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History of research at Švédův stůl Cave in the Moravian Karst

Dějiny výzkumu v jeskyni Švédův stůl v Moravském krasu

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KEYWORDS

Old documentation – history of research – Ochoz u Brna – cave settlement – Magdalenian – Neanderthals – Paleolithic – Švédův stůl Cave

ABSTRACT

This article provides an overview of the published archaeological, geological, anthropological, and paleontological research that has been undertaken at Švédův stůl Cave at Ochoz u Brna in the southern part of the Moravian Karst. Most of these excavations took place from the end of the 19th century to the present and have already been described in the literature; however, to date, there has been no comprehensive review for an English-speaking audience. The authors focus on the excavations of Bohuslav Klíma between 1953–1955 and the discovery of a Neanderthal's mandible by the student Karl Kubasek in 1905, and the circumstances under which this find entered the collections of the Moravian Museum in Brno. The article also includes, for the first time ever, photographs from the Bohuslav Klíma archive documenting his excavations in the cave in the 1950s. This documentation was also used to place the test pits excavated in front of the cave in 2019 by an international research team in the spatial framework of Klíma's excavations.

1. Introduction

The Švédův stůl (Swede's Table) archaeological site is one of the most important Paleolithic sites in the Moravian Karst (Klíma et al. 1962; Svoboda ed. 2002, 119–120, 226–227; Valoch et al. 2002; Neruda 2011, 15–16; Oliva 2016, 286–287). The cave has provided a wealth of archaeological and osteological material, and its sedimentary archive has been pivotal in our understanding of the Upper Pleistocene Period in Moravia in terms of archaeology, Quaternary geology, paleoanthropology and, especially, paleontology. Unfortunately, however, its potential was almost exhausted by the archaeological excavations that took place there at the end of the 19th century and in the 20th century. While most of these excavations were in line with the scientific standards of the time, it cannot be denied that the informational value of the cave's sedimentary fill could have been much higher if it had been explored using modern methods. After Bohuslav Klíma's field research ended in the 1950s, the potential of the cave was considered exhausted as almost all the cave's intact sediments were thought to have been explored (Klíma et al. 1962).

In recent years, a revision archaeological excavation (Nejman et al. 2020; Wright et al. 2021) was carried out to determine the informational potential of the sedimentary cone in front of the cave, which is made up of material excavated during previous excavations. An integral part of this research was also to test the possibility of preserving the sedimentary fill undisturbed by previous excavations, which could provide data on Neanderthal occupation of the cave.

While collecting sources for this review, we managed to obtain original documentary photographs, drawings and notes produced during excavation of the site under the direction of Bohuslav Klíma in the 1950s. The originals, which were stored in the archive of the son of the then excavation manager, Bohuslav Klíma Jr., were scanned and copies were deposited in the archive of the Institute of Archaeology of the Czech Academy of Sciences in Brno (ARÚB), where they are available to anyone interested (Personal archive P047).

In the following text, we provide (a) a clear description of research at the Švédův stůl site, including the available literature and unpublished correspondence of Jaromír Vaňura, who undertook excavations in the cave in the second half of the 20th century, (b) selected unpublished materials from the original field and photographic documentation of Bohuslav Klíma's excavations in the 1950s and, last but not least, (c) a comparison of the newly discovered documentation of Klíma's excavations with the locations of test pits undertaken during the 2019 revision research (Nejman et al. 2020, 13; Klíma et al. 1962, 23).

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2. Geomorphology and geology

The Švédův stůl portal cave (334 m a.s.l.; WGS84 GPS coordinate system 49.2453678N, 16.7477603E), with its entrance facing northeast into the Říčka stream valley, is situated on the right side of the Hádek Valley (formed by the flow of Říčka) on the western slope of a rocky ridge at the confluence of the Říčka and Ochoz streams in the municipality of Ochoz u Brna in the southern part of the Moravian Karst (Fig. 1). It is probably a fragment of the old Říčka sinkhole cave and is mainly comprised of a 15 m long main passage, oriented northeast-southwest. At its southwestern end, there is a chimney open to the rocky plateau above the cave. Below the chimney there is a narrow 13 m long passage facing south. There is also another small chamber next to the entrance that continues in a south-westerly direction through a 5 m long drainage duct. Overall, the cave has a total length of about 30 m (Přibyl et al. 1984; JESO 2023). The rock floor of the cave, which was unearthed during the excavation of B. Klíma, revealed a well-modelled meandering channel of a once flowing stream situated about 11.8 metres above the present-day riverbed (Dvořák 1957, 348). The present cave likely formed the upper cave floor of nearby Malčina Cave (Slezák 2010; JESO 2023). The formation of the Hádek Valley and the development of its surface and underground drainage system share many common features with the northern and central parts of the Moravian Karst. These include the karst morphology, represented by the semi-blind Hostěnice Valley and the Hádek Valley itself, and the underground drainage system formed by the lower active level and the upper flood level of nearby Ochoz Cave (Kadlec 2001). According to the Unified Register of Speleological Objects, the cave is designated as K2301218–14190 (JESO 2023) and, as part of the caves of the Říčka Valley, it presently has the number Ř-6 with entrances a, b and c (Himmel, Himmel 2012), although earlier Kříž had marked the cave as number 9 (Kříž, Koudelka 1902, 117–119).

The southern part of the Moravian Karst is in the area around Švédův stůl Cave composed of light grey Vilémovice type limestones of the Devonian age (JESO 2023). In addition to the Devonian Vilémovice type limestones that form the karst bedrock of the site, other sediment types detected close to the site include the Lower Miocene transgressive sands. These were removed during the Quaternary Period by the flow of the Stream Říčka (Kadlec 2001), which also brought in clastic material from the Drahany Highlands area (mainly Culmian clastic material). Quaternary sediments are further represented by loess and loess-like clays of aeolian origin, including products of soil weathering.

As this paper basically summarises work that took place from the end of the 19th century up to the 1990s, it should be taken into account that the principles of Quaternary stratigraphy were still under development at that time, and that these have now been replaced by other concepts. For example, most of the second half of the 20th century, the Central European scholars used a division of the Last (Weichselian, formerly Würmian) Glacial Period into three colder periods called Würm 1 (W1), Würm 2 (W2) and Würm 3 (W3), which were interrupted by two relatively warmer interstadials called Würm 1/2 (W1/2) and Würm 2/3 (W2/3) (Prošek, Ložek 1954). Principally W1 could be connected to MIS 5a–d and MIS 4, W1/2 could be placed at the beginning of the MIS 3, W2 in the middle of MIS3, W2/3 at the end of MIS 3 and W3 in the MIS 2 stage (e.g. Valoch 2012). However, the conception and perception of these stages was changing in connection with the development of absolute, mainly radiocarbon dating and also with an introduction of the ice core and marine deposits climatic record. Finally, at the end of the 20th century it was completely replaced by chronological systems of Oxygen and Marine Isotopic Stages (OIS and MIS) (Emiliani 1955; Railsback et al. 2015) and Greenland Interstadials and Stadials (GIS and GS; Johnsen et al. 1992; Dansgaard et al. 1993).

Unfortunately, some researchers of Švédův stůl Cave (e.g. Pelíšek 1964; Vaňura 1992) labelled the excavated layers according to the presumed dating. In this regard they improperly substituted neutral labels of layers (e.g. by numbers or letters) by its interpretation (specifically by its presumed dating). Moreover, this presumed dating was not based on absolute dating, since there were no absolute dates from these excavations, but impressions and opinions of the researchers. For example, J. Vaňura changed the labels of particular layers several times. In this article we use his last description (Vaňura 1992).

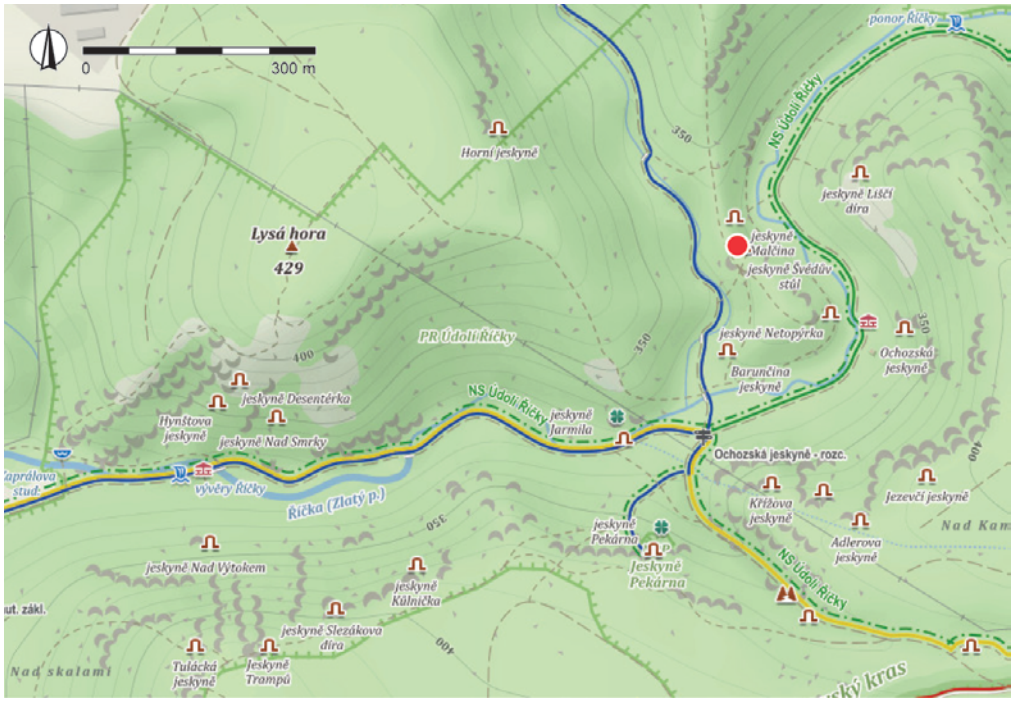

Fig. 1. Location of the Švédův stůl Cave in the Říčka river valley (red point). Source: Mapy.cz. Edited by O. Mlejnek.

Obr. 1. *Poloha jeskyně Švédův stůl v údolí Říčky (červený bod). Zdroj: Mapy.cz. Upravil O. Mlejnek.*

3. The history of research

3.1 The beginnings of research

Švédův stůl Cave has been known about since ancient times. Originally, it was probably longer, but then a large part of the ceiling collapsed. According to Dvořák, the collapse of the ceiling must have occurred during the Last Glacial Period as the edge of the sinter layer created inside the cave by the dropping of calcareous water from the ceiling in the humid climate at the beginning of the Holocene fits the current position of the cave entrance (Dvořák 1957, 354). This contradicts the statement of B. Klíma, however, who thought the slump of the cave ceiling was related to debris horizons in the Holocene strata in front of the cave (Klíma et al. 1962, 25–26). In our opinion, it is likely that there were several phases of ceiling subsidence, and it is possible that the final collapse of the ceiling at the site of the present platform in front of the cave occurred during the Pleistocene. The limestone rubble in the Holocene strata could then have been deposited by fallout from the rock face in front of the cave.

According to the legend that gave the cave its name (Swede's Table), Swedish soldiers under the command of General Lennart Torstenson (1603–1651) were supposed to have camped and drunk on a limestone rock shaped like a giant table during the siege of Brno in 1645 (Koudelka 1889). According to Martin Kříž, this was an exposed rock above the entrance to the cave, measuring about 4 × 4 m, which looked as if it had been cleaned (Kříž 1892, 579). The original entrance to the cave was much smaller than it is today as it was largely filled with the Quaternary sediments. These sediments were dumped on the heap in front of the cave during repeated archaeological excavations. Prior to the first excavations by Martin Kříž, Švédův stůl Cave was described as a small cave that had to be crawled into on one's belly (Dvořák 1957, 348). This is probably why it is not mentioned in earlier descriptions of the Hádek Valley (e.g. Wankel 1882). According to the description of M. Kříž, the width of the cave entrance before his excavation was about 3 m, and the height just 1 m. Behind the entrance, there was a space of the dimension approximately 5 × 5 m with left and right passages that could only be reached by crawling, the length of the left passage being 4 m and the right 2 m (Kříž 1892, 579). Photographs from the turn of the 19th century (Fig. 2), the 1920s (Fig. 3) and 1953 (Fig. 4), just before the start of Klíma's excavation, show that the height of the entrance to the cave at those times was around 150 cm and the width 3 m, while today the portal is about 4 m high and wide.

The cave was first described in 1883 by Florián Koudelka (1883), who also excavated the first small-scale test pits (Koudelka 1889, 29). Between 1886 and 1887, many of the sediments in the cave were excavated by Martin Kříž (Kříž 1892, 579–581; 1903; Kříž, Koudelka 1902, 117–119; Pokorný 2010); however, like F. Koudelka before him, he only managed to uncover

Fig. 2. A photo of the entrance to Švédův stůl Cave with an unknown girl, around 1900. Stored in: Archive of the Anthropos Institute, Moravian Museum.

Obr. 2. *Fotografie vchodu jeskyně Švédův stůl s neznámou dívkou kolem roku 1900. Uloženo v: Archiv Ústavu Anthropos Moravského zemského muzea.*

Fig. 3. A photo of the entrance to Švédův stůl Cave in 1925. Amateur archaeologist Franz Čupik is sitting in front of the cave. Stored in: Archive of the Anthropos Institute, Moravian Museum.

Obr. 3. *Fotografie vchodu jeskyně Švédův stůl v roce 1925. Před jeskyní sedí amatérský archeolog Franz Čupik. Uloženo v: Archiv Ústavu Anthropos Moravského zemského muzea.*

Fig. 4. Photo of the entrance of Švédův stůl Cave before the start of excavations by B. Klíma in 1953. Stored in: Documentation of Švédův stůl cave. Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 4. *Fotografie vchodu jeskyně Švédův stůl před započetím archeologického výzkumu B. Klímy v roce 1953. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

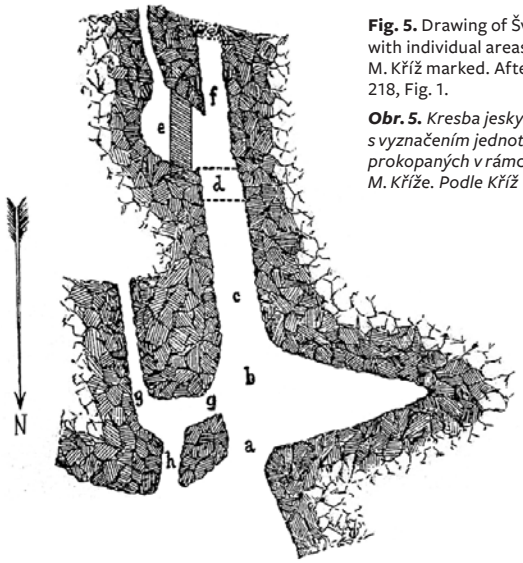

Fig. 5. Drawing of Švédův stůl Cave, with individual areas excavated by M. Kříž marked. After Kříž 1909, 218, Fig. 1.

Obr. 5. *Kresba jeskyně Švédův stůl s vyznačením jednotlivých ploch prokopaných v rámci výzkumů M. Kříže. Podle Kříž 1909, 218, Fig. 1.*

animal bones and found no evidence of a presence of Paleolithic occupation. According to his statement, he excavated the cave sediments, which had an average thickness of 2 m (Fig. 5). A total of 120 m^3 of sediment was reportedly dumped on the platform in front of the cave during this excavation (Kříž 1892, 580). The chimney (sunken ceiling) at the back of the cave was also opened during this excavation (Kříž, Koudelka 1902, 118). Information about absence of Paleolithic artefacts in cave sediments excavated by M. Kříž is interesting, because amateur archaeologist from Čáslav, Kliment Čermák, mentioned lithic tools allegedly from Švédův stůl Cave as early as in 1896 (Skutil 1949, 230–231). How did these lithics get to him as well as the exact origin of these finds remain uncertain.

In 1904, excavations of the intact sediments under the chimney were continued by František Černý, a high school teacher from Brno, who was assisted by his then student Karl Kubasek from Bílovice nad Svitavou (Černý 1904). At the beginning of 1905, he himself dug a narrow passage to the left under the chimney, which was filled with sediments containing animal bones. Here, in the back part of the cave under the sunken ceiling, K. Kubasek, a university student at that time, discovered a fragment of a human mandible. This finding was published a year later by Anton Rzehak, professor of geology at Brno's German University of Technology, as the Neanderthal mandible from Ochoz (Rzehak 1906). A. Rzehak first mentions the discovery of the mandible in the Minutes of the Meeting of the Natural History Society in Brno on 12 April 1905. Identification of the mandible as Neanderthal caused controversy among scholars of the time (Kříž 1909). The mandible is not whole, with both shoulders and the basal part being broken off – these are crucial features for distinguishing modern humans from Neanderthals as Neanderthals lack a prominent chin (Oliva 2017, 10). Subsequent excavations by Martin Kříž in 1908 (Kříž 1909) and Karl Schirmeisen in 1928 (Schirmeisen 1944) failed to yield any more human skeletal remains.

