



PASC SCPA 5th annual meeting 2020

Banff, AB

Held in conjunctions with CAPA/ACAP conference

Friday, October 25

The Kinnear Centre, Room 201

1:30-4:15 Palaeoanthropological Society of Canada/ Société canadienne de paléanthropologie

- 1:30-1:45** Roksandic M, Lindal J, Radovic P, Mihailovic D. New Middle Pleistocene material from Serbia and its implications for human evolution in Europe
- 1:45-2:00** *Lindal J, Radović P, Marković Z, Alaburić S, Roksandic, M. The first fossil of a non-human primate from Serbia
- 2:00-2:15** Viola B, Kolobova K, Chargynov T, Krajcarz MT, Krajcarz M, Fedorowicz S, Shnaider S, Krivoschapkin AI. Excavations at Sel'ungur cave, Kyrgyzstan: an update
- 2:15-2:30** Schroeder L, Hlazo N, Pickering R, Kibii J, Ackermann RR. New research at the *Paranthropus* bearing site of Gondolin
- 2:30-2:45** Bundala M, Saanane C, Kinyanjui R, Cote S. A preliminary phytolith analysis of the Middle Pleistocene sites from the Manyara Beds, Northern Tanzania
- 2:45-3:00** Cameron ME, Stock J. Regional variation in body size and shape properties among Holocene Later Stone Age Southern Africans

1. A preliminary phytolith analysis of the Middle Pleistocene sites from the Manyara Beds, Northern Tanzania

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This study is aimed at establishing the past environment of a poorly studied stratigraphic interval in the Middle Pleistocene of Tanzania from 780,000 to 400,000 years ago using phytolith remains from the Manyara Beds.

The Manyara Beds near the vicinity of Makuyuni village are known to be rich in Pleistocene fossil vertebrates (including hominins) and archaeological artifacts, and also document the evolution of a major

paleolake basin. The Manyara Beds are critical for understanding the ecological landscapes related to the emergence of *Homo heidelbergensis*, and the technological transition from Early to Middle Stone Age tools in Africa. The geology, sedimentology, and stratigraphy of the Manyara deposits are fairly well understood, but little is known about the site's paleoecology. Here we present the results of our pilot field work in summer 2019 in which we conducted surveys to map and collected sediment samples for phytolith analysis. This preliminary field season was done to identify localities with high phytolith concentrations and to distinguish hominin activities (archaeological sites) versus non-hominin occupation area (ancient profiles). Sites with high phytolith recovery will be preferably screened during the next stage of fieldwork. A total of 25 samples collected from both the Upper and Lower Manyara Beds were available for this analysis from: MK 4, MK 17 E, MK 4 B, MK 4C, MK 9, MK 19, and MK 16. Phytoliths were extracted following the methods of Katz et al., (2010). Microscope inspection and counting were done using polarized light microscopy at 40x magnification. The identified morphotypes were described according to the descriptors from the International Code for Phytolith Nomenclature 1.0. Our results show that the Manyara Beds have sufficient phytoliths, and that the majority are in a good condition to be exploited for this study. Also, we were able to detect a significant spatial variation in both Lower and Upper Members. Phytoliths from Lower Members depict a mixed environment while those from Upper Member depict a grassland environment. This difference has important implications for interpreting early hominin activities at the Manyara Beds.

2. Regional variation in body size and shape properties among Holocene Later Stone Age Southern Africans

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Southern African Holocene Later Stone Age (LSA) human skeletons from the Mediterranean-type Cape coast are small-bodied in terms of stature, body mass, and body breadth. There is, however, some temporal variability on the Cape coast as reduced body sizes are evident during the mid-Holocene period of 4,000–2,000 BP. This pattern may be linked to higher population stress impacting these foragers due to increased mid-Holocene population densities. Previous research indicates Holocene Cape coast, Southern African central interior, and Namib Desert individuals share the small-bodied phenotype, however, the amount of body size variation among these groups has not been extensively explored. There may be body size variation within this Southern African small-bodied context due to developmental plasticity in response to diverse environmental conditions and subsistence strategies. Herding strategies were incorporated by the late Holocene groups who lived in the semiarid central interior and the hyperarid Namib Desert. Interactions between local ecologies and subsistence strategies may have impacted adult body size phenotypes. Quantifying variation in body sizes and shapes among these southern African groups may clarify the range of variation expected among small-bodied individuals due to ecological and subsistence strategy variation. This paper will examine if body sizes and shapes, including linear dimensions and limb proportions, vary among Cape coast (n=113), central interior (n=63), and Namib Desert (n=17) individuals. The degree of body size and shape variability among these groups will be quantified using univariate and multivariate analyses of osteometric data. Body sizes were smallest among central interior individuals and Cape coast individuals dating from 4,000–2,000 bp, indicating that growth constraints arising from unpredictable resource availability in the central interior and population stresses on the Cape coast may result in similar yet smaller body sizes. Body sizes were comparable among Namib Desert individuals and Cape coast individuals from outside the mid-Holocene period of reduced body size, indicating that beneficial conditions for growth and development may have been maintained in both foraging and herding contexts in diverse ecologies.

