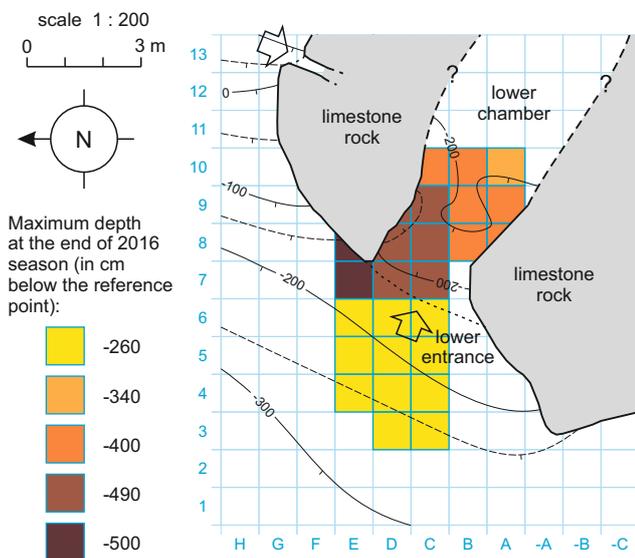


2016 excavation area in Perspektywiczna Cave

by Maciej T. Krajcarz

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During 2016 season (June 10th - August 20th) excavation works concentrated in trench „V” only (area around the lower entrance and the lower chamber of the cave; for localization of trenches see Newsletter #1). Excavated area covered square meters: D/3-6 and E/4-6 in the area in front of the cave, and A/8-10 and B-C/10 inside the cave. The sediments at square meter B/7 partially collapsed during winter, and were carefully collected, but the undisturbed part of this meter was not excavated. The maximum depth achieved at particular square meters in 2016 is shown on the plan below.



A huge sandstone nodule found in the sediments of Perspektywiczna Cave

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Sandstone nodules have been excavated from the sedimentary fill of Perspektywiczna Cave during each excavation season, and from the entire profile: from the topmost soil-like layer No. 1 to the sands of layer No. 11 lying on the limestone bedrock. Usually the size of nodules ranges from 1 to several centimeters. In 2016 excavation season the unusually huge nodule was found in layer No. 11. The nodule was 61 cm long and 27 cm wide, with ca. 81 cm of circuit in the half of its length, and weighted 42.6 kg. It was excavated on July 6th, 2016, from the square meter B/10 of the archaeological grid.



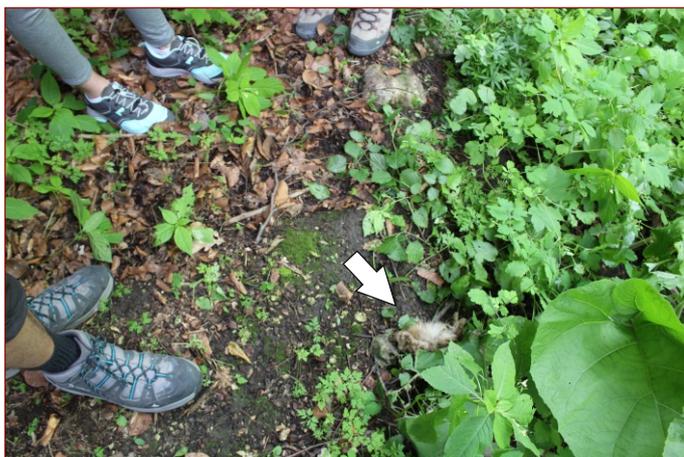
► The huge nodule still staying in the sandy sediment inside the cave. The excavation has already removed the sediment around, and after the photographic documentation and drawing on the plan the nodule will be removed from the trench.

The nodule was too heavy ► to be handled by a single man, therefore it was girded with a rope and lifted up on a pulley. Joint strengths of three men were necessary to elevate the nodule 2 meters up and move it out of the archaeological trench. After removal the nodule broke up into pieces.



Sandstone nodules are geological forms occurring in sands and sandstones, and are similar to so called „loess kindchen” or „loess dolls” known from loess deposits. They are created by cementation of sand grains when new minerals are formed in the sediment as an effect of precipitation from the percolating pore water. As in the case of other concretions, precipitation usually starts around the nucleus - an element of sediment that differs from the surrounding environment in terms of acidity or oxidizing potential. In case of cave sediments, the limestone clasts serve as nuclei, as due to diffusive dispersal of calcium carbonate from the clast to surrounding sediment the increased pH is formed around it.

Examples of sandstone nodules from Perspektywiczna Cave of more ordinary size ▼



▲ Dead juvenile rabbit (*Oryctolagus cuniculus*) found near Perspektywiczna Cave (in front of the entrance of the Shelter in Udorka Valley I) on July 7th, 2016. Animal has fallen down the several-meters-high cliff and may represent one of the aspects of bone accumulation in the cave. Photo by Magdalena Krajcarz

Instruction for authors

Around the Perspektywiczna Cave Newsletter is publishing any reports or other materials concerning the Perspektywiczna Cave or related subjects that may give background for any phenomenon studied in the Cave. The editor especially encourages to publish here:
 - excavation reports or their summaries;
 - reports of archaeological prospection and testing in the nearby

or similar area;
 - observations of natural and cultural processes and phenomena nearby, that might affect the Cave, either currently or in the past, or are predicted to be important in the future;
 - photographic reportages;
 - any other short reports, reportages, interviews, graphics or essays concerning the speleology, geomorphology, geology, climatology, archaeology, paleontology, biology, social

perception, and natural or cultural heritage of Perspektywiczna Cave and widely regarded relative issues.
 Please send finished manuscript proposals by email to mkrajcarz@twarda.pan.pl. All manuscripts are reviewed by experts. Only the positively reviewed manuscripts will be accepted for publication. After the acceptance the authors will be asked to confirm and correct the proof.

