

## **SI File.** Stratigraphy of trench IX/2017 in Koziarnia.

The whole stratigraphical sequence of trench X/2019 in Koziarnia can be described as follows, starting from the bottom:

*Layer P is the bottom-most level and genetically the oldest, consisting of red clay (of the terra rosa type), which is the effect of the chemical weathering of calcareous rock. These sediments occur locally; they were observed only on weathering limestone regolith, in the hollows of the bedrock in corner B (metre 39 I).*

*Above, layer M has been distinguished, i.e. a massive silty layer yellow-grey in colour. This level does not display the characteristics of the sandy silt series unearthed in trench IX in the 1960s (layer 21). The lack of both sand and stratification can be observed. In the bottom of layer M, the effects of chemical weathering are noticeable, i.e. the precipitation of ferriferous compounds in the form of reddish-brown incrustations on the limestone rubble, topically also individual plates present in the silty series.*

*The next level is formed by layer L, i.e. dark brown loam with intercalations of grey silt in the lower part and a large amount of sharp-edged limestone rubble. In the bottom of the discussed level, within the loam laminae, the debris is characterised by a partially smoothed surface. Individual clusters of red clay can also be observed in this zone.*

*Above layer L, there is a deposit of light brown loam with a high amount of sharp-edged debris containing clasts diverse in size, i.e. Ø 5-20 cm (layer I'). The heterogeneous nature of the matrix draws attention. The top of the layer is characterised by the larger amount of a silt fraction. There is a greater accumulation of rock fragments (sharp-edged debris) at metre 39J, the effect of the weathering of the cave's southern wall and the sedimentation of the rock debris. The consistency of the layer was disrupted by a landslide of large sharp-edged rock rubble from level I.*

*The subsequent level, layer H, consists of dark brown loam with a pronounced predominance of a clay fraction and a much lower amount of limestone rubble as compared to layer L. The rock material has a strongly smoothed surface and smaller dimensions, i.e. Ø 2-8 cm. Debris with a lower degree of smoothing is present in corners A and B, i.e. closer to the cave walls. The discussed level shows a clear dip in the NNE direction. Analogously to level I', the consistency of the layer was disrupted by a landslide of large, sharp-edged rock debris from level I.*

*Layer I is formed by light brown silty loam (i.e. of a much lighter shade than layer H) with a large amount of limestone debris smoothed to a varied degree. The smaller clasts, i.e. Ø 5-8 cm, are smoothed only slightly, while the material gathered at metre 39I has a higher degree of smoothing. Analogously to level H, the layer shows a dip in the NNE direction. The direction of the dip corresponds to the accumulation and increase in the smoothing degree of the limestone debris. Larger-sized rock clasts, i.e. Ø 15-25 cm, the result of the sudden rockfall of the rock wall or cave ceiling, is present at metre 39J.*

*Layer H' is formed by dark brown loam with smoothened limestone clasts. Small-sized clasts, Ø 2-5 cm, are predominant. The discussed level is the last layer showing a distinct dip in the NNE direction. At metre 39J, the rock debris has a lower degree of smoothening. The larger-sized clasts, i.e. Ø above 10 cm, are distinctly sharp-edged.*

*Layer G is formed by light brown loam with a predominance of fine smoothened rock clasts Ø 2-8 cm. This level is characterised by a slight dip in the NNE direction. The debris visible in profile N has a higher degree of smoothening than in profile E.*

*Layer F is formed by dark grey silty loam with charcoal dust (?). Throughout its entire thickness, rock clasts are present, varied in their size (Ø 2-8 cm) and degree of smoothening; however, smoothened clasts predominate. Charcoal is present topically. The discussed layer wedges out at metres 39I/39J. The layer continues in profile N.*

*Above, there is a layer of light grey loam with a large amount of partially smoothened limestone rubble (layer E), with the higher degree of clasts smoothening in the layer's floor worth noting. Analogously to lower levels, the sharp-edged rubble is concentrated in metre 39J.*

*Layer D is formed by a light brown (light tawny-coloured) silty loam with a large amount of limestone debris. A concentration of larger rock clasts, Ø 20-30 cm, is observable at metre 39I. The debris is partially smoothened, especially in the bottom of the middle part of the layer (small pits visible). The discussed level has a larger participation of the silty fraction as compared to layer E. The debris unearthed in profile N, analogously to layer G, is characterised by a higher degree of smoothening. It is worth noting the concentration of large rock clasts, i.e. in the bottommost and topmost parts of the layer. This fact indicates two rockfalls of the chamber ceiling, separated in time.*

*Layer C is a thin layer of dark brown loam, deposited on the limestone regolith overbuilding layer D. This seems to be confirmed by the sharp-edged character of the clasts and its distinct accumulation in corner B (metre 39 I).*

*Layer K' is formed by yellow-brown loam with limestone debris with a varied degree of smoothening. There are concentrations of large sharp-edged rock clasts with slight traces of chemical weathering, as well as partially smoothened material present in the bottom of the discussed level. A thin layer of grey silt (1-2 cm thick), visible on the E wall and S trench, underlies the layer of loam. No silt was observed in profile N. The brown colouring of the smoothened limestone clasts in the bottom of the discussed level is the effect of dissolution, largely caused by water being retained by the silt level and its slower permeation*

*Layer K consists of dark grey loam with numerous rock clasts, Ø 4-15 cm in size, partially smoothened. Partially smoothened debris is present in the bottom of the layer (distinctly brown in colour, with shallow hollows).*

*The sedimentary sequence ends with a dark grey sandy loam with a high amount of sharp-edged limestone clasts. This level forms the modern-day pavement. In this layer, one can distinguish also a thin humic level (ca. 1 cm) overbuilding layer K.*

*The following layers are present above layer K in the profile located closer to the wall:*

*J – light grey loam with strongly smoothed medium-sized (Ø 5-10cm) rock debris.*

*A' – a layer almost identical to A, but slightly greyer;*

*Layer A – dark grey-russet non-sandy very loamy clay, located directly by the wall and filling out the crevices between the yellow-grey limestone regolith, with a small amount of smoothed variously-sized rubble.*