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Report on the latest excavation campaigns at *Grotte de la Faucille*, Sclayn (BE) New radiocarbon dates for a better understanding of burial practice during the Final Neolithic

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1. Background

The Final Neolithic collective burial of the cave, *Grotte de la Faucille*, is located in Sclayn, Andenne, province of Namur, Belgium (Fig. 1). It was discovered May 11, 1999. In August of the same year, an initial assessment of surface deposits led to the discovery of human and animal bones. Radiocarbon dating suggested an age of 4266 ± 40 BP (OxA-10584; 2 sigma: 3011-2702 cal BC; Toussaint, 2002) placing it neatly in the Final Neolithic.

While Neolithic skeletal remains are known from megalithic monuments, the mining site of Spiennes and several other open-air sites in Belgium (e.g. Darion, Hollogne-aux-Pierres, Avennes, Thieusies; Toussaint, 2007 and references therein), the vast majority of the osteological evidence for this time period originates from the karstic contexts of the Meuse valley and its tributaries. The caves and rockshelters protected the human remains and resulted in the preservation of hundreds of individuals, in approximately 220 caves (Cauwe, 2004; Polet, 2011; Toussaint *et al.*, 2019; Toussaint *et al.*, 2001; Toussaint & Pirson, 2007; Toussaint *et al.*, 2020). The dating evidence available for this phenomenon demonstrates

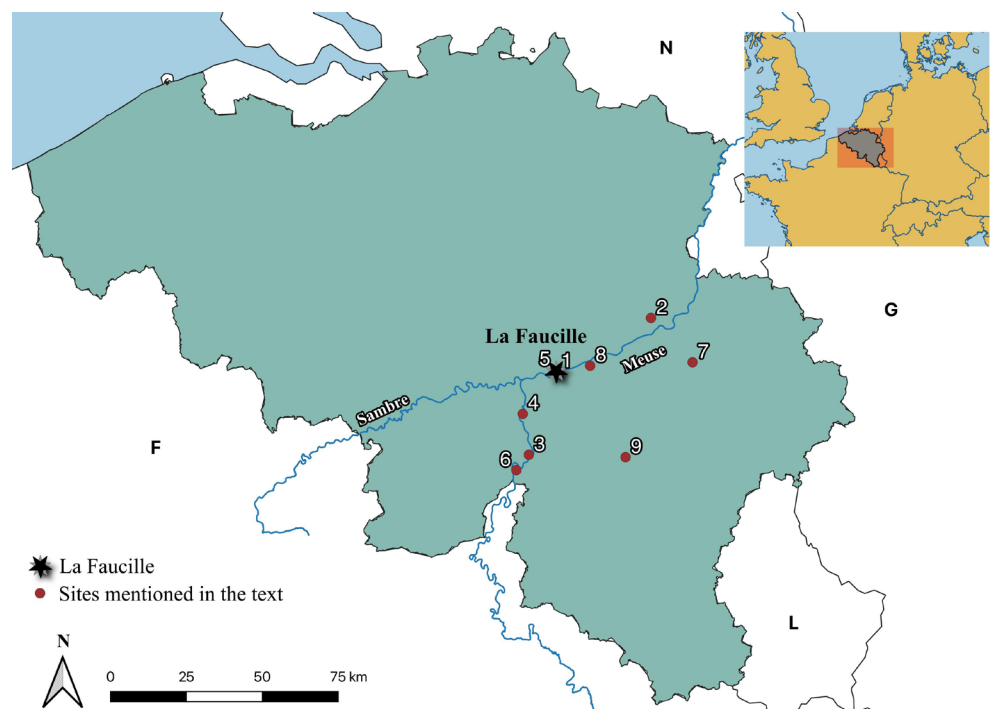


Fig. 1 – Location of *La Faucille* cave and sites mentioned in the text. 1. *La Faucille*; 2. Sclaigneaux; 3. Ossuaire du Fémur & Grand Abri; 4. Trou de la Heid; 5. La Préalle II; 6. Bois Madame; 7. Trou des Nots; 8. Abri des Autours; 9. La Cave Maurenne; 10. Martouzin & Trou du Renard.

that the use of these caves/rockshelters as burial sites starts in the Middle Neolithic (with the oldest dates situated at the end of the 5th millennium cal BC) and ends in the Final Neolithic (at the end of the 3rd millennium cal BC) (Cauwe, 2004; Toussaint, 2007).