Geology, archaeology and paleozoology of the Perspektywiczna Cave sediments - state of knowledge 2016

by: Maciej T. Krajcarz, Institute of Geological Sciences, Polish Academy of Sciences, email: mkrajcarz@twarda.pan.pl

The current state of knowledge on the Perspektywiczna Cave sediments was presented during 50. Polish Speleological Symposium in Chęciny (October, 20th-23rd, 2016) in a form of poster. According to the presented materials (Sudoł et al. 2016), the sedimentary fill of the cave comprises several litho-stratigraphical series, bearing paleozoological and archaeological material:

Alluvia

The sedimentary sequence of the lower chamber starts with alluvial sands and gravels associated with the Pre-Udorka stream activity, which, at least periodically, flown through the cave. Interesting faunistic findings include a skull of muskox (*Ovibos moschatus*) – an animal inhabiting arctic tundra. The skull is damaged in a way typical for riverine transport.

Hyena den

Above the alluvia the sandy deposit occurs, rich in limestone clasts and bone debris, dated to the middle part of the Late Pleistocene (about 40-30 thousand BP). This layer has a typical character of a fossil hyena den, evidenced by numerous coprolites, fragments of gnawed and digested bones, as well as numerous remains of adults and young cave hyenas (*Crocota crocuta spelaea*). Inside lower chamber these sediments are in secondary position, but analogous deposits preserved in primary context were found in the upper chamber of the cave.

Colluvial series

In the lower chamber the above mentioned strata have been partially destroyed by subsequent erosion, followed by the movement of colluvial sediments from the interior of the cave, redeposited down the slope and strongly mixed due to washing and mud flows. This series contains loess, loess-like loams and debris-rich silty loams, including sediments with archaeological material. Lithics may be attributed to at least three cultural assemblages on the basis of techno-typological integrity, but also their spatial layout. However, the inventories were not yet found in the primary context. The occupation related to Mesolithic hunters is based on the presence of two flint backpieces and confirmed by radiocarbon dates obtained for charcoal from a relic of the hearth, and elk bone. The cultural level associated with Final Paleolithic, probably Magdalenian, is extremely interesting. Artefacts include flint blades and flakes (also technical forms), as well as chips and initial core forms. Raw material analysis reveals that lithics were produced

exclusively from flint of the best quality, mainly local Jurassic „chocolate”, „striped”, „from Góry Barańskie” and „from Wierbka” silicites, whose nearest outcrops are situated around 0.3-2 km from the cave. Analogous characteristics can be found at the nearby site of Paleolithic flint workshop in Kleszczowa (Pilica commune), in the area of Góry Barańskie hills (about 2 km from the cave). The most spectacular artefacts have been excavated from the stratigraphically lowest level identified with Upper Paleolithic, excavated at the base of the colluvial series. This inventory comprises massive perforators, blades and blade cores knapped from „chocolate” flint. All mentioned levels have been found so far only in secondary position. The latest radiocarbon dates obtained for the colluvial series suggest that the redeposition processes took place during Middle Holocene. Animal remains are not numerous here and exhibit mixed character, both in terms of preservation state and ecology, suggesting that variable sediments representing long chronology and different environmental conditions were included into the colluvial series.

Top deposits

The colluvial series is in many places cut by later anthropogenic pits. Their fill contains the material from lower layers, including mixed archaeological and paleozoological material. The sequence is topped by Late Holocene humiferous silts, containing the cultural levels from late Middle Ages and modern times, represented by fragments of ceramic vessels. A rich assemblage of animal bones accumulated by small predators is preserved in those sediments. Faunal complex includes forest and domestic mammals and birds.

Studies of Perspektywiczna Cave sediments were supported by the National Science Center, Poland, grant numbers: 2011/01/N/HS3/01299, entitled "Palaeolithic settlement of Wodąca and Udorka Valley (Częstochowa Upland) against the palaeoenvironmental background", and 2014/15/D/HS3/01302, entitled "Hunter-gatherer communities of the younger part of the Last Glaciation and Early Holocene in the middle part of Polish Jura - chronology, cultures and significance of the southern part of Ryczów Upland".

Reference:

Sudoł M., Krajcarz M., Krajcarz M.T. 2016. The results of 2014-2016 interdisciplinary research of the Jaskinia Perspektywiczna cave (Częstochowa Upland). *Materials of the 50. Speleological Symposium, 20-23.10.2016, Kielce-Chęciny*, pp. 145-146.

Reconstructed sequence of events in Perspektywiczna Cave - the last 50,000 years according to the poster presented during 50. Polish Speleological Symposium (Sudoł et al. 2016)