3.2 Bohuslav Klíma's research

The best-documented archaeological excavation was carried out in the cave between 1953 and 1955 by Bohuslav Klíma as part of a project of the Institute of Archaeology of the Czechoslovak Academy of Sciences in Brno (AÚ ČSAV) focused on research of cave sites in the southern part of the Moravian Karst (Klíma et al. 1962). The sequence of layers inside the cave was already mostly damaged by previous excavations by this time, but it was preserved on the platform in front of the cave, where the intact layers were overlain by the waste heap from the previous excavations of M. Kříž (cf. drawing of the cross-section of the layers in front of the cave in Klíma et al. 1962, 23; see Fig. 6 and 33 in this article). The excavation began with a 12 m trench stretching from the area in front of the cave to just below the present cave vault. During this excavation, some large limestone blocks had to be blasted away. After the cave entrance was cleared out, excavation began on the disturbed cave sediments. Here, it became apparent that, while in some places all the layers down to the rock floor had already been explored, elsewhere, such as in the western part of the cave, the cave sediments were still preserved. In the southern passage, a sediment column was left in the fields 18, 19 and 20, and this was used to describe the sequence of layers in the cave (Klíma et al. 1962, 25, Fig. 7; see Fig. 6 and 28 in this paper). Most of the excavation work was carried out relatively quickly, without wet sieving of the sediment, in 1953, with little time also reserved for documentation. The following year was devoted to finishing work only and, in 1955, the column inside the cave was dismantled. These excavations mainly addressed stratigraphic issues; tracing the areal distribution of the finds was impossible thanks to uneven disturbance of the sediments by earlier excavations, such that, even if all the artefacts had been three-dimensionally surveyed, we would only have had insular plans of their areal distribution.

The participants of the expert committee held on 6 October 1953 recommended that Klíma leave the stratigraphic column in the cave. However, the column began to crumble under the influence of climatic conditions prevailing in the now open cave and, moreover, it had become a target for amateur prospectors. Subsequently, it was dismantled in 1955, and this marked the end of Klíma's excavations. The basal layers of the column were left in place to allow for possible future analyses of sediment samples,

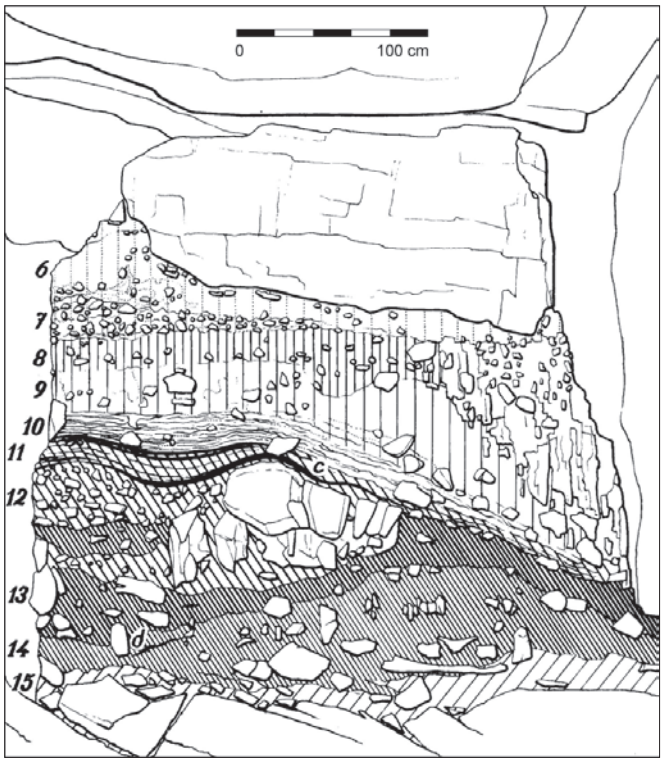

Fig. 6. Drawing of the stratigraphic column in Švédův stůl Cave, with individual layers marked. After Klíma et al. 1962, 25, Fig. 7.

Obr. 6. *Kresba stratigrafického pilíře v jeskyni Švédův stůl s vyznačením jednotlivých vrstev. Podle Klíma et al. 1962, 25, Fig. 7.*

and this apparently became an object of interest for the geologist Jaroslav Dvořák. J. Dvořák had participated in B. Klíma's previous research, and in 1957 carried out minor excavations in the cave without the knowledge of staff from the Institute of Archaeology of the Czechoslovak Academy of Sciences (Dvořák 1957), which produced a negative reaction from B. Klíma (Klíma 1958). Between 1957 and 1958, the cave was further mapped by members of the Karst Section of the National Museum Society and, in 1962 and 1966, it was more precisely mapped by members of the Speleological Circle of the engineering company ZK ROH Královopolské strojírny Brno (J. Haman, P. Himmel, S. Tomšík and R. Duřpek; JESO 2023).

3.3 More recent research

It was also around the 1960s that Jaromír Vaňura (*23 September 1921), a graduate biologist and a teacher of biology and chemistry at the primary school in Šlapanice, started visiting the cave, occasionally returning with his pupils to carry out small excavations right up to the end of the 1990s. In 1962 and 1964, he collected the remaining intact sediments from (A) the back of the narrow passage under the chimney, (B) the cavity in the eastern wall of the cave and (C) the passage at the southwestern end of the cave (Vaňura 1964a; see Fig. 7 in this article). In addition to the skeletal remains of Upper Pleistocene fauna, finds from the end of the narrow passage below the chimney included temporal and parietal cranial bones, which the J. Vaňura considered to be Neanderthal (for the exact location of Vaňura's anthropological finds from the end of the cave, see the plan in Fig. 8a). A supposedly retouched dagger made from the metacarpal bone of a horse was also found at the same place; however, this is probably a pseudo-artefact. The discovery of a fragment of a mandible allegedly of an Asian sable (*Martes zibellina*), according to the finder the first record of this species in the Moravian Karst, came from the mouth of the passage (Vaňura 1965b; 1965c). However, according to our re-examination it is a mandible of a common European pine marten (*Martes martes*). In May 1964, presumably at the time when J. Vaňura was digging in the passage under the chimney, his daughter, Zdeňka, found the right lower molar (M3) of a Neanderthal on the heap in front of the cave. The heap was composed of the deposits removed from Klíma's excavation (Vaňura 1965a; 1965b), and the molar is now held in the collections of the Anthropos Institute at the Moravian Museum in Brno. According to a letter from J. Vaňura to B. Klíma dated 23 July 1965, the find was located on the heap, near the sinkhole at the south-southwestern rock wall in front of the cave, i.e. on the left when looking out of the cave. A human incisor (I2), which is today in the collections of the Anthropos Institute under the heading *Homo sapiens* (apparently donated by E. Vlček after having been given to him by J. Vaňura; Vaňura 1965d, 3–4), was also supposed to have come from this same spot. Interestingly, in letters written to J. Poulík at the end of 1964, and B. Klíma in 1965, J. Vaňura stated that, after 1964, he was supposed to obtain sediment samples from the preserved layers in the cave for R. Musil and V. Ložek (Vaňura 1964b, 1; 1965c, 1–2). In January 1965, J. Vaňura obtained fossilised animal bones from the remaining preserved sediments in the main chamber under the stratigraphic column uncovered by B. Klíma (Vaňura 1965d, 2). Despite Vaňura's announcement that he had definitively finished his excavations in his letter to B. Klíma in 1965 (Vaňura 1965d, 4–5), he was again digging in the cave in 1967. This time, he excavated the rest of the sediments in the rock fissures at the back of the hall under the sunken window and recovered further finds of animal bones from the heap in front of the cave. These finds were then handed over to R. Musil at the Moravian Museum (Vaňura 1967).

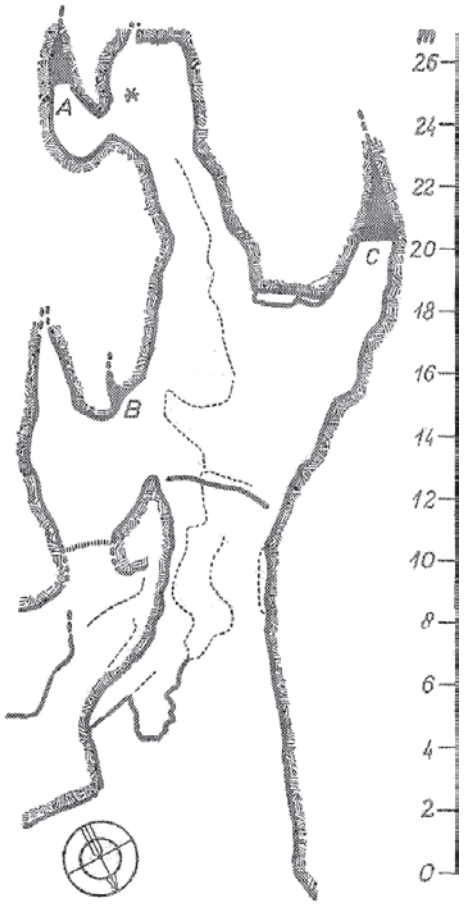

Fig. 7. Plan of Švédův stůl Cave, with individual positions excavated during the field research of J. Vaňura in 1962 indicated. After Vaňura 1964a, 59.

Obr. 7. *Plán jeskyně Švédův stůl se zakreslením jednotlivých poloh prokopaných v rámci výzkumu J. Vaňury v roce 1962. Podle Vaňura 1964a, 59.*

Jaromír Vaňura returned to the cave once again in 1980, when he excavated the last remnants of intact basal sediment in the depression in front of the mouth of the narrow passage under the chimney, in the place he termed the 'culvert' or 'depression' (Vaňura 1983; Fig. 8a, 8c). The finds from here include two teeth (P4) of a small Pleistocene porcupine species (*Hystrix vinogradovi*; Vaňura 1982), abundant macrofauna, microfauna and malacofauna, and two other presumed Neanderthal skeletal remains, i.e. a fragment of the left-side temporal bone and a longitudinal half of a taurodont molar (Vaňura 1983). Other finds by J. Vaňura and his pupils from this period come from the heap in front of the cave. In 1981, Jiří Richter found another porcupine tooth (P4) here, and a year later Milan Olšan found an almost complete branch of a mandible of a second porcupine (*H. vinogradovi*; Vaňura 1984). An interesting discovery made by J. Vaňura from the heap in front of the cave is a molar fragment of a member of the Villafranchian fauna, a forest mammoth of the species *Mammuthus meridionalis* (formerly *Archidiskodon gromovi*) from the Lower Pleistocene, providing evidence that there may have originally been remnants of very old sediment inside the cave, potentially washed in from the plateau above the cave (Vaňura 1992).

Jaromír Vaňura also carried out excavations at Švédův stůl Cave between 1991 and 1992, when he deepened the front part of the passageway under the chimney and also removed a low side 'pocket' in the same passageway. In the groove in front of the 'pocket', he found another presumed small fragment from a Neanderthal skull (Vaňura 1992).

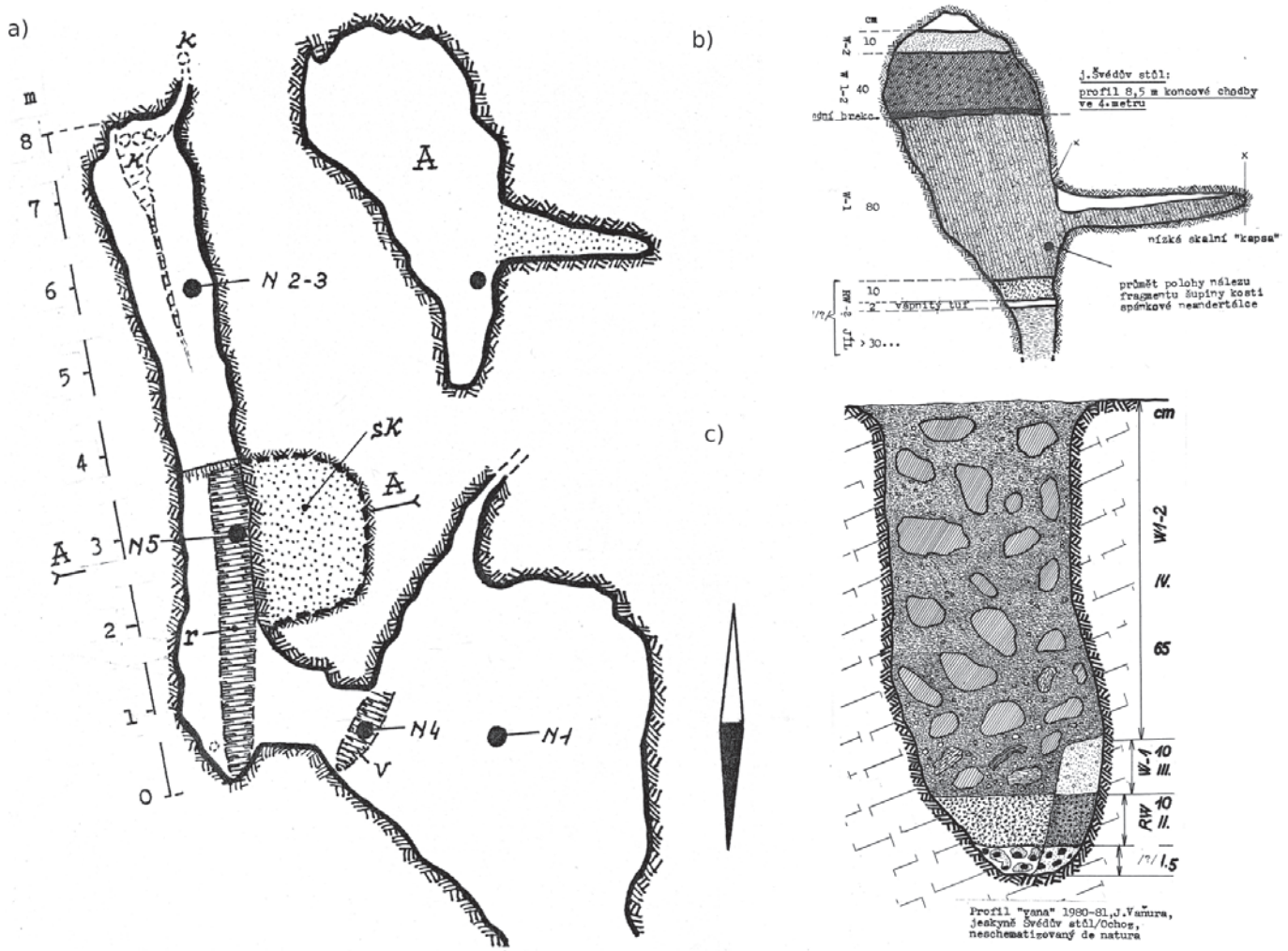

Fig. 8. a) Plan of the rear part of Švédův stůl Cave, with the location of the presumed *Homo neanderthalensis* skeletal remains indicated. After Vaňura 1992, Appendix 4. N1 – presumed site of Kubasek's discovery of the Neanderthal lower jaw from 1905. N 2–3 – site of Vaňura's discovery of the presumed Neanderthal skull fragments from 1964. N4 – site of Vaňura's discovery of a Neanderthal molar fragment and a putative Neanderthal skull fragment from 1980. N5 – site of Vaňura's discovery of a presumed Neanderthal skull fragment in 1992. b) Sediment profile for the end passage, with individual layers plotted. After Vaňura 1992, Appendix 6. c) Sediment profile for the depression before the entrance to the end passage, with individual layers plotted. After Vaňura 1992, Appendix 5.

Obr. 8. a) *Plán zadní části jeskyně Švédův stůl se zakreslením míst nálezů domnělých kosterních pozůstatků Homo neanderthalensis. Podle Vaňura 1992, příloha 4. N1 – předpokládané místo Kubaskova nálezu spodní čelisti neandrtálce z roku 1905. N 2–3 – místo Vaňurova nálezu domnělých zlomků lebky neandrtálce z roku 1964. N4 – místo Vaňurova nálezu zlomku neandrtálské stoličky a domnělého zlomku lebky neandrtálce z roku 1980. N5 – místo Vaňurova nálezu domnělého zlomku lebky neandrtálce z roku 1992. b) Profil sedimenty v koncové chodbě se zakreslením jednotlivých vrstev. Podle Vaňura 1992, příloha 6. c) Profil sedimenty v prohlubni před vstupem do koncové chodby se zakreslením jednotlivých vrstev. Podle Vaňura 1992, příloha 5.*

The final excavations carried out by J. Vaňura took place on the platform in front of the cave in the summer of 1999 (Vaňura 1999). Specifically, he excavated four small trenches in which he found intact sediments that he dated to the beginning of the Weichselian Glaciation (W1). He discovered additional animal skeletal remains in these levels, some of which had been gnawed on by porcupines. J. Vaňura suggested that the original site of the cave entrance was around 10 m in front of the present entrance as, beyond this point, the rock rubble diminishes, the yellow-brown loess becomes greyish and looser and the fossil animal bones almost disappear (Fig. 9).

In addition to the excavations of Vaňura and his collaborators, the students M. Oliva and Z. Krchňák excavated the last intact sediments in the passage leading from the small hall to the left of the portal between 1965 and 1966 (Oliva 1978, 14; 2017, 13). Here, they found animal bones and teeth, including larger fragments gnawed by hyenas, and a hyena coprolite. Other small finds can still be found around the cave, mainly in the old heaps in front of it, especially after rain.

As the sediments were not wet sieved during the older excavations, it could be assumed that some smaller paleontological and archaeological finds remain in the spoil heap in front of the cave. For this reason, a revision archaeological excavation of the heap was undertaken between 2019 and 2022, during which the sediment was wet sieved through 3 mm mesh sieves (Nejman et al. 2020; 2021; Wright et al. 2021; Bartík et al. 2023). In addition, in 2019, four small (0.5 x 0.5 m) test pits and one larger (ca 1 × 4.5 m) revision trench were excavated on the platform in front of the cave, the area that had previously been excavated during Klíma's field research (Nejman et al. 2020). These trenches were able to identify relics of intact sediment, thus confirming Vaňura's statement that the basal sediments in front of the cave had not been completely excavated during Klíma's research (Vaňura 1999; Fig. 9). These lately excavated trenches were archaeologically investigated and documented, and the samples collected are now being analysed (radiocarbon dating, OSL dating, geochemical analysis, XRF analysis, sediment micromorphology analysis, analysis of sedimentary aDNA, ZooMS analysis of bones, etc.).