Most of the collective burials were excavated in the 19th and start of the 20th century and lack detailed documentation of the stratigraphy, and the distribution and placement of the skeletal remains is often missing, therefore resulting in a lost opportunity to study the caves for a better understanding of Neolithic funerary practices. In addition, excavations since the 1980s demonstrated that the latter are often extremely difficult to discern because of bioturbations, differentially and poorly preserved skeletal remains and manipulations of the human remains carried out by the Neolithic people themselves (Cauwe, 2004; Polet & Cauwe, 2002; Toussaint, 1987; Toussaint, 2007).

Dating analyses carried out until now, suggest that the caves have been intensively and repeatedly used over long periods of time (Cauwe, 2004; Orban *et al.*, 2000; Polet & Cauwe, 2002; Bronk Ramsey, 2009; Toussaint, 2007). There is evidence that the dead were brought to the caves and previously interred individuals disturbed and/or intentionally moved (Polet, 2011). For these collective burials, the remains are most often heavily commingled and fragmented and the skeletons often incomplete. Studies have revealed that these communal or multiple burials tend to exist of five to 15 individuals of both sexes and comprise adults, adolescents and children (Cauwe, 2004; Polet, 2011; Toussaint, 2007), although some remarkably large collective burials exist: Bois Madame in Burnot [57 individuals, (Dumbruch, 2003)], Sclaigneaux, near Sclayn [58 individuals (De Paepe and Polet, 2007)], and La Cave in Maurenne [56 individuals, (Vanderveken, 1997)].

The cave of *La Faucille* offers a rare opportunity to excavate a Neolithic collective burial with the aim of improving our understanding of burial practices and to record these in a systematic manner using the latest developments in terrain archaeology. The main goals of this contribution are to report on the progress made and the insights developed during the 2021 and 2022 campaigns, as well as to discuss the new dating evidence for the site and how it fits in the chronological framework available to date.

2. The excavations

In 2015, the systematic excavation of the site was initiated after its discovery in 1999. This report follows that of 2017 (De Groote *et al.*, 2019) in which the excavations of 1999, 2015, 2016 and 2017 were discussed. The excavations in 2015 and 2016 focused primarily on the terrace. The upper humic layers excavated in those excavations contained small skeletal fragments such as the bones of the hands and feet as well as numerous teeth. The lower levels turned out to be virtually sterile. What was noticed however is that the entrance to the cave becomes extremely narrow. So, in 2017 the objective was to excavate the porch of the cave. This excavation led to the discovery of many more human bones and at the end of the season we closed the site with several long bones in situ (De Groote *et al.*, 2019).

The excavations were restarted spring 2021 and continued in spring 2022 and those two field-seasons are discussed here. The excavation in 2021 had three main objectives. The first objective was to assess whether the site continued inside the cave or whether the material that was found on the terrace and in the porch was deposited there from the plateau above. The second objective was to verify, if the site continues, whether we would continue to find both human skeletal but also cultural remains. The third objective was to see if any human remains continued, if there was any indication that a part of the site was not disturbed by post-depositional processes such as those that we observed on the terrace and on the porch. In 2022, the main objective was discovering articulated skeletal material, attain the base of the burial deposit and discern, if possible, any particular burial practices. Throughout both seasons our aim was to establish both a longitudinal and transverse profile inside the cave.

Three weeks were spent in the field in April 2021. The width of the site is ~65 cm so only 1 person is able to excavate at any one time but at all times excavation was done

in teams of two consisting of an anthropologist and an archaeologist. Roughly 1/3 of a cubic metre of sediment was removed from the cave during the 2021 field season. The site does indeed continue inside the cave and that there is a high density of material inside. Therefore, it can be concluded that the material did not accumulate from the terrace but that indeed the cave was used by the Neolithic people as a burial place.