3. The first fossil of a non-human primate from Serbia

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Despite the long history of paleontological research of Neogene mammals in Serbia, no primate fossils have been identified in the country so far. Here we report the identification of two fossil primate teeth from Ridjake, a rich paleontological site in Western Serbia: an upper third molar with heavy occlusal wear and taphonomic weathering, and a well-preserved lower third molar with only minor damage to the cusps and root apices. We assessed the taxonomy of the specimens based on non-metric traits and bivariate comparisons of linear measurements, which show characteristics typical of papionins combined with a relatively large size. Combined with the early Villafranchian (MN16) age of the site, we attribute both teeth to cf. *Paradolichopithecus* spp. This represents the first non-human primate found in Serbia, and the only primate known from Serbia prior to the Middle Pleistocene. Along with recent hominin finds, the Ridjake specimens add to the growing primate fossil record of Serbia and highlight the need for continued research in this country.

4. New Middle Pleistocene material from Serbia and its implications for human evolution in Europe

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Recent discoveries in the Balkans have put a strong emphasis on this region of Europe as essential for our understanding of Pleistocene human migrations and interactions. With its plesiomorphic morphology, the early Middle Pleistocene hemi-mandible BH-1 from Mala Balanica suggested the possibility of two lineages in the area. Neanderthals were certainly present in the territory by 100 ka in a nearby Pešturina cave. The site of Velika Balanica (which together with Mala forms the Balanica Cave Complex) yielded a Middle Paleolithic lithic industry with a strong Charentian character. In 2017, four hominin fossils specimens were recovered from the geological layer 3 at Velika Balanica. The material, belonging to at least two individuals, consists of a permanent upper third molar (BH-2), a deciduous upper fourth premolar (BH-3), a maxillary fragment with the permanent first molar (BH-4), and a permanent upper central incisor (BH-5). The results of our preliminary analysis suggest morphological affinity with the members of the Neanderthal lineage. Since the layer 3 has been recently dated ~270 ka, Velika Balanica hominins could thus represent the earliest Neanderthals in the

Balkans. With the possibility of an early modern *Homo sapiens* presence in the Balkans older than ~210 ka, and with the admixture between modern humans and Neanderthals pushed back to more than ~270 ka, Velika Balanica materials could also prove to be crucial for our understanding of the complex later Middle Pleistocene hominin interactions.

5. Excavations at Sel'ungur cave, Kyrgyzstan: an update

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Sel'ungur in the Fergana Valley of Kyrgyzstan is a crucial site for our understanding of the Palaeolithic of Central Asia, as the only site where lithic, faunal and hominin remains were found stratified, in a likely pre-OIS 5e context. Excavations in the 1980s revealed an at least 8 m thick sequence of Late and probably Middle Pleistocene deposits with a rich faunal and archaeological record. The cultural layers were interpreted as Acheulean by the excavators (Islamov et al., 1988). The hominin remains described by Islamov and colleagues included six teeth and a child humerus. Since 2014, we have been conducting an international research project aimed at the re-examination of the old collections and the re-excavation of this important site, with a special focus on dating and site formation processes. Our results show that the site is likely significantly younger than assumed before, and that the most important part of the industry is an early Middle Palaeolithic, but in certain parts of the cave Upper Palaeolithic deposits are also present. In this short update from the field I will discuss the results of the new excavations, and their implications for our understanding of the Central Asian Middle Palaeolithic.