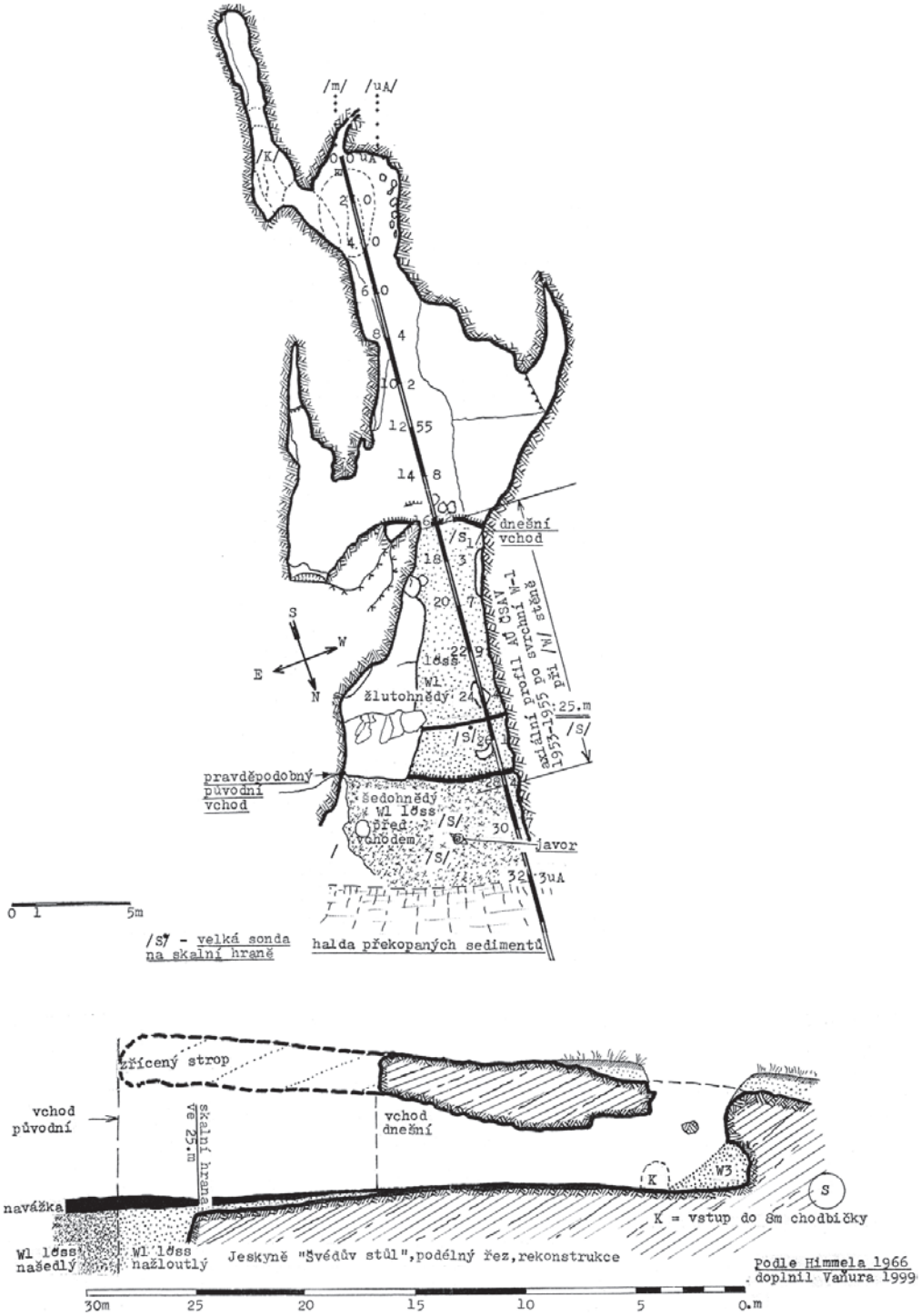

Fig. 9. Plan of Švédův stůl Cave and its foreground, with trenches (S) excavated by J. Vaňura in 1999 indicated. After Vaňura 1999.

Obr. 9. *Plán jeskyně Švédův stůl a jejího předpolí se zakreslením sond (S) vyhloubených J. Vaňurou v roce 1999. Podle Vaňura 1999.*

4. Description of finds from earlier excavations

4.1 Stratigraphy

During his two excavations in the cave, Martin Kříž (1909) had already noticed differences between the individual layers. According to his description, there was an area of sharp-edged debris (layer a) on the surface, irregularly distributed within the cave, and beneath this there was a black soil (layer b), about 40 cm thick and probably dating to the Holocene, which was becoming thinner in the direction towards the cave. This layer was not recorded in later excavations in the cave. This was followed by a 160–210 cm thick, light yellow sandy clay with debris (layer c), of Pleistocene age, underlain by a layer of limestone blocks and debris with a slight admixture of clay (layer d).

However, the sequence of individual layers, both in and in front of the cave, is best described on the basis of Klíma's excavations (Klíma et al. 1962, 22–32; Fig. 6 and 33). B. Klíma described geological layers 1–15 here. On the surface of the undisturbed layer sequence in front of the cave there was a pile of sediment dug from earlier excavations, which Klíma (Klíma et al. 1962, 24) referred to as layer 1. This was described as a mixed clayey and loamy sediment containing many limestone boulders.

Layers 2–5, already comprising a complex of Holocene soils, were only preserved in the area in front of the cave**.** Layer 2 was described by Klíma (Klíma et al. 1962, 24–25) as a grey-black, deeply coloured soil, on the surface of which was a horizon of collapsed limestone blocks, some of which were so large that they had to be broken up to continue excavation. These were

probably the remains of the rock ceiling of a former cave entrance that had collapsed many centuries ago, as confirmed by the 15th–16th century pottery sherds found crushed under one of the stone blocks.

Layer 3 consisted of a brownish grey, dark soil which, in places, was not easily distinguishable from the overlying layer 2. The lower part contained isolated sherds dating to the Early Hallstatt Period and numerous fragments of Únětice culture pottery from the Early Bronze Age. At the base of this layer was another level of collapsed limestone blocks.

Layer 4 comprised a grey-brown to brown soil with a rusty tinge which, in places, was coloured purple on the surface by seepage from the overlying layers. Ceramic sherds of Linear Pottery and Lengyel Neolithic cultures were found in the upper part of this layer, dating the origin of the soil to the Atlantic period.

Underlying layer 5 consisted of white clay travertine (sinter), which reached its greatest thickness at the rock face, where it also permeated the surface of the underlying loess, but it was completely eroded further away from the walls. A similar sinter layer is also known from other caves in the Moravian Karst and is probably related to a significant increase in precipitation at the beginning of the Holocene.

Below the sinter horizon, there was a complex of loess deposits, dating back to the end of the Weichselian Glaciation (layers 6–9). These could also be observed on the stratigraphic column in the cave; however, individual horizons could only be distinguished inside the cave. Situated on the surface of the loess complex, layer 6 consisted of a relatively pure grey-yellow-ochre coloured loess with a small admixture of sharp-edged gravel. There was a charcoal horizon situated in this layer near the cave entrance, perhaps a remnant of a Magdalenian hearth.

Subsoil layer 7, which was again only recognisable on the profile column inside the cave, was composed of a grey-ochre loess containing a larger amount of sharp-edged gravel, especially in the upper part.

Layer 8 was described as a grey-brown loess sediment containing an admixture of limestone gravel with rounded edges. The layer was again more recognisable in the cave than in the area outside, where its course could only be roughly estimated. Just outside the cave, however, there was a faint charcoal horizon probably associated with possible episodic Aurignacian occupation.

The lowest layer of the loess complex, layer 9, was described by B. Klíma (Klíma et al. 1962, 26) as a light brown to ochre-coloured loess sediment with a minor admixture of sharp-edged gravel. It was more richly coloured and homogeneous than the overlying horizon sediments.

The underlying sediments were comprised by a complex of brown cave soils (layers 10–14). Layer 10, on the surface of the brown cave soil complex, was located within the cave and consisted of a finely layered brownish-grey clay containing crushed animal bone and small numbers of rounded limestone boulders. Bohuslav Klíma interpreted this layer as a solifluction horizon (Klíma et al. 1962, 26).

Underlaying layer 11 was again recognisable in the area in front of the cave as a dark brownish-grey clay soil containing charcoal, which Klíma (Klíma et al. 1962, 26) associated with finds of the Late Mousterian. The layer also contained a small number of small, rounded limestone boulders. According to Klíma, a dark lens in the centre of the profile column in the cave resembled guano. It contained numerous animal bones with rounded fractures and isolated stone tools that Klíma classified as Late Mousterian. In the area in front of the entrance, layer 11 merged with layer 12 to form a single horizon containing charcoal horizons.

The next horizon within the complex of brown cave soils, layer 12, was only recognisable as a separate layer inside the cave. This was described as a grey to brown cave soil containing large quantities of limestone debris and animal bone. Neither bones nor boulders were as well preserved here as in the overlying layers (Klíma et al. 1962, 26).

Underlaying layer 13, again present only in front of the cave, was described as a dark brownish-grey sediment containing many limestone boulders that were easily crumbled when exposed. The stones were quite weathered and animal bones found in the layer were mostly poorly preserved and crushed. In places, the layer contained phosphatic clay horizons and a few pieces of charcoal were found in the eastern part of the profile column. The transition to the overlying layer was described by B. Klíma (Klíma et al. 1962, 26–27) as continuous, such that in some places the boundary between layers 13 and 12 could not be distinguished.

The lowest horizon within the brown cave soil complex, layer 14, was described by B. Klíma (Klíma et al. 1962, 27) as a brownish-grey soil only present inside the cave, where it was quite thick (up to 60 cm). This contained many rather fragmentary animal bones which, while evenly dispersed throughout the layer, also formed concentrations in places, such as on the western edge of the profile column. The stone debris within this layer consisted of several larger limestone boulders. Within the cave, near the eastern edge of the profile column, a charcoal horizon was found near the layer's surface, near which two roughly worked stone tools of questionable artificiality that Klíma attributed to the Early Mousterian (Klíma et al. 1962, 27) were excavated.

The lowest layer of the stratigraphic complex, layer 15, was only distinguished by B. Klíma in the foreground of the cave, where it was described as a rusty-yellow to orange-ochre clayey sediment deposited directly on the rock floor. Filling depressions in the bedrock, it was only about 30 cm thick at most and was completely eroded in some places (Klíma et al. 1962, 28). It is possible that it was remnants of this layer that were uncovered *in situ* during the 2019 excavation, when it was demonstrated that, further from the cave entrance, where Klíma's excavations did not reach, there were Tertiary age sediments, possibly connected to the Miocene transgression, deposited in the substratum of this layer (Nejman et al. 2020).

Josef Pelíšek (1964) described a somewhat different sediment stratigraphy scheme. At the cave entrance, he recorded a recent dark-grey humic clayey soil with debris found on the surface (layer 1) followed by a chocolate-brown rendzina (layer 2), probably dated to the Subboreal. Layer 3 comprised a grey humic clayey soil with debris containing Neolithic and Eneolithic pottery sherds in the lower part and large blocks of limestone on the surface. This was followed by a grey and white calcareous soil with small debris (layer 4), dated to the Atlantic period, and grey-brown soil with debris of presumed Boreal age (layer 5). Layer 6 was represented by a position of debris with grey-brown soil in the overburden, perhaps of Preboreal age. The Pleistocene sediment complex (layer 7, W3) started with ochre-yellow loess with sharp-edged debris from the end of the Weichselian Glaciation, with Magdalenian finds in the upper part and continued with brown soil and small-sized debris (layer 8, W2/3) with a few finds of stone chipping activity (perhaps Aurignacian) in the upper part. This was followed by ochre loess with sharp-edged debris (layer 9, W2) and blocks of limestone at the base and then a grey-brown humic soil with small-sized debris (layer 10, W1/2) with a relict of a hearth and burnt bones on the surface. The stratigraphic scheme at the entrance was then rounded off by a rusty-yellow clayey soil with debris (layer 11, W1) and limestone blocks in the upper part.

Josef Pelíšek failed to detect any Holocene sediments inside the cave; instead, his stratigraphic scheme began with a light brown loess with sharp-edged debris, with Magdalenian chipped stone industry in the upper part of the layer (layer 7, W3). This was followed by a grey-brown soil with small sharp-edged rubble (layer 8, W2/3). The basal sediment complex then consisted of a light ochre loess with abundant sharp-edged debris (layer 9, W2), a brown clayey soil with Middle Paleolithic artefacts at the base (layer 10, W1/2) and an ochre clayey soil with an admixture of small-sized debris (layer 11, W1) overlying the cave bedrock.

The geologist Jaroslav Dvořák (Dvořák 1957), who, as head of the local speleological group, cooperated in the research of B. Klíma's team, also carried out several excavations of his own in the cave (see above). According to J. Dvořák, under the black humic clay (probably the remnants of Holocene sediments), there was a sinter plate bounding the underlying Pleistocene sediments, which started with a pale-yellow loess from the end of the Weichselian Glaciation with finds of Magdalenian lithic artefacts, followed by a grey-brown loess with sharp-edged debris and a lens of layered clay containing lighter and darker layers with sharp-edged debris. Isolated Middle Paleolithic chipped stone artefacts were thought to be contained in the underlying dark brown phosphatic clay, and finally, the sequence of layers within the cave was closed by yellow to yellow-brown, slightly charred loess containing microfauna.

Jaromír Vaňura only found remnants of basal sediments in the cave. In 1962 and 1964, he excavated the sediments in the end passage below the chimney (Fig. 7, excavation A). In circa the 4th metre of the corridor, he described the following stratigraphy (Vaňura 1992; Fig. 8b): In the upper part of the corridor there was about 10 cm high cavity, underneath which a 10 cm thick layer of foamy sinter with loess captured in the sinter chambers was deposited. This layer (which J. Vaňura dated to W2) contained numerous sinter-covered fragments of animal bones. The younger layers in the terminal passage were absent as the entrance to the passage was probably blocked by sediments during the deposition of the W2 layer. A layer of coffee-brown clay about 40 cm thick with small pebbles and masses of fossil bones was present in the subsoil, which J. Vaňura dated to W1/2, from which came the two presumed Neanderthal skull fragments found in 1964. This layer was separated from the underlying sediments by a horizon of bone breccia, below which lay a light ochre sediment of about 80 cm, dated by J. Vaňura to W1, with scarce fossil bone fragments. It was in this layer that J. Vaňura found another alleged Neanderthal skull fragment in 1992. In the subsoil, there was a layer of sediment of about 10 cm that resembled black-speckled sand, dated by J. Vaňura to the Eemian interglacial, i.e. MIS5e (R/W according to the older Alpine classification), in which there were only isolated skeletal remains of microfauna. At the base, this layer was separated from the underlying sterile clay by a 2 cm thick layer of calcareous tuff. In 1962, J. Vaňura also excavated a fissure in the southern wall of the cave (Fig. 7, excavation B), where he found remnants of loess sediment that he considered to be W2, and a passage in the south-western part of the cave (Fig. 7, excavation C), where he distinguished layers labelled W2, W1/2 and W1 (Vaňura 1964a). Jaromír Vaňura also found a similar stratigraphy to that in the end passage in the depression before the entrance to the passage at the rear of the cave, which he excavated in 1980 (Vaňura 1984; Fig. 8c). Most of the preserved sediments found in the depression consisted of a 55–65 cm thick dark-brown clay with small pebbles and masses of fossil bones, which J. Vaňura dated to W1/2 and designated as Layer IV. Another presumed skull fragment and a fragment of a Neanderthal molar were also found at this location. A lens of light ochre sediment (layer III, W1), which contained numerous fossil bone fragments and microfauna, was preserved in a part of this depression. Underneath, there was a circa 10 cm thick dark-brown clay soil with small pebbles and numerous microfauna (layer II), which Vaňura dated to the Eemian (R/W according to the Alpine classification). Beneath this layer there was a 5 cm thick calcareous limonitic crust with no osteological finds (layer I) lying directly on the bedrock (Vaňura 1984; 1992). Consequently, the stratigraphy determined by J. Vaňura must necessarily contain a hiatus corresponding to the warm period from MIS5a to MIS5c and related to the development of chernozems, i.e. the PK2 pedocomplex.

4.2 Archaeological finds

Inside the cave, at the base of the cave soil complex (layer 14), Klíma found several not-very-convincing limestone fragments and two quartzite fragments, which, according to him, could indicate the earliest occupation of the cave from about 80,000 years ago (Klíma et al. 1962, 36–38). However, the main Middle Paleolithic cultural horizon was situated in the dark brown layer 11. Only seven artefacts were found directly in this layer; however, these, along with other finds from secondary positions, indicate that the cave was occupied by Neanderthals of the Late Mousterian technocomplex, probably sometime at the end of the first half of the Last Glacial Period, i.e. approximately 50,000 years ago. According to B. Klíma, this layer also contained a charcoal lens interpreted as a hearth (Klíma et al. 1962, 38–41). The discovery of a Neanderthal mandible could also be associated with this layer. A total of 33 artefacts can be assigned to this horizon, including six mostly indistinct cores, counting one discoid precore (Klíma et al. 1962, 66; Neruda 2011, 42, 158), four flakes, six fragments of percussors and ten formal tools, which included five heavily retouched side scrapers, three of which were found directly in the layer, a fragment of a flat retouched tool and a coarse end scraper made on a thick flake (Klíma et al. 1962, 69; Svoboda ed. 2002, 121). The most abundant raw materials were Moravian Jurassic cherts, quartzite called sun boulder (Přichystal 2013, 176–177) and Cretaceous spongolite. Olomučany type chert has also been found sporadically (Neruda 2011, 42). All the raw materials can be obtained within 10 km of the cave as the crow flies, thus, the Neanderthal group residing in Švédův stůl Cave appears not to have been very mobile. The spectrum of raw materials used is comparable with that found in Micoquian layer 7c at Kůlna Cave near Sloup (Svoboda et al. 2002, 118–121; Neruda 2011, 42).