Throughout the season we observed that the bones being excavated were larger and more complete than what was observed during the previous excavations in the porch and on the terrace. The sediment appeared more intact but multiple recent burrows complicated the excavation. Charcoal samples were collected for analysis (see below).

Near the end of the 2021 season, on the edge of the longitudinal profile an articulated left arm was discovered in the site (Fig. 2). This observation, as well as the presence of long bones throughout the lower levels indicated that the site did continue inside the cave and that the lower levels may be intact. However, large parts of the site were heavily disturbed by burrowing activity and the skeletal and archaeological material had undergone extensive movement. Therefore, it was decided to revise the excavation strategy.

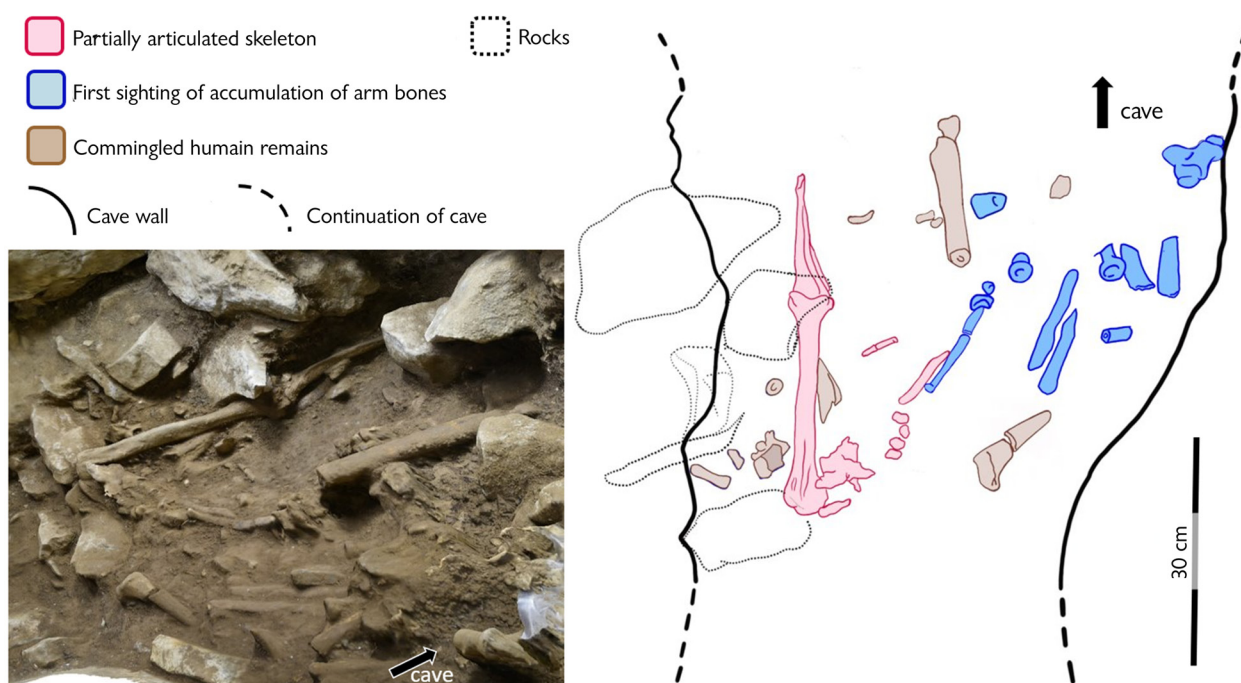


Fig. 2 – Three-dimensional model and diagram of the site at the end of 2021 season displaying the first articulated left arm (red) and the start of an accumulation of arm bones (blue).

