yet. For instance, as early as 1967, Yugoslav historian Bogumil Hrabak published a preliminary historical climatology paper inspired by Emmanuel Le Roy Ladurie. Hrabak’s paper includes, for instance, his finding from the archives in Dubrovnik that there was cereal harvest failure in Albania in 1540, and Hrabak already stated that a drought event was seemingly the reason for this harvest failure.<sup>7</sup> This information is relevant even in the context of the present state of research into the

<sup>1</sup> Pfister et al., 2018, 265–266 (quote), 274 (quote).

<sup>2</sup> Pfister et al., 2018; see also Čeč, 2015, for Slovenian territory.

<sup>3</sup> Pfister, and White, 2018, quotes from pages 553 and 556.

<sup>4</sup> Rus, 2020.

<sup>5</sup> Pfister et al., 2018.

<sup>6</sup> A short selection: Penzar, and Penzar, 1997; Kužić, 2006; Kužić, 2007; Mrgić, 2011; Mrgić, 2018; Zwitter, 2015.

<sup>7</sup> Hrabak, 1967, 27–28.

great 1540 drought due to the lack of data from South-Eastern Europe.<sup>8</sup> Recently, reliable evidence of the 1540 drought in what is now Slovenia has also been found<sup>9</sup> – totally expected but relevant because data from the territories between Italy and Carinthia in the west and eastern Carpathian Basin in the east were still missing when the European overview paper on the 1540 drought was published in 2014.<sup>10</sup>

The diversity of topics is matched by a diversity of approaches. This papers collection highlights the vibrancy, diversity, and relevancy of the historical climatology from the eastern Adriatic in the south, the south-eastern Alps in the west to the Carpathians in the east.

Hrvoje Petrić, editor  
Žiga Zwitter, guest co-editor

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<sup>8</sup> Wetter et al., 2014.

<sup>9</sup> Zwitter, 2021, forthcoming: a total failure of autumn-sown cereals, followed by a bad harvest of millet as stubble crop is mentioned in 1540 in contemporary sources from the seignury of Prem. A high princely official in the province mentioned in his correspondence on this event that harvest in the area is usually bad in case of hot weather. Dendroclimatology supports the thesis that the extreme drought was not more explicitly mentioned in these sources only because everyone experienced it; it was self-evident. Namely, a detailed analysis of oak wood identified extreme drought there in June 1540 (Čufar et al., 2008, 608–609, 613). Half a century later, the extreme drought of 1540 (“Siccitas magna anno 1540.”) was noted by the bishop of Ljubljana – a non-contemporary who diligently studied archives and was highly interested in the weather – he became an important weather observer in the European context (Zwitter, 2013). Even though each of these pieces of information itself was insufficient, they altogether build firm evidence of the 1540 drought in Slovenian territory.

<sup>10</sup> Wetter et al., 2014.

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