Bohuslav Klíma (Klíma et al. 1962, 41–42) believed that the cave had been settled in the Aurignacian period, i.e. between about 40 and 30 thousand years BP, based on the charcoal concentration in layer 8, which B. Klíma dated to Würm 2/3. Klíma's estimate was also based on the finding of two artefacts near the charcoal concentration, i.e. a fragment of a unilaterally-retouched radiolarite blade and a notched laterally-retouched flake. Typologically, these artefacts are not so distinctive as to be confidently assigned to the Aurignacian culture. Nevertheless, given their stratigraphic position, they do provide evidence of apparently short-lived human occupation of the cave sometime in the Early Upper Paleolithic.

Further finds of stone chipped industry came from the upper part of layer 6 dating to the Last Glacial Maximum (LGM), or MIS2, which was overlain by travertine layer 5. A concentration of charcoal, perhaps the remains of a hearth affected by solifluction, was also present on the surface of this layer in front of the entrance. Finds from this location may be associated with the Magdalenian culture (Klíma et al. 1962, 42–43). Most finds

were concentrated near the rock face, on the plateau in front of the cave and were probably related to the hearth, around which fragments of animal bones (mostly reindeer – *Rangifer tarandus* and horse – *Equus* sp.) and stone artefacts were concentrated. Other stone artefacts that may be associated with this cave occupation horizon came from secondary positions at sites damaged by previous excavations. The chipped stone industry was predominantly made of Moravian Jurassic cherts and Cretaceous spongolite, less so from erratic flint and only sporadically from radiolarite. While a substantial proportion of the artefacts were heavily patinated, some were only covered with a faint patina and the spongolites and radiolarites were not patinated at all. This evidence of evolved Upper Paleolithic industry included a large number of narrow bladelets; retouched tools, including end scrapers, with double, thumb nail and nosed pieces; and numerous burins, among which common types of burins on truncation, dihedral and core burins were represented but double and beaked burins (Lacan type) also appeared. Of the borers, only one indistinct blunt specimen was present, though other borers are known from later collections from the heap in front of the cave. The presence of a trapezoidal retouched bladelet is of interest. Backed bladelets were numerous, and some of these were also truncated to a shape of the rectangular bladelets typical of the Magdalenian. These tools served Magdalenian hunters as segments for the armature of compound tools. Of note from the accompanying debitage were several narrow bladelets, often broken and sometimes locally retouched, including crested blades and one prismatic single-platform core. A single burin spall and several tiny flakes, chips and fragments were also present in the collection. Another point of interest was the absence of splintered pieces, which are common at other Magdalenian sites (Klíma et al. 1962, 42–43). There can be no doubt, however, that most of the Magdalenian chipped stone industry is now located on the spoil heap in front of the cave, from which M. Oliva (1978) recovered several typical artefacts. In view of this, it is interesting that the much more intensive prospecting by Vaňura failed to yield any artefacts from the heap. It was likely caused by the fact that as a natural scientist he was much more interested in geology and paleontology than in archaeology. Based on the nature and quantity of finds, the Magdalenian site at Švédův stůl Cave can be interpreted as evidence of a short-term, perhaps repeated, residence of hunters and gatherers in the cave and on the platform in front of the cave. However, the local finds, in terms of their quantity, variety and quality, cannot be compared with those from central settlements such as nearby Pekárna Cave in the Říčka Valley.

Holocene layers 2–4, preserved on the plateau in front of the cave, have provided archaeological finds from the Neolithic to the Hallstatt periods. Inside the cave, intact Holocene sediments were no longer present during Klíma's excavation, even in the stratigraphic block preserved under the large stone at the back of the cave, in which the sequence of layers was terminated by loess layer 6 from the end of the LGM (Fig. 6). Most of the sediments from the interior were exported to the platform in front of the cave during Martin Kříž's excavation in 1886–1887 and left as a spoil heap that Klíma later designated as layer 1 in his description of site stratigraphy (see Klíma et al. 1962, 23; Fig. 6 and 33 within this article). The post-Paleolithic finds from Švédův stůl Cave have recently been examined in Soňa Michalkó's Master's thesis (Ondroušková 2011), which focuses on the settlement of caves in the Moravian Karst from the Neolithic to the Migration Period, and most recently they have also been mentioned in a publication of Blansko Museum dedicated to prehistory and early history in the Blansko region and in the Moravian Karst (Novák ed. 2020). The lower brown-clay part of layer 4 contained finds dating to the Neolithic, including numerous sherds of the Linear Pottery culture. One globular vessel made of finely floated clay, decorated with two horizontal bands of nail incisions below the rim and on the belly with triple broken lines of finer incisions with plastic protuberances at the fracture points, could be reconstructed in its entirety (Klíma et al. 1962, 86, Fig. 169). Another sherd from a second globular vessel of finely floated clay was decorated with two pairs of horizontal lines and two pairs of broken lines at the base. Across and beyond these lines there were vertical broader and deeper incisions of the Žielezovce type (Klíma et al. 1962, 88, Fig. 171). Other pottery sherds from this layer were made of coarser material decorated with nail incisions and plastic protuberances (Klíma et al. 1962, 86, Fig. 167–168). Ground stone industry is represented by a shoe-adze made of amphibolite (Klíma et al. 1962, 87, Fig. 172) and a fragment of Kulm schist with a smoothed edge. Owing to the presence of the Žielezovce type incisions on one of the sherds, the assemblage can be dated to the younger stage of the Linear Pottery culture, i.e. Phase IIc (Ondroušková 2011, 80). Pottery fragments dating to the younger stage of the Lengyel culture were found in the upper part of layer 4, comprising a fragment from a vessel's belly with a protuberance and a fragment of a horned handle with a vertically pierced hole originating from a piggin (Klíma et al. 1962, 88, Fig. 176–177). A flat amphibolite axe also appears to belong to this same period (Klíma et al. 1962, 87, Fig. 175). The lower part of layer 3 contained fragments of Early Bronze Age pottery, including the rim of a vessel with a handle from which seven vertical lines run, typical of the Únětice culture (Klíma et al. 1962, 88, Fig. 178). The upper part of layer 3 contained just a few pottery sherds dating to the Early Iron Age (Hallstatt Period). The interpretation of a sherd, supposedly from this position, with plastic decoration characteristic of the Early Eneolithic Funnelbeaker culture, remains uncertain (Klíma et al. 1962, 88, Fig. 179) and perhaps provides evidence of some admixture in this layer. Layer 2 contained ceramic material dating to the 15th and 16th centuries. Within the framework of Klíma's excavation, the platform above the cave was also investigated to find evidence of post-Paleolithic settlement; however, the small trench excavated above the cave proved sterile. M. Oliva later excavated a smaller trench at the highest point of the promontory above the cave, about 90 m southeast of the cave's upper entrance, which yielded several prehistoric sherds (Ondrušková 2011, 81). Other finds from the later periods come from relocated sediments and include metal artefacts from the medieval and modern periods, 19th and 20th century coins, recent ceramic and glass sherds and other modern refuse.

4.3 Paleontological finds

Švédův stůl Cave is considered one of the richest paleontological sites of the Upper Pleistocene in the Moravian Karst (Musil 1962; 2002, 91–93; 2014, 187–190; Musil a kol. 1993, 99). The problem with the site, however, is that it was excavated too early, sometimes using rather imprecise methods, and thus it is not possible to reconstruct the cave's faunal spectrum more accurately on a layer-by-layer basis. Where it has been possible to trace them, the contents of the different strata from the various excavations are given in the accompanying table (Tab. 1). In the text, we will limit ourselves to listing the animal species found by taxon.

Among the many animal species found in the Pleistocene layers, the dominant species tended to be Artiodactyls (such as the Caspian red deer – *Cervus elaphus maral,* Irish elk – *Megaloceros* sp., elk – *Alces alces,* reindeer – *Rangifer tarandus,* aurochs – *Bos primigenius,* bison – *Bison priscus,* chamois – *Rupicapra rupicapra,*

	K 1903	K 1909	KM	Č 1904	M 1906	M V6	M V7	M V8	M V9	M V10–14	M V15	V 1964 A	V 1964 C	V 1983 W1/2	V 1983 W1 R/W	V 1992 W1/2	V 1992 W1
Artiodactyla																	
Cervus elalaphus	150												2	2		2 (+6?)	15 (+15?)
Megaloceros sp.	5																1
Alces Alces	25											1					
Rangifer tarandus	200																2
Bos primigenius	190											1	3				
Bison priscus																	
Rupicapra rupicapra	4																
Ovis seu Capra																	
Capra ibex	3																
Ovibos moschatus																	1
Sus scrofa	17																
Perissodactyla																	
Equus mosbachensis																	
Equus germanicus																	
Equus sp.												15	15	7		8	44
Equus cf. *gmelini*																	
Asiinus hydruntinus																	
Coelodonta antiquitatis	350											2	5	6		8	7
Stephanorhinus sp.																	
Proboscidea																	
Mammuthus primigenius	60											1	1			1	5
Carnivora																	
Ursus spelaeus	over 1,000											23	126	77		23	144
Ursus arctos																	1
Crocuta spelaea	150											4	8	12	1	8	19
Hyaena hyaena														1			
Panthera spelaea	35																
Panthera pardus	3																
Canis lupus	15											1		2			17
Vulpes vulpes	2												7	6		4	15
Vulpes lagopus	50														1	7	28
Vulpes corsac																	
Felis silvestris	98																1
Lynx lynx																1	2
Gulo gulo	1												3	2		1	5
Meles meles	7																2
Martes martes														1		7	16
Lutra lutra	5																
Lagomorpha																	
Lepus sp.																3	
Lepus timidus	80																6
Ochotona pusilla																	4
Eulipotyphia																	
Sorex alpinus																	
Rodentia																	
Hystrix vinogradovi														2		2	6
Marmota bobac																	
Arvicola terrestris														57	29	20	96
Dicrotonyx torquatus														2			7
Cricetus phaeus																	
Chionomys nivalis														12	2		8
Microtus gregalis														15	1		14
Microtus arvalis														40	31	5	9
Microtus oeconomus														6		1	7
Microtus agrestis																1	13
Glis glis																	1
Spermophyllus citellus														1	1		2
Castor fiber	5																
Aves																	
Lagopus sp.	75																
Mollusca																	
Helix pomatia																	
Limax maximus																1	
Aegopinella nitens															1		
Hominodea																	
Homo neanderthalensis					1							2		2			1

Tab. 1. Faunistic spectrum found in Švédův stůl Cave during different excavations. Animal species present in particular excavations or layers are highlighted in grey. Where traceable, the exact number of bones found is also given. Explanatory notes: K 1903 – finds from M. Kříž's excavation from 1886–1887 (Kříž 1903); K 1909 – finds from M. Kříž's excavation in 1908 (Kříž 1909); KM – finds from M. Kříž's excavation stored in the Anthropos Institute depository (allegedly from the brown cave soil complex), which were later processed by R. Musil (2014, 188–189); Č 1904 – finds from F. Černý's excavation under the chimney in the back of the cave in 1904 (Černý 1904); M 1906 – finds from excavation by K. Kubasek in 1905, published by A. Makowsky (1906); M V6–V15 – finds from excavation by B. Klíma's team from 1953–1955, from layers 6–15, published by R. Musil (1962); V 1964 A – finds by J. Vaňura from the end corridor under the chimney in 1962 and 1964 (Vaňura 1964a), see Fig. 7; V 1964 C = finds made in 1962 by J. Vaňura in the corridor at the southwestern end of the cave, see Fig. 7 (Vaňura 1964a); V 1983 W1/2, W1 and R/W – finds made in 1980 by J. Vaňura in the basal assemblage in the depression in front of the entrance to the end corridor from individual layers (Vaňura 1983); V 1992 W1 /2 and W1 – finds of J. Vaňura from the basal sediments at the end of the corridor under the chimney in 1992 from layers W1 and W1/2 (Vaňura 1992). In addition to the species listed in the table, J. Vaňura (1992) also mentions the discovery of the skeletal remains of a weasel (*Mustela nivalis*) and the premolar of a forest elephant (*Mammuthus meridionalis*) dating to the Lower Pleistocene in the spoil heap in front of the cave.

Tab. 1. *Faunistické společenstvo nalezené v jeskyni Švédův stůl v rámci jednotlivých výzkumů. Druhy živočichů přítomné v jednotlivých výkopech nebo vrstvách jsou zvýrazněny šedě. Tam, kde to bylo dohledatelné, je uveden i přesný počet nalezených kostí. Vysvětlivky: K 1903 – nálezy z výzkumu M. Kříže z let 1886–1887 (Kříž 1903), K 1909 – nálezy z výzkumu M. Kříže v roce 1908 (Kříž 1909), KM – nálezy z výzkumů M. Kříže uložené v depozitáři Ústavu Anthropos (údajně z komplexu hnědých půd), které později zpracoval R. Musil (2014, 188–189), Č 1904 – nálezy z výzkumů F. Černého pod komínem v zadní části jeskyně v roce 1904 (Černý 1904), M 1906 – nálezy z výzkumu K. Kubaska z roku 1905, které publikoval A. Makowsky (1906), M V6-V15 – nálezy z výzkumu týmu B. Klímy z let 1953–1955, z vrstev 6–15, které publikoval R. Musil (1962), V 1964 A – nálezy J. Vaňury uskutečněné v letech 1962 a 1964 v koncové chodbičce pod komínem (Vaňura 1964a), viz obr. 7, V 1964 C – nálezy J. Vaňury uskutečněné v roce 1962 v chodbičce na jihozápadním konci jeskyně, viz obr. 7 (Vaňura 1964a), V 1983 W1/2, W1 a R/W – nálezy J. Vaňury uskutečněné v roce 1980 v bazálním souvrství ve sníženině před vchodem do koncové chodbičky rozdělené podle jednotlivých vrstev (Vaňura 1983), V 1992 W1/2 a W1 – nálezy J. Vaňury uskutečněné v bazálních sedimentech koncové chodbičky pod komínem v roce 1992 rozdělené podle jednotlivých vrstev – W1 a W1/2 (Vaňura 1992). Kromě v tabulce uvedených druhů uvádí J. Vaňura (1992) z haldy před jeskyní ještě také nález kosterních pozůstatků lasice kolčavy (Mustela nivalis) a premoláru spodnopleistocenního lesního slona druhu Mammuthus meridionalis.*

sheep or goat – *Ovis seu Capra*, ibex – *Capra ibex*, muskox – *Ovibos moschatus* and wild boar – *Sus scrofa*), Perrisodactyls (such as rhinoceroses – *Coelodonta antiquitatis* and *Stephanorhinus* sp. and horses – *Equus mosbachensis, Equus germanicus, Asinus hydruntinus* and *Equus cf. gmelini*) and Proboscidea (such as the woolly mammoth – *Mammuthus primigenius*). An interesting find was the premolar of a forest elephant (*Mammuthus meridionalis*, formerly *Archidiskodon gromovi*) from the Lower Pleistocene. In addition, there were also bones of carnivores (such as cave bear – *Ursus spelaeus*, brown bear – *Ursus arctos*, cave hyena – *Crocuta spelaea*, striped hyena – *Hyaena hyaena*, cave lion – *Panthera spelaea*, leopard – *Panthera pardus*, wolf – *Canis lupus*, fox – *Vulpes vulpes*, Arctic fox – *Vulpes lagopus*, Corsac fox – *Vulpes corsac*, wild cat – *Felis silvestris*, lynx – *Lynx lynx*, wolverine – *Gulo gulo*, marten – *Martes martes*, weasel – *Mustela nivalis*, otter – *Lutra lutra* and badger – *Meles meles*), Lagomorpha (such as hare – *Lepus timidus*, *Lepus* sp. and steppe pika – *Ochotona pusilla*), insectivores (such as the Alpine shrew – *Sorex alpinus*) and rodents (such as the porcupine – *Hystrix vinogradovi*, the Bobak marmot – *Marmota bobak*, the European water vole – *Arvicola terrestris*, Arctic lemming – *Dicrotonyx torquatus*, European hamster – *Cricetus cricetus*, European edible dormouse – *Glis glis*, European snow vole – *Chionomys nivalis*, narrow-headed vole – *Microtus gregalis*, common vole – *Microtus arvalis*, tundra vole – *Microtus oeconomus*, short-tailed field vole – *Microtus agrestis*, European ground squirrel – *Spermophyllus citellus* and Eurasian beaver – *Castor fiber*) and birds (such as the willow ptarmigan – *Lagopus lagopus* and rock ptarmigan – *Lagopus muta*). A large proportion of the microfauna was only found during research undertaken by Jaromír Vaňura, who wet-sieved at least a part of the excavated sediments (Vaňura 1992). Vaňura also reported findings of malacofauna, including garden snail (*Helix pomatia*), great grey slug (*Limax maximus*) and glass snail (*Aegopinella nitens*), although these probably represent a recent admixture (Vaňura 1983).

Remains in the lower layers (13 and 14) were mainly dominated by aurochs and bison, which, along with the records of elk, wild boar and beaver, indicate a warmer, wetter climate, presumably during one of the interstadials of the early MIS3, during which more open forests with deciduous trees were spreading. Subsequent strata (11 and 12) suggest significantly cooler periods, as indicated by the deposition of loess associated with the expansion of cool steppe and tundra during the Early Pleniglacial and the presence of cold-tolerant mammoth fauna (woolly mammoths, rhinoceroses and muskoxen). Regarding a possible environmental reconstruction, determination of tree species from selected charcoal remains by V. Nečesaný did not prove too helpful (Klíma et al. 1962, 30). Specifically, charcoal from hearth b in layer 8 was identified as pine (*Pinus sylvestris*), hearth c in layer 11 provided charcoal remains of pine, fir (*Abies pectinata*) and spruce (*Picea sp.*) while hearth d in layer 14 yielded charcoal of indeterminate coniferous trees. Of interest was the abundance of shed antlers (particularly the burr and proximal parts) from a large subspecies of deer similar to the Caspian red deer. These antlers were probably brought to the cave by Neanderthals and perhaps then used for some kind of activity (Oliva 2017, 13).