In 2022, the focus was on clarifying the formation of the site and to attain the bottom of the deposits prior to entering further into the cave. Based on the observations made in the 2021 season, in areas where there was clearly reworking of the site due to burrowing activity, a faster excavation strategy was devised which meant not all finds were recorded individually with 3D coordinates, yet all were given an individual finds number. Sediments in these areas were removed in packets of 25 cm in the Y axis of the site, with the width of X determined by the site (roughly 65 cm), and 10 cm in the Z axis. This resulted in the allocation of the mean of 2 coordinates to each of the finds: that of the top and the bottom of the excavated layer, giving the remains an approximate position in the cave. In the other zones where it was not clearly a burrow, material was exposed and each find recorded with 3D coordinates and photogrammetry prior to lifting.

The base of the deposits left in situ at the end of the 2021 season was reached fairly quickly due to the placement of a large bolder covering the width of the excavation area.

In the front and below the level of the large block, the layer was found to be sterile, with the exception of a phalanx, a tooth and a rib fragment. Their position was of particular interest and will be revisited in the dating section below. In the left profile, below the articulated arm found in 2021, another two articulated left arms were found in the profile, suggesting a similar placement of the individuals during their deposit in the cave. On the last day of the 2022 season, an articulated lower leg was found and left in situ as it entered too deep into the transverse profile. This confirms that parts of the site were left undisturbed. Approximately one cubic metre of sediment was removed.

The 2022 season and the dating campaign presented below also gave an insight in the burial practices of the Neolithic people and their impact on the depositional processes in the site. Although much of the site is affected by burrowing activities, certain areas showed particular concentrations of the same type of bone. For example, there was an accumulation of long bones of the arms on one level (Fig. 2), and an accumulation of long bones of the legs lower down. This and other observations will be described below. A total of 271 finds were removed from the site in 2021, and 522 finds were removed from the site in 2022. In total over 1500 finds have been removed from the site between 1999 and 2022.

3. Geology

The presence of burrows throughout the sequence, as well as the narrow character of the site make stratigraphic observations very difficult. The stratigraphic sequence is still under study and will be continued after the 2022 field season when a longer longitudinal profile is in place.

Preliminary field observations suggest that next to the burrows, there are areas of more compact nature that show very high accumulations of finds. The presence of a large block at the base of the archaeological layer, represented the start of what was presumed to be a sterile layer. This sterile layer was observed as sterile below the archaeological layer in the porch of the cave. Nevertheless, as mentioned above, a tooth, phalanx and rib fragment were found in these sediments in the cave. Below this layer, a yellow loess was attained.

4. Site chronology

On top of the date already at our disposition (OxA-10584), 19 new radiocarbon dates were obtained after the 2020 and 2021 excavation campaigns (Tab. 1). The primary goal of this extensive dating program was to gain a better understanding of the chronological 'homogeneity' of the *La Faucille* collective burial. Dating a representative sample of the population attested so far would allow us to verify if (1) the interments occurred at clearly separate periods in time (*i.e.* with longer intervals between the burial events) or (2) if the site could have been employed in a more continuous way and if that was the case, over which timespan it was employed. (3) These collective burials should be perceived as the result of diachronic burial events (*i.e.* a collective grave) or of simultaneous burials of multiple individuals (*cf.* Toussaint, 2007). A secondary goal of the dating program was to provide a reliable framework for the interpretation of the biomolecular archaeological analyses that have been carried out (van Hattum *et al.*, in prep.; van Hattum *et al.*, under review; van Hattum *et al.*, submitted) and that are ongoing, as well as for the typo-chronological interpretation of the archaeological artefacts.

With the above in mind, sample selection was carried out in order to date as many different individuals as possible. *In casu*, 17 right humeri were selected for dating, to which a clavicle and a phalanx were added. The clavicle was part of one of the three above mentioned articulated arms still embedded in the longitudinal profile (the lowest arm), therefore representing the remains of an eighteenth individual. The phalanx, recovered from the nearly sterile basal deposit, was by contrast selected because of the doubts that existed concerning the chronological relationship between the three bones found in this layer and the rest of the skeletal remains at the site.

