



Crises, collapse and change in the occupation patterns of the Caucasus during the Holocene: environmental and human factors

A three-day meeting organised in the framework of the IRN WIT

This meeting is dedicated to the memory of Prof. Michèle Casanova

Paris, November 3rd-5th, 2021

The Neolithic-Iron Age time span is characterized by a number of ruptures in the cultural sequence, which in certain cases led to the collapse of the agro-pastoral systems.

The first rupture is illustrated by the *ca.* 500 year-hiatus that is attested throughout the Caucasus between the end of the Neolithic (*ca.* 5000 BCE) and the Late Chalcolithic (*ca.* 4500 BCE): whether it be in the mountains or in the valleys, very few sites dating to this period, which has been identified as the Early Chalcolithic, have so far been found either in the Kura or the Araxes basins, while most of the recorded sites seem to be mobile pastoral camps.

A second rupture is perceptible at the end of the 3rd millennium (2300-2000 BCE), when most valley settlements were abandoned, while the number of cemeteries and kurgans steeply increased in the uplands. This particular aspect of Caucasian history has already been addressed during a recent meeting (WP#2, on-line, November 2020) from the angle of pastoralism; it will now be discussed from the point of view of human/environmental interactions in order to make clear the circumstances that led to what has been termed “the 4.2 ky collapse” (Weiss *et al.* 1993).

Last but not least, a third episode of upheaval, termed the “3.2 ky crisis”, has been described across the Caucasus, the Near-East and Anatolia: in the Caucasus, this time period is characterized by the migration of human groups, possibly coming from the North and the Eurasian steppes, from the 13th millennium BCE onwards.

Since the last two episodes of rupture have been correlated with climatic change by a number of scholars (Courty and Weiss 1997 {4.2 ky crisis}; Kuzucuoğlu 2015 {3.2 ky crisis}), this raises the question of the relationship between cultural evolution and environmental factors. Moreover, the production of a wealth of environmental data in the framework of the *Gates* (<https://caucasus.hypotheses.org/lia-gates>), *Mines* (<https://www.archeorient.mom.fr/recherche-et-activites/appels-d-offre-et-contrats/anr-mines>) and *Orimil* projects (<https://caucasus.hypotheses.org/anr-orimil>) gives us the opportunity to study these questions in depth in the light of the available archaeological documentation.

Three workshops have been organised accordingly. These workshops were originally planned to take place separately on three different days in three different places, but the uncertainties inherent in the Sars-Cov2 pandemic have been conducive to a somewhat simpler set up.

It also appeared that there is more point in addressing the matter of human/environmental interactions in a single meeting, since this research question combines data from different time scales: environmental data are certainly more meaningful when analysed over a wide time span. Each workshop has been organised by a different team stemming from the IRN WIT, but the papers will be presented in a way to favour comparisons between the three time periods under study.

3.1. *The Early 5th millennium occupation gap*
(H. Helwing, C. Marro) – **Workshop 1**

Most archaeological settlements in the south Caucasus are fairly shallow and contain one, at the most two, occupation phases. However, relatively large sites with occupation levels encompassing several millennia occasionally occur, as at Aratashen, Aknashen and Kültepe I in the Araxes basin. Interestingly enough, none of these sites, which first developed during the Neolithic, has yielded occupation levels dating to the first quarter of the 5th millennium; they were all abandoned between 5300 and 5000 BCE. This is also the case of the single-period Neolithic sites of Arukhlo in Georgia or Göy Tepe and Kamil Tepe in Azerbaijan, which were also abandoned at the end of the 6th millennium.

The simultaneous end of most Neolithic settlements in the Caucasus suggests wide-ranging regional change, which may correspond to some kind of a collapse. Judging by the present evidence, the demise of this socio-economic system seems to have been fairly abrupt, which of course raises many questions: how should this phenomenon be interpreted? Is it linked to some kind of entropy in Caucasian Neolithic societies? Or are there some external factors involved, among which population movements, environmental stress, or changes in interregional dynamics may be considered?

Whatever the answer(s), it should be noted that significant changes took place at roughly the same period in the Near-East, with the spread of the so-called Ubaid culture, originally a South-Mesopotamian phenomenon that started to replace the indigenous Halaf cultures of northern Syria and Upper Mesopotamia ca. 5000 BCE.

By examining the available archaeological and environmental data, this workshop aims at casting some light on the possible circumstances that could explain the demise of Caucasian Neolithic societies, at the same time as examining the available data collected from Early Chalcolithic Caucasian sites.

3.2. *The end of the 3rd Millennium BC or the “4.2. ka Collapse”*
(C. Kuzucuoğlu, C. Marro, G. Palumbi) – **Workshop 2**

Cases of cultural “collapse” at the end of the 3rd millennium have been hotly debated in archaeology ever since H. Weiss and his team published a paper in 1993 claiming that an “abrupt event”, first linked to a volcanic eruption (Weiss *et al.*, 1993), then to a series of severe droughts (Courty and Weiss 1997), was responsible for the socio-economic disruption of the Syrian Djezireh towards 2200-2100 BCE. The very existence of this collapse throughout the Near and Middle East has been questioned (Marro and Kuzucuoğlu 2007), but marine cores from the North Atlantic ocean do record episodes of increasing aridity from the end of the 4th millennium onwards (Kuzucuoğlu 2007). The concomitant socio-economic change observed in the highlands, in particular in the Caucasus, towards 2200-2000 BCE (Özfirat 2001) is thus of particular interest: this issue will be discussed in the light of the new data produced by the Abbas core drilled in the Araxes valley in Nakhchivan (Abbas), in combination with the environmental data recently obtained from eastern Anatolia (Lake Van), Jikurebi and Tetri Tba cores collected in the Kura Basin in Georgia, and available archaeological assemblages (Kiz Kale in Azerbaijan, *Aragats project* in Armenia).

3.3. The 3.2. ka Crisis

(G. Bedianashvili, C. Kuzucuoğlu) – **Workshop 3**

A “crisis” at the end of the 2nd millennium BC was first identified in the Eastern Mediterranean realm by Fernand Braudel (1969). In the Ancient world, from Europe to Asia, this period corresponds to the transition between the Bronze and the Iron Age; it occurs *ca.* 1200-1100 BC. In South-Western Asia and the Eastern Mediterranean, this transition saw the disintegration of urban and complex civilisations that formed a regionally integrated economic system; they dwindle back to local dimensions (Kuzucuoğlu, 2015). The causes behind this change have also been attributed to climate change: just as the 4.2. ky event, it is reported globally through a series of marine and land records (Kuzucuoğlu 2007). Unlike the 4.2. ky crisis however, its impact on the highlands and the Caucasus is above all perceptible through waves of migrations, not through the abandonment of settlements. This is self-explanatory, since few settlements developed in the highlands after the collapse of the Early Bronze Age system *ca.* 2300 BCE – this situation lasted well into the Late Bronze Age (*ca.* 1400 BC), when cemeteries and hilltop fortresses became the main features of the late 2nd millennium landscapes. New populations thus migrated to regions where nomadic pastoralism was still the norm.

Interestingly enough, migration waves (the « Sea Peoples »), possibly triggered by climate change, are also considered to be responsible for the socio-economic upheaval attested in many places of the Near East, in particular in the Levant *ca.* 1200 BCE. These hypotheses need to be examined in detail by combining Caucasian, Anatolian and Near Eastern data with a view to unravelling the environmental from the human factors in these scenarios.