According to R. Musil (2002), remains of sheep or goat (*Ovis seu Capra*), pig (*Sus domestica*), dog (*Canis familiaris*), cattle (*Bos taurus*) and chicken (*Gallus gallus f. domestica*) were all found in Holocene strata. Records of Holocene fauna mainly come from the research of Martin Kříž (1909) and from mixed contexts in the heap in front of the cave, though here, Pleistocene fauna is often found together with Holocene fauna. Consequently, more detailed information on the composition of Holocene fauna found in the cave is not available.

How so many animal bones got into the cave is an interesting question. Švédův stůl is certainly not a typical bear cave, such as Výpustek Cave in the central part of the Moravian Karst (Musil 2010) or Pod Hradem Cave in the northern part (Musil 1965) – it is too small and open. Consequently, the proportion of bear bones is also lower, although they are still abundant. Musil, who analysed the fauna found by Klíma's research team (Musil 1962; 2014, 187–190), assumed, on the basis of the numerous hyena bites recorded, that this was a typical hyena den and that a large number of the bones were brought into the cave by hyenas (Musil a kol. 1993, 99). While Vaňura did not dispute the presence of hyena bites, and even added evidence of bones being gnawed by porcupines, he preferred the hypothesis that the bones had been washed into the cave through a chimney from the space above the cave rather than that most of the bones were dragged in by hyenas. Nor did he rule out the possibility that a significant proportion of the bones came from human prey (Vaňura 1965b; 1992). However, judging by the relative scarcity of human stone tools found in the cave and its foreground, it would appear that the cave was only visited by prehistoric people occasionally and episodically. Consequently, it is more likely that the fossil animal bones accumulated here are indicative of the species diversity near the cave during the Last Glacial Period, rather than of the hunting preferences of prehistoric people.

Among the animal species found in the Pleistocene layers, in addition to typical representatives of mammoth fauna inhabiting the cold steppes during the Würm stadials we also encounter more thermophilic fauna (*Cervus elaphus, Alces alces, Sus scrofa*, etc.), which are likely to have inhabited coniferous forests near the site during the Interstadial periods. Many other species were probably able to adapt to the climate fluctuations of the Last Glacial Period and thus occur continuously near the site. Of the unique species, the skeletal remains of the small porcupine species *H. vinogradovi* is worth mentioning (Vaňura 1982; 1983; 1984; 1992). The only other evidence of porcupine bones in the Moravian Karst comes from Žižkůvka Cave near Ostrov u Macochy (Musil a kol. 1993, 101–102). The remains are thought to be those of a species of crested porcupine (*Hystrix cristata*) and, though nothing is known about its temporal classification, it probably comes from the older Pleistocene sediments. Regarding the porcupine finds from Švédův stůl Cave, given their presence in the intact sediments of layers W1 and W1/2, along with fossil bones gnawed by these porcupines, we can assume that they probably lived here during one of the warmer fluctuations at the beginning of the Last Glacial Period. Another interesting find is the isolated skeletal remain of a striped hyena (*Hyaena hyaena*). In this case, we would lean towards at least a Middle Pleistocene age for this find. It is also possible that remnants of old sediments were preserved in some of the cave fissures, as suggested by the discovery of a tooth of the forest elephant *Mammuthus meridionalis* (formerly *Archidiskodon gromovi*), a member of the Villafranchien fauna of the Lower Pleistocene (Vaňura 1992), in the spoil heap in front of the cave.

In 1964, Vaňura discovered a right part of a small animal mandible in layer W1/2, about 2 m from the entrance of the end passage under the chimney (Vaňura 1965c; 1992), which was later identified by J. Kratochvíl as an Asian sable (*Martes zibellina*). We were able to trace this find in the collections of the Anthropos Institute of the Moravian Museum and check the original species designation of the mandible on the basis of comparative material and literature (Kosintsev, Gasilin 2011; Gasilin, Konintsev 2013; Gimranov, Kosintsev 2015), confirming that it was not in fact the mandible of an Asian sable but rather a common European pine marten (*Martes martes*).

4.4 Anthropological findings

The so-called Ochoz Neanderthal mandible is probably the most famous find from Švédův stůl Cave. Indeed, Švédův stůl Cave is one of just three Moravian cave sites (along with Kůlna Cave near Sloup and Šipka Cave near Štramberk) where skeletal remains of Neanderthals have been found. As such, we examine its fate in more detail in this article, although without forgetting the other actual and supposed finds of human skeletal remains originating from the cave. The fate of the Ochoz mandible has been more thoroughly discussed in a recent article by one of the authors of this paper (Oliva 2017), where you can find many details regarding the fate of this unique find and detailed references.

The Ochoz mandible was discovered through a lucky accident in 1905 by Karl Kubasek, a geology student at the German Technical University in Brno, who, together with his colleague Alfons Zlamal, undertook a small excavation at Švédův stůl Cave. Karl, a native of Bílovice nad Svitavou, was a member of the Cave Research Group of the Association of German Tourists in Brno, while his brother, Viktor, was a vice-chairman of this organisation (Golec 2015, 53). Karl was more interested in speleology than in excavations, but he was also a great climber, for example scouting the first route up Krkavčí skála cliff above Býčí skála Cave (Gregor et al. 2012, 30–48). While Kubasek did not leave any reports about his excavations in Švédův stůl Cave, later testimonies (Rzehak 1906) indicate they took place at the back part of the cave, which at that time consisted of a low passageway leading to a small room with a hole in the ceiling. Here, Kubasek excavated soil with bones of Pleistocene fauna from a place of some older dig under yellow clay with roots that had probably slipped in, as well as the underlying sediment with bones, from the rock window. The older dig may have come from the excavations of a high school teacher, František Černý, who had searched for fossil mammal bones here the previous year (Černý 1904, 114). It would make sense, since F. Černý was assisted in this research by his student, K. Kubasek, suggesting that he simply continued excavating where they had left off the following year, this time without his teacher. The finds of animal bones were published by Kubasek's university teacher, Alexander Makowsky, a Professor at Brno University of Technology, who assigned them to representatives of the Pleistocene mammoth fauna, namely cave bears, hyenas, wolves, foxes, horses, reindeer, bovids, mammoths and woolly rhinoceros (Makowsky 1906). The human mandible was soon after published as Neanderthal by another Professor at German University of Technology (Technische Hochschule) in Brno, Anton Rzehak (1906). However, this classification alarmed another of the experienced karst explorers, Martin Kříž, a native of nearby Líšeň (today Brno-Líšeň) and a notary in Žďánice, who carried out extensive excavations at Švédův stůl Cave between 1886 and 1887 but found no human remains or stone tools. Because of Kubasek's discovery, he renewed his excavations in 1908 and, when he again found no evidence of human presence in the cave, decided to at least compromise on the discovery of the mandible and Rzehak's interpretation. He argued that the jawbone was younger and belonged to a modern human from the later part of the Last Glacial Period. As one of his arguments, he cited the alleged finds of lemmings, marmots and Arctic foxes near the site of the jawbone discovery (Kříž 1909). Today, however, we know that these species are also members of the cold-steppe mammoth fauna, and thus do not challenge the jawbone's Neanderthal classification. Owing to the ancient morphology of the mandible (especially its thickness, height and shape of the teeth), however, most authorities of the time supported Rzehak's view, and thus the Ochoz mandible increased the inventory of then known Neanderthal bone remains. Later, in the mid-to-late 1920s, the archaeologists Josef Bayer (1925) and Josef Skutil (1927) questioned the jawbone's Neanderthal classification, based on the absence of Middle Paleolithic stone tools in the cave and the alleged slight inclination of the chin, though this has been shown to be broken off. The jaw's Neanderthal classification was confirmed at the time by a teacher, Karl Schirmeisen, who argued, among other things, by the discovery of a double-sided retouched scraper, which had been excavated shortly before in the spoil heap in front of the cave by another German amateur archaeologist, Franz Čupik (Schirmeisen 1927). After World War II, these discussions were put to rest by the excavation of Bohuslav Klíma, who succeeded in finding undoubted Middle Paleolithic tools *in situ* in the cave (Klíma et al. 1962). This was followed by a detailed analysis of the mandible by the anthropologists Jan Jelínek (Jelínek 1962) and Emanuel Vlček (Vlček 1969), both of whom agreed on a clearly Neanderthal classification.

Karl Kubasek also lent the mandible to Karel Absolon for study before the World War I, as shown by the handover protocol deposited in the archives of the Anthropos Institute of the Moravian Museum in Brno, wtritten by K. Absolon and signed by K. Kubasek when the find was returned to its owner by Karel Absolon (Fig. 10). This is the only document in Karl Kubasek's handwriting that we have been able to trace. As far as the further fate of the jaw is concerned, Kubasek decided to improve his financial situation by selling the find. Karel Jaroslav Maška reportedly offered 500 guldens for it to remain in Moravia (Klíma et al. 1962, 16); nevertheless, the discoverer decided to offer it to the manufacturer E. W. Fridrich from Blaton in Belgium (Schirmeisen 1926). Kubasek himself, like his brother, died in 1915 while fighting in World War I, in which he served as an aviator. As a result of his plane crashing into the cold waters of the Adriatic Sea, he developed rheumatism and heart disease, to which he succumbed while being held in captivity in the Genoese catacombs, as reported in a letter from his parents addressed to K. Absolon and dated 16 December 1915 (K. Absolon's archive, deposited in the Anthropos Institute of the Moravian Museum in Brno). Not long after, E. W. Fridrich also died, and it was decided that the Ochoz mandible should be donated to the museum in Goten, near Halle, where it appears in a contemporary inventory (Bethge 1925). According to another version, Friedrich's widow

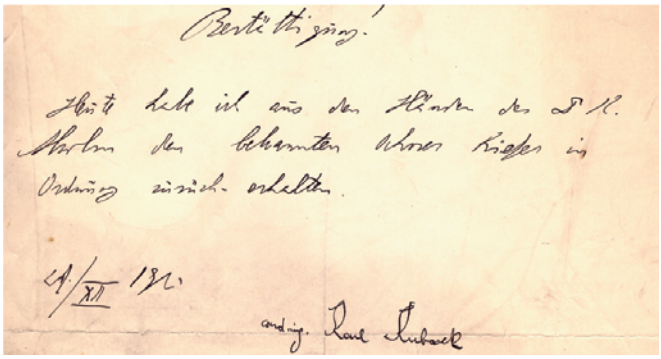

Fig. 10. Handover protocol for the Ochoz mandible, written in German on the occasion of the return of this find to its owner by Karel Absolon, who apparently had it on loan for study. Signed by Karl Kubasek. Translation of the text of the protocol: *'Confirmation! Today I have received back from the hands of Dr. K. Absolon the well-known Ochoz mandible. 21.12.1911 (?), cand. Ing. Karl Kubasek.'*

Obr. 10. *Rukopis předávacího protokolu k ochozské čelisti napsaný německy při příležitosti vrácení tohoto nálezu majiteli Karlem Absolonem, který jej měl zřejmě zapůjčený k prostudování. Podepsáno Karlem Kubaskem. Překlad textu protokolu: „Potvrzení! Dnes jsem z rukou dr. K. Absolona v pořádku zpátky obdržel známou ochozskou čelist. 21. 12. 1911 (?), cand. ing. Karl Kubasek."*

wanted to sell it and so had an appraisal drawn up by the anthropologist H. Virchow, who described it as Neanderthal (Virchow 1924). In any case, in 1927 it was sold to the newly founded Kaiser Wilhelm Institute, where it remained until the World War II, when the German management of the Moravian Museum expressed an interest in returning the mandible to Brno (Stloukal 1969). Fortunately, this did not happen, as otherwise it would probably have been burnt along with other finds (e.g. the famous Šipka Neanderthal mandible) at the end of the war during the fire at Mikulov Castle. A large part of the museum's collections had been then transported to the castle from Brno as, in the opinion of the museum's management at that time, it would be better protected there from possible bombing. In 1945, the collections of the Berlin–Dahlem Museum were also packed up and hidden in various places to protect them from bombing (Vlček 1969, 24). Some of these were completely lost; however, the Ochoz mandible was rediscovered after the war when unpacking a wooden box with ethnological collections from Berlin under the supervision of Professor K. Gerhardt from the Institute for Human Genetics in Münster. It was from here that the jawbone was taken to the Institute of Anthropology of the University of Freiburg in Breisgau in 1958, where it remained in the care of Professor Gerhardt, who brought it to the attention of Czechoslovak scholars. It was thanks to this that E. Vlček had the opportunity to see it during a preparation of his thesis on Neanderthals in Czechoslovakia (Vlček 1969). In 1969, the Prague anthropologist Milan Stloukal attended a congress of German anthropologists and geneticists in Mainz, where he was approached by the chairwoman of the congress, Ilse Schwidetzky. On behalf of West German anthropologists, she entrusted him with the Ochoz mandible and asked him to hand it over to the Moravian Museum (Stloukal 1969). In January 1970, Jan Jelínek took this rare find into his collections, and it remains in the Moravian Museum in Brno to this day (Oliva 2017, 12).

And what can we say about the Ochoz mandible based on anthropological analyses (Jelínek 1962; Vlček 1969; 2002)? The Neanderthal lower jaw is preserved as a fragment with the lower part of the body and both arms broken off, the left arm being broken behind the third molar and the right arm behind the second molar, leaving the third molar missing. The fracture at the base of the mandible appears to have been filled with some white matter shortly after its discovery to prevent further crumbling (Oliva 2017, 13). Jaromír Vaňura considered the damage to the base of the mandible to have been caused by the effect of water and weathering (Vaňura 1965b). The mandible appears to have belonged to an adult and, aside from the third right molar, the dentition is complete but considerably worn. All teeth, but especially the molars, show taurodontism, or extensively developed cavities in the teeth. The size of the teeth and the thickness of the jaw are considerable. The question remains as to how the mandible got to the find site, since no stone tools were found in its vicinity (these come from the front of the cave), only gnawed animal bones. It is possible that it was introduced here by hyenas; however, there are no bite marks on the jaw itself. Indeed, A. Rzehak argued that the fracture at the base suggests artificial chipping rather than biting by a hyena or another beast (Rzehak 1906). While paleoanthropological analyses were carried out by J. Jelínek and E. Vlček, this was some time ago and it may now be appropriate to re-examine the Ochoz mandible using more modern anthropological and genetic methods.

Despite extensive excavation, Klíma failed to find any further human skeletal remains. It was not until May 1964 that Zdeňka Vaňurová, daughter of Jaromír Vaňura, found a molar (M3) of a Neanderthal on the heap in front of the cave (Vaňura 1965b; 1965c). Anatomically speaking, though it could have been the missing molar from the Ochoz mandible, it is a tooth from another individual. The exact location of the find is given by J. Vaňura in a letter to B. Klíma (Vaňura 1965d, 3–4) as 'a heap of sediments coming from Klíma's excavation at the sinkhole near the left rock wall as seen from the cave'. Human incisor I2, apparently also found in 1964, is also likely to have come from the same place (Vaňura 1965d, 3–4). Though Vaňura says he did not publish this finding, but gave it to E. Vlček instead, we managed to trace this incisor in the collections of the Anthropos Institute at the Moravian Museum in Brno, where it was probably taken by Vlček. The box with this find is marked as *Homo sapiens*. As far as the molar (M3) found on the spoil heap is concerned, it also lies in the collections of the Anthropos Institute at the Moravian Museum in Brno and should be subjected to further modern, especially genetic, analyses. It is a right lower third molar, corresponding dimensionally to a Neanderthal rather than a modern human. The crown of the tooth is abraded down to the dentine, so the tooth may have originally been even larger. Based on the abrasion, the age of the individual at the time of death can be estimated at about 35 years. A groove in the enamel runs around the perimeter of the crown, dividing it into a larger upper portion and a smaller lower portion, and this may represent post-natal disturbance in the mineralisation of the tooth's base. The molar has only one massive blunt root, instead of the usual two and, as such, it cannot be the missing M3 from the Ochoz mandible, which had two roots. As in the case of the Ochoz mandible, taurodontism, i.e. an enlarged tooth cavity in the root area, is evident in the molar (Vaňura 1965a).

At the same time as the molar was discovered on the spoil heap, Vaňura discovered two presumed Neanderthal skull fragments in the W1/2 layer, approximately in the 6th metre of the 8 m long end passage under the chimney (Vaňura 1992, Fig. 4). These were a left temporal bone fragment (*squama ossis temporalis sinistra*) measuring 56 × 51 mm and a parietal bone (*os parietale*) fragment measuring 66 × 62 mm (Vaňura 1965b). Both cranial fragments are stored in the depository of the Anthropos Institute of the Moravian Museum in Brno. There is also one more cranial fragment of unknown origin in the same box. The use of modern analytical methods, such as ZooMS (Buckley et al. 2009), could definitively answer any questions as to whether these two fragments are indeed skeletal remains of a Neanderthal or of some animal (possibly a cave bear).

Further presumed Neanderthal skeletal remains were found in 1980, again in layer W1/2 in the depression in front of the entrance to the end passage at the back of the cave (Vaňura 1992). These were a longitudinal half of another hypertaurodont molar and an additional fragment of the left temporal bone (*squama ossis temporalis sinistra*) measuring 35 × 57 mm. If this was indeed a fragment of a Neanderthal skull, it would have to have come from a different individual than the 1964 temporal bone fragment as both bones were from the left side (Vaňura 1983). We were able to track down photographs of these finds in the Anthropos Institute depository, which were captioned 'submitted to NM'. However, no anthropological finds from Švédův stůl Cave are to be found in the depository of the National Museum in Prague (communication from P. Velemínský), so we have no choice but to conclude that these are currently untraceable finds, although this does not mean that they will not be found somewhere in the future.