Number	Sample code	Sample type	Age	SD	Adult/Juvenile	Layer
OXA-10584	-	phalanx	4266	40		?
RICH-32461	Fa-2022-077	humerus	4233	24	juvenile	US2
RICH-30367	Fa-2021-231	humerus	4217	26	adult	US2
RICH-30361	Fa-2017-122	humerus	4216	26	adult	US4
RICH-32460	Fa-2022-394	humerus	4184	24		US2
RICH-32464	Fa-2022-454	humerus	4158	24	juvenile	US2
RICH-32369	Fa-2022-385	clavicle	4149	25		US2
RICH-32458	Fa-2022-058	humerus	4139	24		US9
RICH-30368	Fa-2021-252	humerus	4125	25	adult	US2
RICH-30358	Fa-1999-53	humerus	4116	26	subadult	?
RICH-30359	Fa-1999-59	humerus	4108	26	juvenile	?
RICH-30360	Fa-1999-62	humerus	4102	26	juvenile	?
RICH-32459	Fa-2022-286	phalanx	4054	23		sterile layer at bottom profile
RICH-30357	Fa-1999-10	humerus	4052	26	adult	?
RICH-32462	Fa-2022-403	humerus	4049	24		US2
RICH-30362	Fa-2017-187	humerus	4043	26	juvenile	C1 (top layer)
RICH-30363	Fa-2017-256	humerus	4040	27	adult	US4
RICH-30364	Fa-2017-272	humerus	4007	25	juvenile	US4
RICH-30366	Fa-2021-223	humerus	4004	30	adult	animal burrow
RICH-30365	Fa-2017-373	humerus	3972	28	juvenile	animal burrow

Tab. 1 – List of radiocarbon dates available for the *La Fauille* collective burials.

The dating results turned out to be highly informative for our understanding of the formation of the *La Fauille* collective burials. The dates seem to represent a coherent suite of events without apparent gaps, that is largely situated in the first half of the 3rd millennium cal BC. Dates with a secure stratigraphic position (e.g. samples from the 2021/2022 campaigns), however, reveal clear inconsistencies in their vertical distribution at the site. The phalanx from the lowermost level (RICH-32459), for example, is situated somewhere in the middle of the chronological range covered by the dates. The samples from the upper (US4) and lower half (US2) of the bone-bearing layers, also absolutely do not constitute a logical sequence. Even internally, within these layers, the dates are incongruent. Combining the dates from US2, for example, using the Combine function in Oxcal 4.4, results in a poor agreement [$X^2(6) = 26.308$ (5 % 12.592) and $A_{comb} = 3.1$ % ($A_n = 26.7$ %)], confirms this. Similarly combining the three dates from the above-lying layer US4 (RICH-30361; RICH-30363 and RICH-30364) fails [$X^2(2) = 26.664$ (5 % 6.0) and $A_{comb} = 0.3$ % ($A_n = 40.8$ %)]. The inconsistencies between these dates clearly indicate post-depositional disturbance of the burials, either intentionally (clearing older burials for making space for new interments) or accidentally (trampling, animal activity, erosion...).

Based on the above, an analysis of the dates through Bayesian modelling was done in Oxcal 4.4 (Bronk Ramsey, 2009). Because of the lack of a reliable stratigraphical framework, it was decided to build a single phase-Bayesian model without prior information in order to define the start and end date of the site (Fig. 3). According to the model¹ (Agreement index of 84) the oldest burials date between 2962 and 2773 cal BC (95.4 %), mean start date 2865 cal BC, while the youngest ones range from 2552 to 2423 cal BC (95.4 %), mean end date 2485 cal BC. The Span function in Oxcal 4.4 (Bronk Ramsey, 2009) was used to estimate the duration of the activities at the site, which places it in a period lasting between 239 and

¹ Although the model reaches a good agreement index (A_{mod} 84 %), individually, the oldest date in the sequence (OxA-10584) has a poor agreement (59.0 %). However, a Combine between this date and the second to oldest date (RICH-32461) proves that they are statistically speaking contemporaneous [$X^2(1) = 0.268$ (5 % 3.841) and $A_{comb} = 155.1$ % ($A_n = 50.0$ %)]. There is by consequence no reason to consider this date as an outlier and/or to exclude it from the model.

