Looking on the Holocene climatic markers (8.2, 5.9, 4.2 ka BP and others) and tracing their impact on past cultures and civilizations in the Nile Basin and beyond

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An International Focus Group

Neolithisation of the southern Carpathian basin – 8.2 ka and 6.0 ka BP possible climate induced stress indicators

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Temporary and permanent flood areas – before melioration in 1830

www.om.hu/research/framework5/ist/copenhagen/SZLAVIK/FMIS_Hungary.ppt

(according to Budja 2007)
April 2016 - Geoarchaeological prospection of Slavonia region
joint research of the Institute of Archaeology, Zagreb, the Faculty of Geology, University of Warsaw and the Institute of Archaeology, Cardinal Stefan Wyszynski University in Warsaw

work on known archaeological sites (Neolithic, Iron Age) and one presumably Neolithic site (latter confirmed by the excavation)

Excavations started in 1997 and are still conducted
Early Neolithic Starčevo culture

80 cm sediment covering the sites

very thin layer of sediment covering the site

Slavonski Brod – Bjeliš

Slavonski Brod – Galovo

Zadubravlje – Dužine

80 cm sediment covering the sites
OxCal v4.2.4 Bronk Ramsey (2013); r5 IntCal13 atmospheric curve (Reimer et al. 2013)

Calibrated date (calBC)

Zadubravlje – Dužine
- 3 m elliptical artificial elevation (Krznarić Škrivanko 2015: 371) surrounded by double ditch (Krznarić Škrivanko 2015: 381);
- new excavations were carried out from 1996 to 2008 in 13 campaigns;
- in 2010 geophysical survey and geological sampling was carried out (Mušič et al. 2011; Krznarić Škrivanko 2012a; 2015: 372; Bakrač et al. 2015);
- eponymous site of late Neolithic Sopot culture
- in 2008 at the bottom of the excavated area an early Neolithic Starčevo culture pit was found
(Bakrač et al. 2015)
Vinkovci – Sopot
early Neolithic layer
samples from the pit
and layers covering it
Bršadin – Pašnjak pod selom

- first excavation in October 2016
- late phase of the late Neolithic Sopot culture
- site situated in the river bed
Overview of 14C ages (modified after Weninger et al. 2014: 9, Fig. 4; Botić 2016: 192, Fig. 9)

8.2 ka

Budja 2013: 42, Fig. 1
Budja 2007, 195, Fig. 3 – The hydrological tri-partition of Europe. Shaded area marks mid-European zone with wetter conditions and marked lake-level maxima (+) and minima (-) that correlates to 8.200 calBP cold event. AN – lakes Albano and Nemi, L – Le Locle, M – Lago di Mezzano, Mo – Lago Grande di Monticchio, S – lake Siles, Sc – Schleinsee, SJ – Saint-Jorioz, So – Soppensee, T – lake Tigalmamine, V – Lago di Vico (from Magny et al. 2003, Fig. 2)
Culture history-informed interpretative chronozone model of the spread of farming across western Eurasia. YD – Younger Dryas; PBO – pre-Boreal oscillation; EHE – early Holocene event; 6.2-E – 6.2 event; 5.1-E – 5.1 event; LIA – Little Ice Age; CE – cold events; GDO – germination/dying-off events (modified after Gronenborn 2009: 98, Fig. 1)
Bánffy, Sümegi 2012: 58, Fig. 1 – The CEBAEB (Central European-Balkanic Agro-Ecological Barrier) in the Carpathian Basin, with Early Neolithic cultures and sites indicated. 1. Körös culture distribution area; 2. Starčevo culture distribution area; 3. Criș culture distribution area. Squares: marginal sites along the CEBAEB.
late Iron Age
(c. 1800 BP/AD 200)
late Neolithic/early Eneolithic
(c. 6200 BP/4300-4200 BC)
early Bronze Age
(c. 4200 BP/2400-2200 BC)

Stipanovci – Planina 1
Concluding remarks

- appearance of early Neolithic Starčevo culture not much before 6000 BC
- the first phase – Sopot site; after a short period of settlement at this site, an episode of flooding (?) sealed of the site for another 1000 years
- the second phase – shortly after the abandonment of Sopot site, sites Zadubravlje and Galovo were settled; most of the dates are from 5850 BC and younger although Zadubravlje shows a few older dates
- Galovo and Zadubravlje sites underwent one or several flooding (?) episodes at their end but Bjeliš site has almost no traces of sediment covering it
- the beginning of Starčevo culture can be linked to the end of the 6600-6000 BC period of Rapid Climate Change (8.2 ka calBP) but it can’t be expected earlier than 6100 BC

“The moment the Neolithic left the Aegean basin, which appears to have occurred not earlier than 6100 calBC, it apparently took little more than 100 years to become established at sites in Serbia, Bulgaria, and Romania, and little more than around 200 years even to have reached the Pannonian Basin.” (Weninger et al. 2014: 6)

- radiocarbon dates of dendro samples coincide with the 1st and 2nd phases of neolithisation
• the end of early Neolithic Starčevo culture and the beginning of late Neolithic Sopot culture can be linked to 7.1 ka calBP or 5.1 event (Gronenborn 2009) (5300-5100 BC) – beginning of north African desiccation

• settlement positions at the end of the Neolithic possibly indicate dryer conditions (Bršadin – Pašnjak pod selom site); large tell sites were abandoned – dryer conditions interfered with known way of life in the marshy areas?

• on some sites the change of site positions may also indicate change in environmental conditions at various periods of prehistory (Stipanovci – Planina 1)

• climate induced stress indicators are circumstantial for now – further research needed to establish climate/ecological conditions during the Neolithic in the southern part of Carpathian basin