The last presumed fragment of a Neanderthal skull came from Vaňura's excavation in 1992, when the basal sediments in the end passage under the chimney were examined. Another

small fragment measuring 32 × 15 mm, this time of the right temporal bone (*squama ossis temporalis dextra*), came from the base of lower layer W1, less than 4 m into the passage. This smallest putative fragment of Neanderthal skull is also stored in the depository of the Anthropos Institute at the Moravian Museum in Brno, meaning it is also available for ZooMS analysis (Buckley et al. 2009) to confirm or refute Vaňura's original species designation. It is also possible that additional Neanderthal skeletal fragments will be discovered as part of the current excavation of the spoil heap in front of the cave (Nejman et al. 2020; 2021; Bartík et al. 2023).

5. Unpublished documentation of Bohuslav Klíma's excavations

In 2019, as part of the preparations for the revision excavation on the platform in front of Švédův stůl Cave by the ARÚB, we undertook a new analysis of information available on previous research at the cave. In doing so, we managed to obtain a folder from Bohuslav Klíma Jr. containing documents related to excavations at the cave between 1953 and 1955 under the leadership of his father, Bohuslav Klíma Sr. This file contained not only Klíma's research notes but also drawings and photographs, correspondence and printed materials for a monograph dedicated to his excavation at the site (Klíma et al. 1962). One of the aims of this publication has been to bring previously unpublished examples of this documentation into the public domain, including documents with future research potential, such as historically valuable photographs documenting excavations at Švédův stůl Cave and, less so, the revision excavation at the site in front of the Ochoz Cave, which took place at the same time. All documents contained in the folder have now been scanned in high resolution and subsequently transferred to the Archive of the ARÚB, where they are available for study by interested parties. The original documents have been returned to the private archive of Bohuslav Klíma Jr.

The folder contained documents totalling 100 pages, a list of which is provided below:

Pages 1–2: *A brief description of Švédův stůl Cave for the administration of the Moravian Karst Protected Landscape Area (1981). Typescript.*

Pages 3–6: *Letter from J. Vaňura to J. Poulík regarding excavations at Švédův stůl Cave. He describes the alleged shortcomings of the excavation undertaken by the Institute of Archaeology of the Czechoslovak Academy of Sciences in Prague (Brno branch) under the leadership of B. Klíma. In particular, he mentions the presence of a large number of bones in the waste heap and the personal absence of B. Klíma, who was supposedly only visiting the site once every three weeks. He also mentions the loss of sediment samples taken during the excavation at the Institute of Archaeology. He describes the course of his work in the passage under the chimney in 1962, where he managed to discover the mandible of a putative sable (Martes zibellina), and details of the discovery of the Neanderthal tooth (M3) in the spoil heap in front of the cave by his daughter Z. Vaňurová. He also mentions the intact sediments under the profile column in the cave. Finally, he asks about the possibility of publishing the results of his excavations in the cave. Registered letter dated 2nd October 1964, signed by Jaromír Vaňura. Underlined typescript with inscribed notes by B. Klíma.*

Pages 7–8: *Reply of B. Klíma to J. Poulík in a matter of the letter of J. Vaňura of 2nd October 1964. In it, Klíma rejects most of the accusations made by J. Vaňura. He justifies his personal absence from the excavation on a daily basis through the presence of two technicians (Gebauer and Radda) at the site. He himself was allegedly present at least three times a week. He admits the presence of overlooked bones in the heap as the sediments were neither dry- nor wet-sieved. The profile column in the cave was demolished in 1955. The lower layers of the profile column were left in the cave for further sampling. He accuses J. Vaňura of having dug through these layers in August 1964. He also accuses him of destroying other intact sediments. According to B. Klíma, insults by J. Vaňura cannot be excused even by his illness (allegedly schizophrenia). Typescript dated in Brno on 5th October 1964.*

Pages 9–10: *Reply of J. Vaňura to the letter of J. Poulík. In it, he provides information on his work in Švédův stůl Cave over 1964. It was allegedly not him who destroyed the remains of the control profile (profile column) in the cave. He also criticises the quality of B. Klíma's excavations. Undated typescript.*

Page 11: *Letter from Karel Žebera to Bohuslav Klíma, in which K. Žebera confirms receipt of B. Klíma's comments on J. Dvořák's article printed in Anthropozoikum (Dvořák 1957). Karel Žebera recommends Klíma's article entitled 'The importance of archaeological excavations in the caves of the southern part of the Moravian Karst for Quaternary geology. Some notes on Jaroslav Dvořák's article in Anthropozoikum VI (1956)' (Klíma 1958) for printing and agrees with Klíma, who complains about Dvořák's unauthorised excavations on the locations he investigated. Typescript with stamp of the Central Geological Institute, dated 1st February 1958 and signed by K. Žebera.*

Page 12: *Official recommendation of the article by B. Klíma (1958) – reaction to the article by J. Dvořák (1957) – for printing. Typescript dated 1st February 1958, signed by K. Žebera.*

Pages 13–21: *Typescript of the article 'The Significance of Archaeological Excavations in the Caves of the Southern Part of the Moravian Karst for Quaternary Geology. Some Remarks on Jaroslav Dvořák's Article in Anthropozoikum VI (1956)', submitted by B. Klíma in January 1958 (Klíma 1958).*

Page 22: *Appreciation from B. Klíma to J. Vaňura for his work at Švédův stůl Cave (Vaňura 1965b). Klíma mentions a lecture by J. Vaňura on Švédův stůl Cave, which took place on 26th March 1965. He explains his intention to begin a new excavation at Švédův stůl Cave from the Ochoz Stream Valley side. Typescript dated 21st July 1965.*

Pages 23–27: *Registered letter from J. Vaňura to B. Klíma. J. Vaňura responds to B. Klíma's appreciation from 21st July 1965 and accuses him of preventing the publication of his work on Švédův stůl Cave through Vojen Ložek and other colleagues. It is mentioned that, in January 1965, he allegedly excavated intact sediments containing animal bones in the main hall of the cave, which, according to B. Klíma, should have been already dug to the bottom. He reports the discovery of a human incisor (I2), which he gave to Emanuel Vlček. He writes that it was found on the spoil heap in the same place as the earlier Neanderthal molar (M3), which his daughter Zdeňka found in May 1964 in front of the cave. 'Both M3 and I2 are from the site by the sinkhole at the south-southwestern wall, you can recognise the exact spot according to the traces of digging'. At the end of the letter, Vaňura announces his intention to stop all his excavations. Typescript signed by J. Vaňura, dated 23rd July 1965.*

Pages 28–30: *Extracts from the work of M. Kříž (1909) and F. Černý (1904), in the handwriting of B. Klíma. Manuscript in pencil and pen.*

Page 31: *Redrawing of the Švédův stůl Cave ground plan by Martin Kříž (1909, 219, Fig. 1).*

Page 32: *Drawing of the control column in Švédův stůl Cave (Klíma et al. 1962, 25, Fig. 7; see Fig. 6 in this article). Material for printing.*

Page 33: *Photo of the control column in Švédův stůl Cave (Klíma et al. 1962, 91, Abb. 5). Material for printing.*

Page 34: *Drawing of the entrance to Švédův stůl Cave, by the painter J. Jaša (Klíma et al. 1962, 90, Abb. 3). Material for printing.*

Page 35: *Top photo: The entrance to the cave and the western wall in front of the cave, showing the layers and a measuring pole. Bottom photo: Western wall in front of the cave, photographed from the entrance.*

Page 36: *Top photo: The entrance to the cave before the Klíma's excavation started, photographed at a different angle from the photo published by B. Klíma et al. (1962, 89) as the Abb. 1 (Fig. 4 in this article). Bottom photo: Top view of the cave chimney (upper entrance).*

Page 37: Top photo: Entrance and foreground of the cave after partial excavating of sediments (Fig. 11). Bottom photo: Western wall in front of the cave, showing the layers and a measuring pole. Taken at a different angle than the similar photo published by B. Klíma et al. (1962, 90) as Abb. 4.

Page 38: Indistinct photo with pickaxe inside the cave.

Page 39: Photo of the platform in front of the cave, taken from the cave entrance, with wheelbarrow and two workers (Fig. 12).

Page 40: Enlarged photo of the western wall in front of the cave, showing the individual layers and a measuring pole; taken at a different angle than the similar photo published by B. Klíma et al. (1962, 90) as Abb. 4. Fig. 13 in this article.

Page 41: Photo of the platform in front of the cave.

Page 42: Photo of the trench in front of the cave, taken from the platform above the cave (Fig. 14).

Page 43: Top photo: View of the trench in front of the cave from the cave entrance area. Bottom photo: View of the trench in front of the cave from a different angle.

Page 44: Photo of the left part of the cave entrance. According to this photo, intact sediments could still be preserved here (Fig. 15).

Page 45: Top photo: View of the inside of the cave. Bottom photo: Similar view of the inside of the cave.

Page 46: Top photo: Photo taken during documentation of excavation. Josef Pelíšek in conversation, presumably with the technician J. Radda (Fig. 16). Bottom photo: Portrait photo of pedologist J. Pelíšek in the area in front of the cave (Fig. 17).

Page 47: Top photo: Geologist Karel Zapletal studying a stratigraphic column in the cave (Fig. 18). Bottom photo: K. Zapletal studying a stratigraphic column in the cave, rear view.

Page 48: Photo left: Drilling in front of the cave. Photo right: Workers from Ochoz hammering in a steel stake on the platform in front of the cave.

Page 49: Top photo: Indistinct view from the trench in front of the cave. Bottom photo: Early stages of excavation in front of the cave, with workers from Ochoz (Fig. 19).

Page 50: Top photo: View of the trench in front of the cave from the platform above the cave, with a woman with daisies in the background. Bottom photo: View of the rocks around the cave.

Page 51: Top photo: View of Švédův stůl Cave from the Říčka stream valley. Bottom photo: Side view of the stratigraphic column in the cave.

Page 52: Enlarged photo from the archaeological commission held on 6th October 1953. H. Machová informs the commission participants about her first field research, which was revision excavation undertaken at the Magdalenian site in front of Ochoz Cave that took place simultaneously with excavation at Švédův stůl Cave (Fig. 20). The commission participants are listed in the commission report (document on page 68).

Page 53: Photo left: View of the western wall in front of the cave from the outside, with a worker in the background. Photo right: View of the western rock wall in front of the cave taken from inside the cave, with workers and wheelbarrows.

Page 54: Top photo: View of the excavation on the platform in front of the cave, with workers. Bottom photo: View of the excavation on the platform in front of the cave towards the western wall, with workers.

Page 55: Top photo: Illustrative photo of the exploration platform in front of the cave, with workers (Fig. 21). Bottom photo: Similar illustrative photo with workers.

Page 56: Photo left: Discussion in front of the cave – J. Poulík, J. Böhm and K. Zapletal (Fig. 22). Photo right: Similar photo.

Page 57: Top photo: Two photos of B. Klíma at the levelling device in front of Švédův stůl Cave (Fig. 23). Bottom photo: Interview in front of Ochoz Cave (J. Poulík, J. Poulíková, H. Machová and blurred gentleman).

Page 58: Top photo: View of the excavation in front of the cave taken from inside the cave. J. Poulík, V. Gebauer, K. Hrazdíra and other workers (Fig. 24). Bottom photo: View of the excavation in front of the cave, looking towards the cave. J. Poulík photographed from behind.

Page 59: Top photo: Illustrative photo of the excavation in front of the cave, with workers (Fig. 25). Bottom photo: View of the western wall in front of the cave, showing the different layers, a measuring pole and workers (Fig. 26).

Page 60: The artist J. Jaša drawing the cave entrance (Fig. 27).

Page 61: Side photo of the stratigraphic column in the cave, showing the western passage (Klíma et al. 1962, 91, Abb. 6). Material for printing.

Page 62: Photo of the western wall at the southern entrance (Klíma et al. 1962, 92, Abb. 7). Material for printing.

Page 63: Photo of the southern entrance (Klíma et al. 1962, 93, Abb. 9). Material for printing.

Page 64: Photo of the eastern wall at the southern entrance (Klíma et al. 1962, 92, Abb. 8). Material for printing.

Page 65: Photo of the eastern side of the platform in front of the cave (Klíma et al. 1962, 93, Abb. 10). Material for printing.

Page 66: Photo of the western wall of the stratigraphic column in the cave (Klíma et al. 1962, 94, Abb. 11). Material for printing.

Page 67: List of finds, page 1, other pages missing. Handwritten in pen.

Page 68: Protocol of the Commission on the excavation of Švédův stůl Cave, 6th October 1953. Present: J. Bárta (Institute of Archaeology, Slovak Academy of Sciences, Nitra), J. Cibulka (Charles University, Prague), V. Hrubý (Moravian Museum, Brno), H. Machová (Institute of Archaeology, Czechoslovak Academy of Sciences, Brno), R. Musil (Moravian Museum, Brno), J. Pelíšek (Agricultural University, Brno), Pokorný (Moravian Museum, Brno), J. Pošmourný (Czechoslovak Ministry of Culture), J. Poulík (Institute of Archaeology, Czechoslovak Academy of Sciences, Brno), B. Svoboda (Institute of Archaeology, Czechoslovak Academy of Sciences, Prague), A. Točík (Institute of Archaeology, Slovak Academy of Sciences, Nitra). The Commission commended B. Klíma for his well-conducted excavation and recommended that the stratigraphic column in the cave should be kept for future years. Furthermore, the commission visited the revision excavation of H. Machová in front of Ochoz Cave, which took place at the same time as that at Švédův stůl Cave. Typescript.

Page 69: Unfinished sketch of a stratigraphic comparison table, preparation for Fig. 12 (Klíma et al. 1962, 33). Manuscript drawn in pencil.

Page 70: Sketch of a stratigraphic comparison table (Klíma et al. 1962, 33, Fig. 12). Manuscript drawn in pencil on graph paper.

Page 71: Sketch of the reconstructed sediment profile in the cave and on the platform in front of the cave (Klíma et al. 1962, 31, Fig. 12). Manuscript drawn in pencil on graph paper.

Page 72: Sketch of the floor plan of Švédův stůl Cave, with the scale plotted on the platform in front of the cave. Manuscript drawn in pencil and pen on graph paper (Fig. 28).

Page 73: Notes of B. Klíma from a lecture by J. Pelíšek on the stratigraphy of sediments in Švédův stůl Cave. Pen manuscript of B. Klíma.

Page 74: Drawing of the cave floor plan (Klíma et al. 1962, 12. Fig. 3). Material for printing.

Page 75: Profiles in Švédův stůl Cave (Klíma et al. 1962, 13, Fig. 5). Pen drawing. Material for printing.

Page 76: Sketch of profiles in the cave (see documentation, page 75). Pencil drawing on graph paper with pencil annotations.

Page 77: Sketch of the sediment profile for the area in front of the cave, in the trench at the western rock face between metres 9 and 10. Pencil drawing on graph paper, with layers coloured in with crayons. Basis for Fig. 9 (Klíma et al. 1962, 28). Fig. 29 in this article.

Page 78: Sketch of the sediment profile for the area in front of the cave at metre 9. Pencil drawing on graph paper, with layers coloured in with crayons. Basis for Fig. 10 (Klíma et al. 1962, 29). Fig. 30 in this article.

Page 79: Drawing of a side view of the stratigraphic column inside the cave. Basis for Fig. 8 (Klíma et al. 1962, 27) Pencil sketch with labelled layers.

Page 80: Sketch of a section in the caves. Unfinished basis for Fig. 11 (Klíma et al. 1962, 31). Pencil drawing.

Fig. 11. Entrance and foreground of Švédův stůl Cave after partial excavation of sediments. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 11. *Vchod a předpolí jeskyně Švédův stůl po částečném vyklizení sedimentů. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

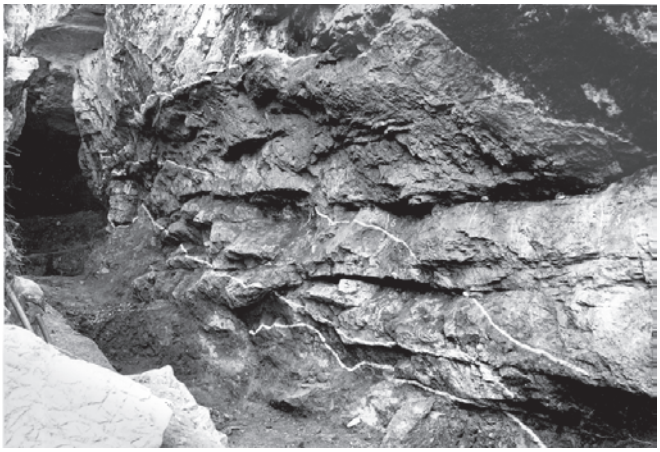

Fig. 13. Enlarged photo of the western wall in front of Švédův stůl Cave, showing the individual layers and a measuring pole. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 13. *Zvětšená fotografie západní stěny před jeskyní Švédův stůl se zakreslením průběhu jednotlivých vrstev a metrů. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

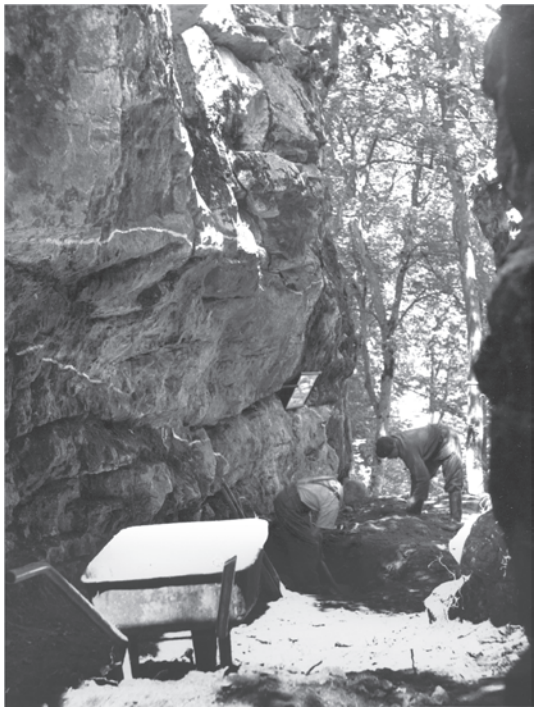

Fig. 12. A photo of the platform in front of Švédův stůl Cave taken from the cave entrance, with wheelbarrow and two workers. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 12. *Fotografie plošiny před jeskyní Švédův stůl pořízená od jeskynního vchodu s kolečky a dvěma dělníky. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 14. Photo of the trench in front of Švédův stůl Cave taken from the platform above the cave. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 14. *Fotografie sondy před jeskyní Švédův stůl pořízená z plošiny nad jeskyní. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Page 81: Sketch of the stratigraphic column (profile column) in the cave. Pencil drawing with coloured crayon layers. Basis for Fig. 7 (Klíma et al. 1962, 25). Fig. 31 in this article.