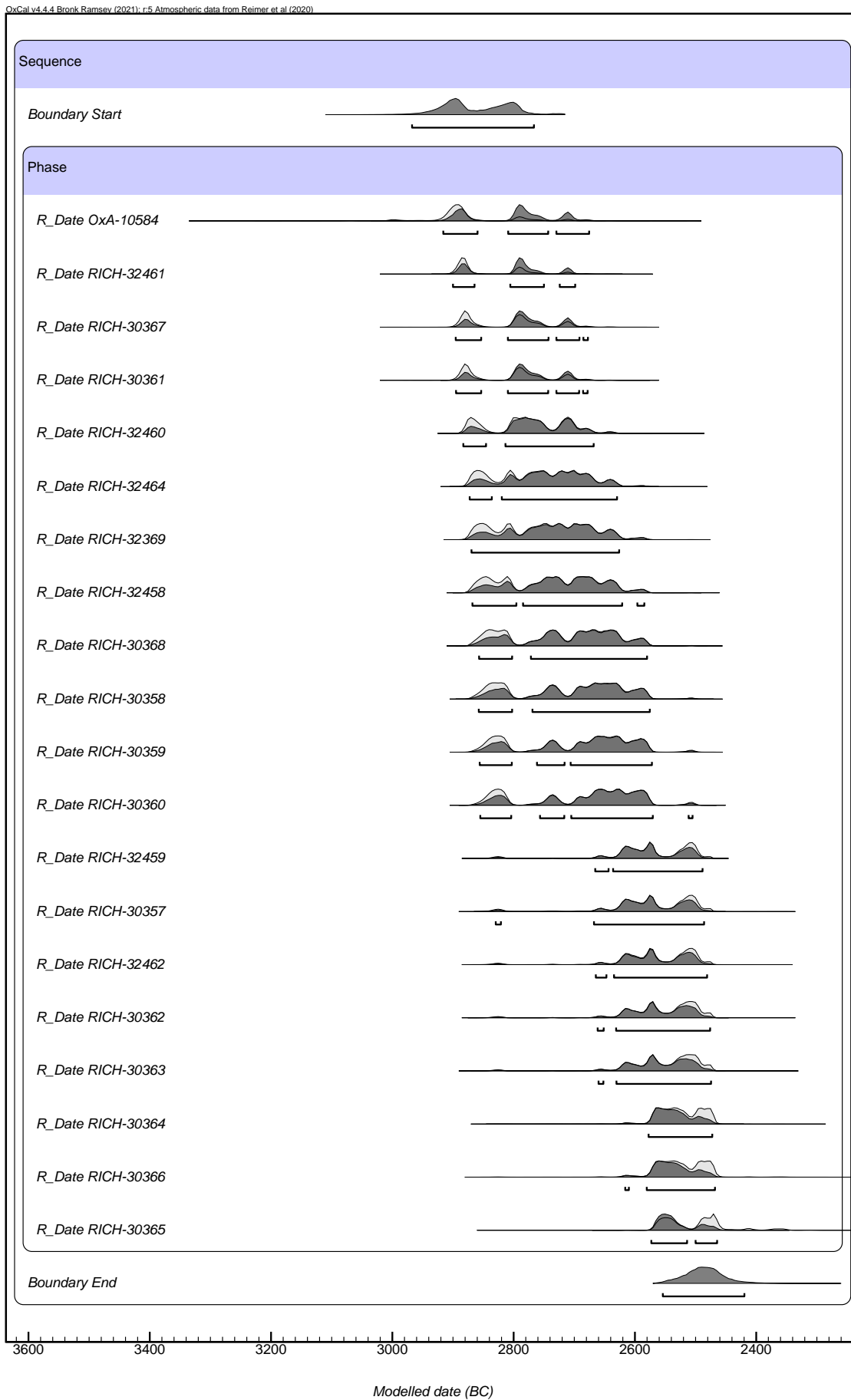


Fig. 3 – Single phase Bayesian model of the radiocarbon dates.