Page 82: Schematic drawing of the profile column stratigraphy. Pencil drawing on squared paper.

Page 83: Brief note written in pen on squared paper (Mikulov – 1500 CSK).

Page 84: Sketch of the profile column with notes. Pencil drawing.

Page 85: Excavation diary, handwritten note in pencil dated 10th August 1953. Description of the brown cave soil strata: a) at most top there is a finely layered floated band, b) a dark band from which we collected several flakes, c) a lenticular inset of sharp-angled gravel, d) brown layer with coarse gravel.

Page 86: Redrawing of the profile in front of the cave, with the layers on the western rock face outlined. Basis for Fig. 6 (Klíma et al. 1962, 23).

Fig. 15. A photo of the left part of the entrance to Švédův stůl Cave. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 15. *Fotografie levé části vchodu do jeskyně Švédův stůl. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 16. A photo taken during documentation of excavation at Švédův stůl Cave. Josef Pelíšek in an interview, probably with the technician J. Radda. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 16. *Fotografie průběhu dokumentace výzkumu jeskyně Švédův stůl. Josef Pelíšek v rozhovoru patrně s dokumentátorem J. Raddou. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 17. A portrait photo of pedologist Josef Pelíšek in front of Švédův stůl Cave. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 17. *Portrétní fotografie geologa Josefa Pelíška v prostoru před jeskyní Švédův stůl. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 18. The geologist Karel Zapletal studying the stratigraphic column in Švédův stůl Cave. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 18. *Geolog Karel Zapletal při studiu stratigrafického pilíře v jeskyni Švédův stůl. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Page 87: Same drawing as on page 86, but without labels and hatching.
Page 88: Same drawing as on page 87.
Page 89: Drawing of the layer profile in front of the cave at the western rock wall. Basis for Fig. 6 (Klíma et al. 1962, 23). Sketch drawn in pencil on graph paper, with notes and crayon-coloured layers.
Page 90: Same pen drawing as on page 87, but with individual layers coloured in crayon.
Pages 91–98: Inventory of finds. Czech typescript (see Klíma et al. 1962, 51–59).
Pages 99–100: Letter from V. Nečesaný to B. Klíma concerning species identification of the charcoal pieces from Švédův stůl Cave, with an attempt at interpretation. Layer 14: indeterminate coniferous wood (charcoal sample too small), layer 12: hearth: Pinus silverstris, Abies pectinata, Picea excelsa? (pine, fir, spruce?); layer WII–III (Aurignacian): Pinus silvestris? (pine?). Typescript dated 2nd December 1953 in Bratislava.

Fig. 19. The initial phase of excavation in front of Švédův stůl Cave, with workers from Ochoz u Brna. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 19. *Počáteční fáze výzkumu před jeskyní Švédův stůl s dělníky z Ochoze u Brna. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 21. Illustrative photo of the excavation on the platform in front of Švédův stůl Cave, with workers. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 21. *Ilustrační fotografie výzkumu plošiny před jeskyní Švédův stůl s dělníky. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 20. Enlarged photo from the archaeological commission held on 6th October 1953. H. Machová informs the commission participants about her first field research, which comprised revision excavation of the Magdalenian site in front of Ochoz Cave. This excavation took place at the same time as that at Švédův stůl Cave. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 20. *Zvětšená fotografie z archeologické komise konané dne 6. října 1953. H. Machová informuje účastníky komise o svém prvním terénním výzkumu, kterým byl revizní výzkum magdalénské stanice před Ochozskou jeskyní. Tento výzkum se konal současně s výzkumem jeskyně Švédův stůl. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 22. Discussion in front of Švédův stůl Cave (J. Poulík, J. Böhm, K. Zapletal). Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 22. *Diskuze před jeskyní Švédův stůl (J. Poulík, J. Böhm, K. Zapletal). Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

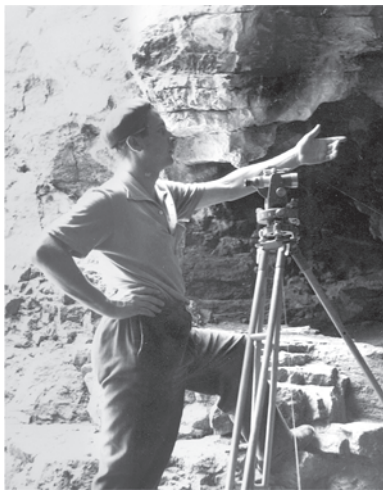

Fig. 23. Photo of B. Klíma at the levelling device in front of Švédův stůl Cave. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 23. *Fotografie B. Klímy u nivelačního přístroje před jeskyní Švédův stůl. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 26. A view of the western wall in front of Švédův stůl Cave, with markings indicating the individual layers, a measuring pole and workers. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 26. *Pohled na západní stěnu před jeskyní Švédův stůl s vyznačením průběhu jednotlivých vrstev a metrů s dělníky. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 24. A view of the excavation in front of Švédův stůl Cave from inside the cave (from left to right K. Hrazdíra, V. Gebauer, J. Poulík and other workers). Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 24. *Pohled na výzkum prostranství před jeskyní Švédův stůl z vnitřní části jeskyně (zleva doprava K. Hrazdíra, V. Gebauer, J. Poulík a další pracovníci). Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

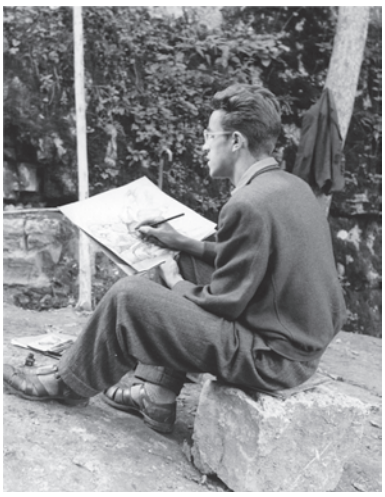

Fig. 27. The painter J. Jaša drawing the entrance to Švédův stůl Cave. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 27. *Malíř J. Jaša kreslí vchod do jeskyně Švédův stůl. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

Fig. 25. Illustrative photo of excavation on the platform in front of Švédův stůl Cave, with workers. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 25. *Ilustrační fotografie výzkumu plošiny před jeskyní Švédův stůl s dělníky. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Zdroj: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

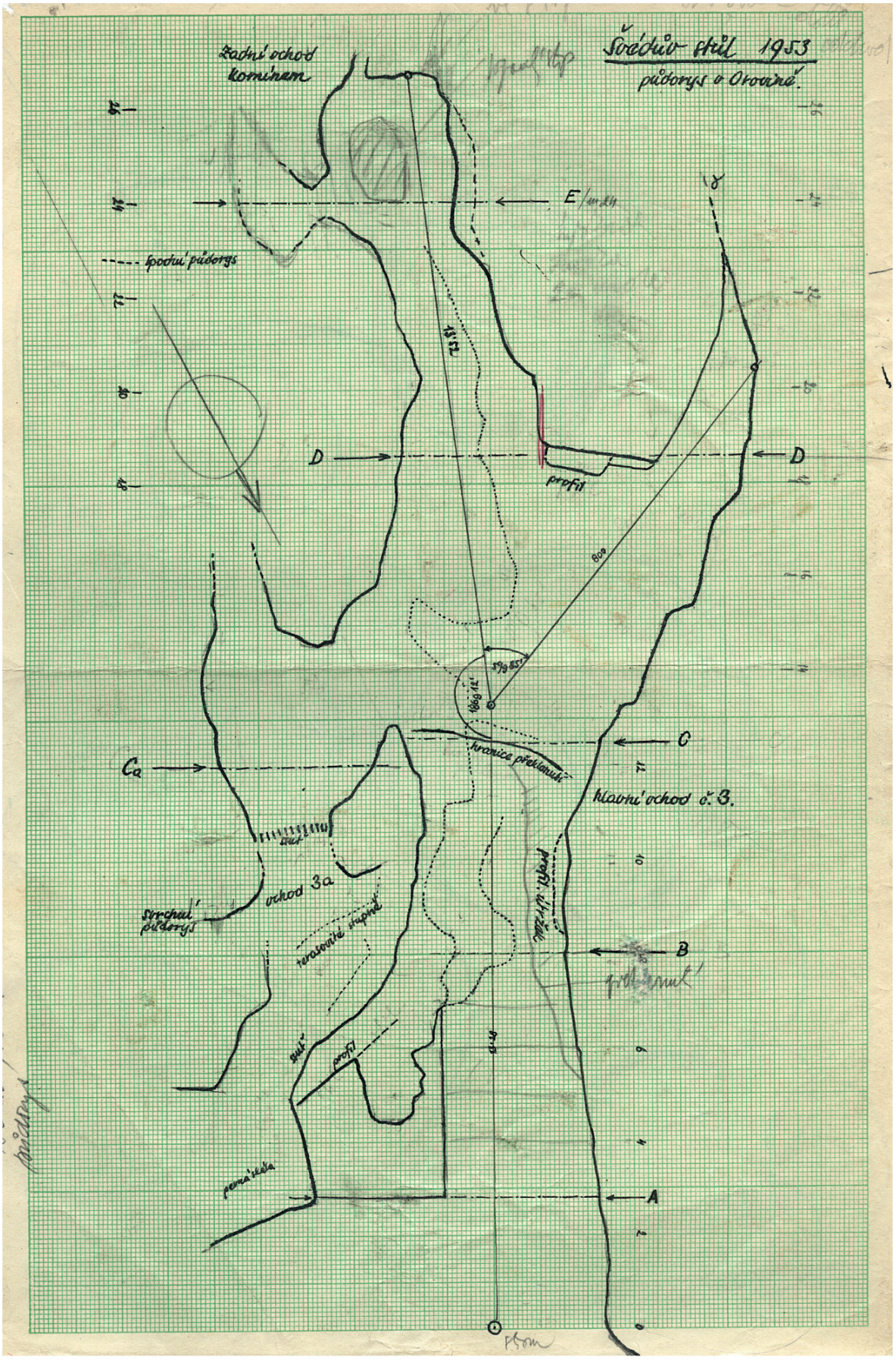

Fig. 28. Sketch of the Švédův stůl Cave ground plan, with a measuring pole plotted on the platform in front of the cave. Manuscript drawn in pencil and pen on graph paper. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 28. *Skica půdorysu jeskyně Švédův stůl se zákresem metráže na plošině před jeskyní. Rukopis kreslený tužkou a perem na milimetrovém papíře. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

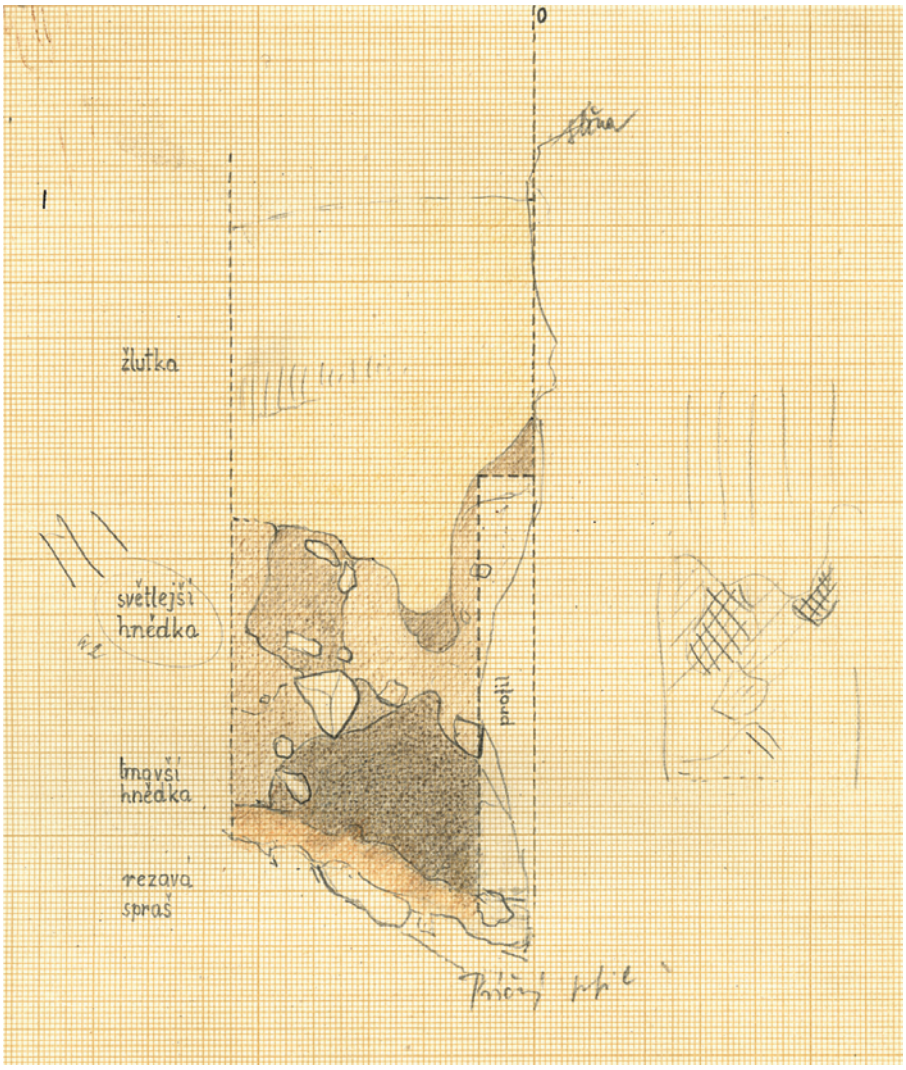

Fig. 29. Sketch of the sediment profile in the trench near the western rock wall, between metres 9 and 10, in the area in front of Švédův stůl Cave. Pencil drawing on graph paper with coloured crayon layers. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 29. *Skica profilu sedimenty na prostranství před jeskyní Švédův stůl v sondě při západní skalní stěně mezi 9. a 10. metrem. Kresba tužkou na milimetrovém papíře s vrstvami vybarvenými pastelkami. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

6. Inserting the newly excavated trenches from 2019 into Klíma's chronostratigraphy

Having gained access to B. Klíma's documentation, one of the aims of this article was to locate precisely the trench opened during field research under the guidance of B. Klíma in 1953 (Klíma et al. 1962, 23, Fig. 6) and relate this to the trenches newly excavated during the research of L. Nejman's team in 2019 (Nejman et al. 2020, Fig. 32). On 4th March 2021, we visited Švédův stůl Cave to re-excavate the 0.5 × 0.5 m trench TP1 excavated in 2019 as part of the research undertaken by L. Nejman's team (Nejman et al. 2020, 13, Fig. 4). We then documented the sediment stratigraphy in the trench, recorded its location and additionally took one more OSL sample there. The edge of trench TP1 closest to the cave is located close to the point where the metal stamp with the number of the cave is placed on the western rock wall. We compared this with Klíma's photo of the western rock wall bounding the platform in front of the cave, which shows the individual layers against a measuring pole (Fig. 9) and which corresponds with a cross-sectional drawing of the layers in front of the cave (Klíma et al. 1962, 23, Fig. 6). The individual rock edges and protrusions visible in the photo could be identified in the field, and thus we were able to determine the boundaries marked out during the Klíma's excavation. Using a tape measure, we then measured the level of Klíma's Point 12, where, according to the Klíma's plan, sediments undisturbed by previous excavations started, which was situated about 140 cm from the edge of trench TP1 (and thus from the metal marker with the cave number) towards the cave. On this basis it was possible to prepare a plan showing the location of the individual test-pits excavated in the frame of the 2019 field research by L. Nejman's team (Fig. 32) in relation to the trench excavated in 1953 during the research undertaken by B. Klíma's team. Klíma's point 12 was approximately located at the level of the furthest point of the cave portal. Our measurements were also compared with the cave plan from Klíma's documentation, which showed the line of the cave walls and the measuring pole for the trench on the platform in front of the cave (Fig. 28), thus verifying its accuracy.

Next, we levelled the current surface of the platform in front of the cave, along with the surface of individual layers drawn on the rock wall and shown in the photo from B. Klíma's documentation. The resulting drawing of layer stratigraphy in front of the cave was compared with a similar drawing by B. Klíma (Fig. 33). The two drawings differ in the slope of the terrain in front of the cave, with Klíma's drawing being much steeper than our measurements. Why this is so, and whether it is possible that this is a measurement error, remains unclear. What is certain is that B. Klíma systematically levelled the surface of individual layers and even had his photo taken doing so (Fig. 23). For this reason, we again visited the site on 30th December 2022 and remeasured our original data. However, we came to the same conclusions, thus ruling out any error on our part. The discrepancy between Klíma's drawing and the actual situation remains a mystery to us.

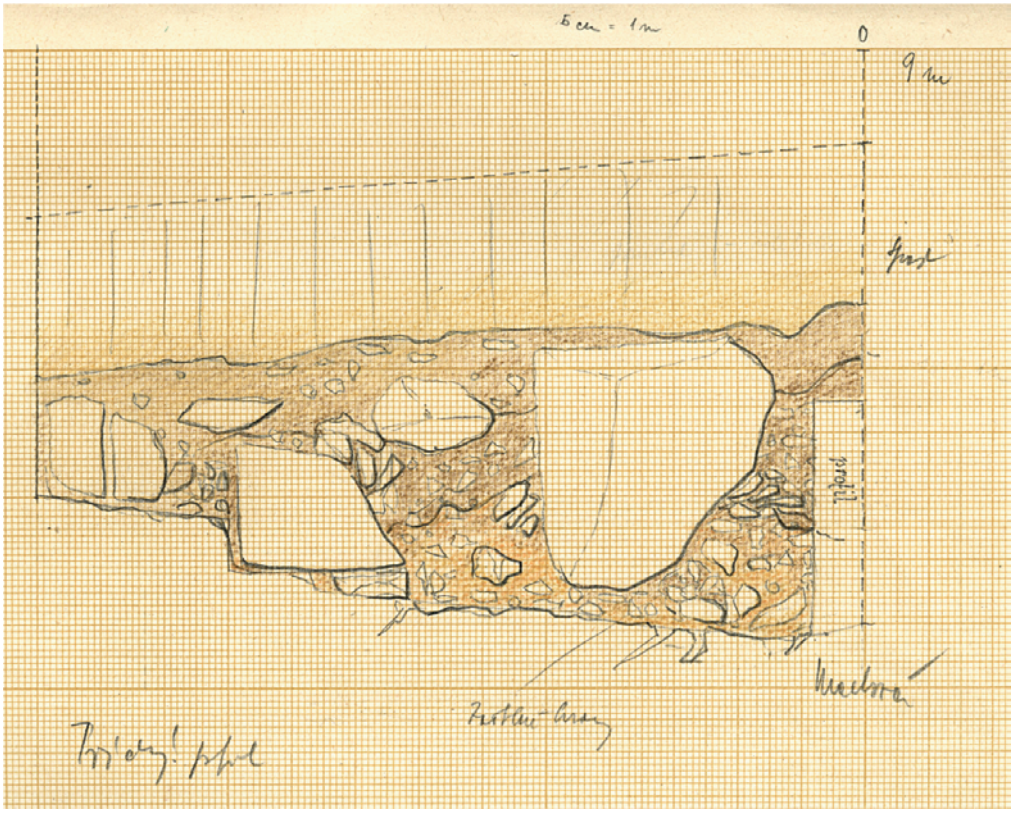

Fig. 30. Sketch of the sediment profile in the area in front of Švédův stůl Cave at metre 9. Pencil drawing on graph paper with coloured crayon layers. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 30. *Skica profilu sedimenty na prostranství před jeskyní Švédův stůl u 9. metru. Kresba tužkou na milimetrovém papíře s vrstvami vybarvenými pastelkami. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

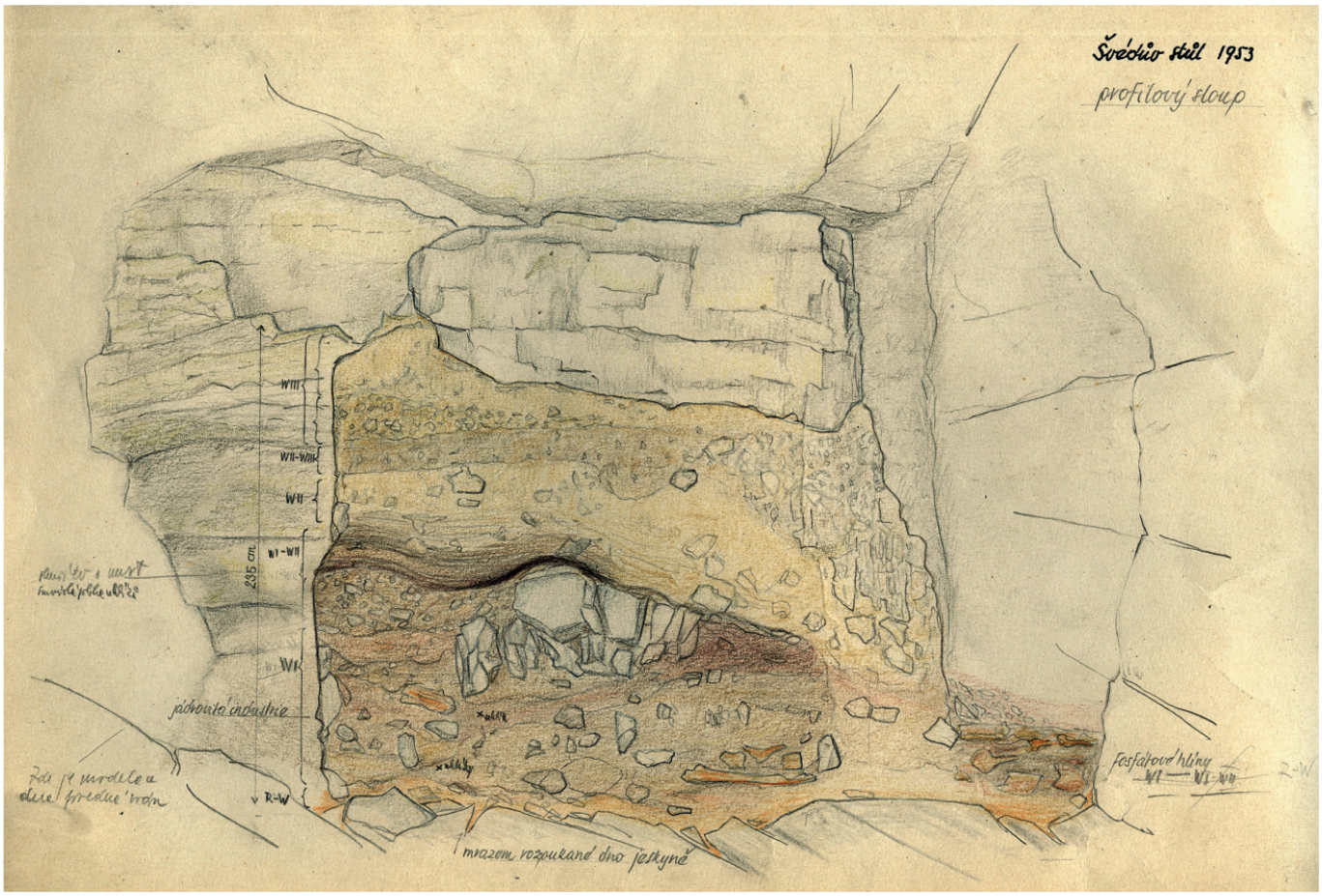

Fig. 31. Sketch of the stratigraphic pillar (profile column) in Švédův stůl Cave. Pencil drawing with coloured crayon layers. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047).

Obr. 31. *Skica stratigrafického pilíře (profilového sloupu) v jeskyni Švédův stůl. Kresba tužkou s vrstvami vybarvenými pastelkami. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047).*

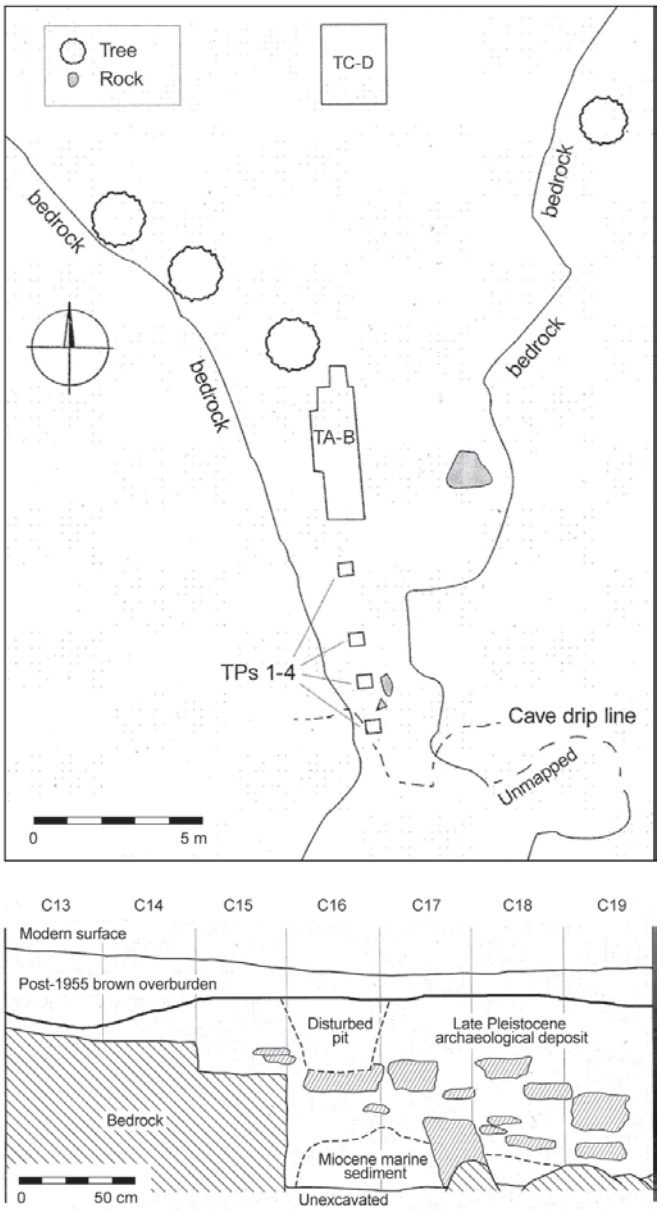

Fig. 32. A plan of the area in front of Švédův stůl Cave, with drawings of the trenches excavated as part of the research in 2019 (top) and the stratigraphy found in the TA–B trench (bottom). After Nejman et al. 2020, 13, 15.

Obr. 32. *Plán předpolí jeskyně Švédův stůl se zakreslením sond vyhloubených v rámci výzkumu v roce 2019 (nahoře) a zakreslení stratigrafie zjištěné v sondě TA–B (dole). Podle Nejman et al. 2020, 13, 15.*

It is clear from the data obtained that the rock floor was not reached over the entire area in front of the cave during Klíma's excavation, as depicted in the stratigraphic diagram (Klíma et al. 1962, Fig. 6), a fact also reported by J. Vaňura in correspondence with L. Seitl in 1999. Perhaps due to the rugged morphology of the entrance, not all sediments were excavated at that point; while in the case of the basal sediments, only the surface would have been excavated, the sediments being left in place rather than exported to the spoil heap in front of the cave. Furthermore, it is likely that the sediments uncovered by L. Nejman's team mainly represent Klíma's layer 15. The situation is different for trench TA–B, which is located on the platform in front of the cave furthest from the entrance (Nejman et al. 2020, Fig. 4). According to the comparative documentation, it is clear that this part was not excavated during Klíma's excavation, probably as Klíma did not anticipate the occurrence of sediments with archaeological finds here due to the thinning of the layers in previous metres. According to Klíma's documentation, it is likely that layer 15 ochre clay sediments, and possibly also brown clay complex sediments of layers 11–13, could have been recorded in the approximately 1 m deep depression uncovered in the TA–B trench by the 2019 excavation. During excavations, Miocene sands were discovered at the base of the depression, overlain by yellow-red and red-yellow sediments (Nejman et al. 2020). It is possible that the disproportions between colours are simply a methodological issue caused by the absence of the Munsel comparison scale at the time of Klíma's excavation. In any case, neither B. Klíma nor previous researchers noted the presence of Miocene sands, though D. Hypr (1975) and J. Kadlec (2001) did not exclude it at this level. The interpretation of formation processes and the informational potential of the intact fill exposed in the TA–B trench depression on the platform in front of the cave is the subject of current research.

7. Conclusion

By studying published and unpublished documents available, it was possible to present a relatively detailed overview of research activities that have taken place at the Švédův stůl Cave site over the last 130 years, i.e. from 1892 to 2022. It was also possible to describe the stratigraphy inside the cave and on the plateau in front of the cave in detail as well as the archaeological finds originating from the site, allowing us to unravel the relatively complex history of research on the so-called Ochoz mandible and other Neanderthal skeletal remains, and to write a summary of the osteological finds over the course of different research field studies.

As mentioned in the introduction, the larger part of the new information come from previously unpublished documents in Klíma's private archive, i.e. field and photographic documentation from the 1950s (mainly from 1953, when research on the platform in front of the cave was carried out). Thanks to this documentation, we can link Klíma's chronostratigraphy very precisely with finds from 2019. From the data obtained, it is clear that not all sediments were explored during Klíma's excavation, as originally assumed, probably due to the rugged morphology of the cave floor and a certain omission of the researchers at the time. In any case, it is evident that part of the intact sediments, approximately 60–120 cm thick, was (and still is) preserved on the platform in front of the cave (Fig. 33). In the future, these sediments can be subjected to interdisciplinary investigations using modern research methods.

Acknowledgements

We would like to thank Bohuslav Klíma Jr. for providing access to the file containing documentation of the excavation undertaken at Švédův stůl Cave in between 1953 and 1955 and for his help in identifying the people depicted in the photographs.

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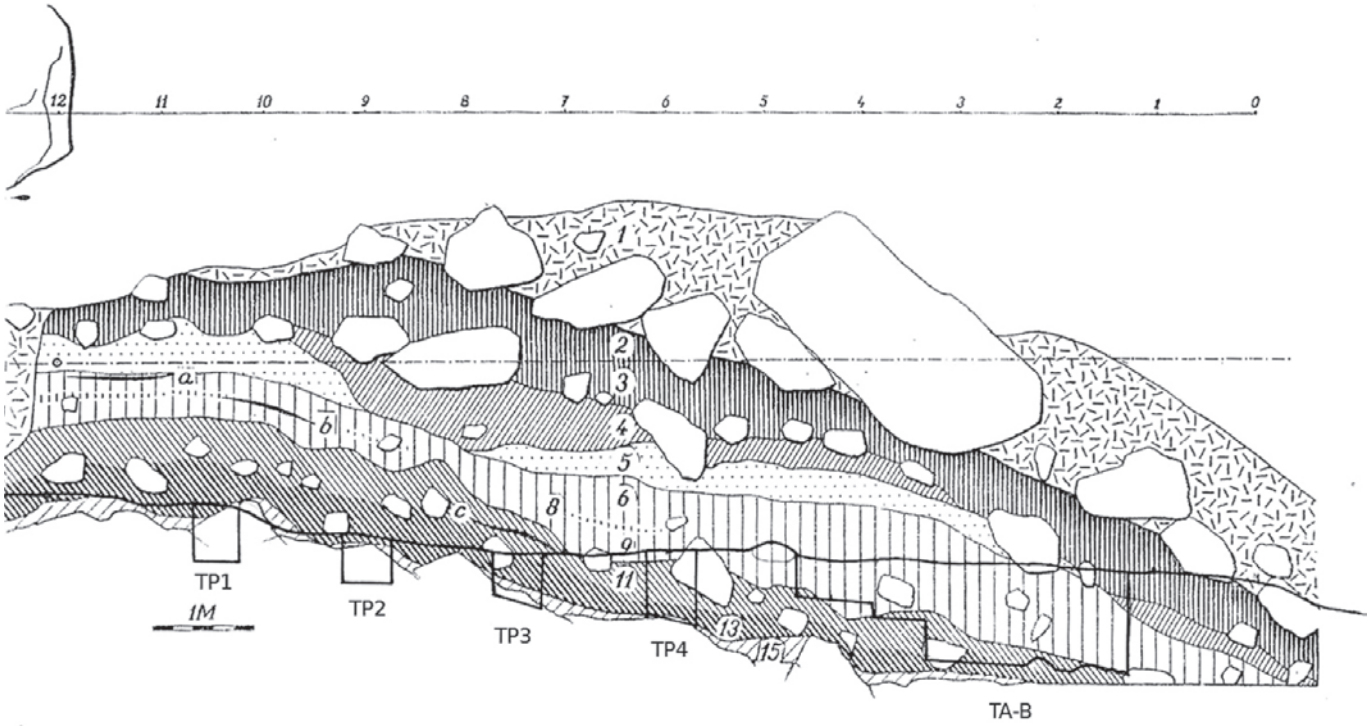

Fig. 33. Plan of Švédův stůl Cave, with the location of individual test-pits and a trench excavated during the excavation of L. Nejman's team in 2019 in relation to the trench excavated in 1953 during excavation by B. Klíma's team. Stored in: Private archive of B. Klíma. Copy in the ARÚB archive (personal archive P047). Adjusted by O. Mlejnek.

Obr. 33. *Plán jeskyně Švédův stůl s lokalizací polohy jednotlivých sond vyhloubených při výzkumu týmu L. Nejmana v roce 2019 v rámci sondy vyhloubené v roce 1953 při výzkumu týmu B. Klímy. Uloženo v: Dokumentace výzkumu jeskyně Švédův stůl. Soukromý archiv B. Klímy. Kopie v Archivu ARÚB (osobní fond P047). Upravil O. Mlejnek.*

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Resumé

Článek přináší přehled historie archeologických, geologických, antropologických a paleontologických výzkumů v jeskyni Švédův stůl (k. ú. Ochoz u Brna) v jižní části Moravského krasu. Většina těchto výzkumů, které zde probíhaly od konce 19. století do současnosti, byla již v minulosti v odborné literatuře popsána, nikdy k tomu však nedošlo souhrnným způsobem pro anglicky mluvící publikum. Autoři článku se se podrobně věnují zejména výzkumu Bohuslava Klímy v letech 1953–1955 (Klíma et al. 1962) a také nálezu spodní čelisti neandrtálce studentem Karlem Kubaskem v roce 1905 a okolnostem, za kterých se tento nález dostal do sbírek Moravského zemského muzea v Brně (Rzehak 1906; Oliva 2017). Vůbec poprvé dochází k publikování některých fotografií z archivu Bohuslava Klímy, které dokumentují jeho výzkum této jeskyně v padesátých letech. Dokumentace z archivu B. Klímy byla také dále využita k umístění nových sond vyhloubených před jeskyní v roce 2019 mezinárodním výzkumným týmem (Nejman et al. 2020) do prostorového rámce Klímova výzkumu.

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