432 years (95.4 %), with a mean of 343 years (Fig. 2). Hence, the dates of *La Faucille* are indeed surprisingly homogeneous. The results suggest that the burial events took place within relatively short timespans from each other (1 or 2 generations) and within a period of maximum 432 years. In addition, the use of the funerary site seems completely situated in the first half of the 3rd millennium, corresponding to the first part of the Final Neolithic.

5. Archaeology

During the previous excavations, a relatively small assemblage of archaeological artefacts was found in association with the skeletal remains. They consisted of lithic artefacts ($n = 6$), two pottery fragments and a set of bone (and/or antler) tools and ornaments. The lithics were all altered by a white patina and were more specifically comprised of a tanged arrowhead, a large flake fragment displaying an intense gloss on one of its edges and four wide but thin flakes (axe preform trimming flakes?). The bone artefacts were made up of a bone needle, a pierced canine (species to be determined) and two other bone/antler objects of which the function remains to be identified (De Groote *et al.*, 2019).

The 2021 and 2022 campaigns yielded three additional artefacts, found amidst the human remains. Two of these are again tanged arrowheads: a flint arrowhead and a remarkable second arrowhead made out of a yet unidentified (organic or mineral?) raw material. It is for the moment also unclear how this arrowhead was shaped. Its surface appears to have been shaped by a combination of ‘chipping’ and a type of polishing/smoothing. A considerable part of the surface on each side of the artefact is unfortunately damaged, though, hindering a more detailed technological assessment for the time being. Although the dimensions and typology of this arrowhead ($30 \times 14,5 \times 3$ mm) resemble that of the first one found in 1999 ($33 \times 15 \times 6$ mm, see also Fig. 4), it is thinner and lighter than its flint counterparts. The tips of the flint arrowheads moreover appear to show impact-related damage. Whether this third arrowhead is best characterized as a functional or as an ornamental item, however, needs to be further assessed.

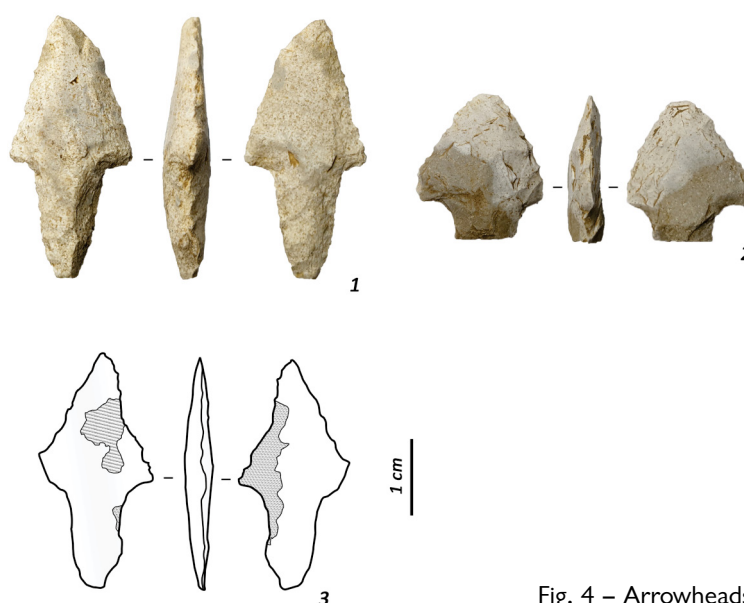


Fig. 4 – Arrowheads recovered at *La Faucille* (1. 1999; 2. 2021; 3. 2022).

The third artefact is a small potsherd (3 by 3 cm) with a variable thickness of 7 to 10 mm. It is a wall fragment without any decoration. Despite its small size, the fragment provides quite a lot of technological information. The vessel was made from a silty clay and was heavily tempered with grit, most likely burned and crushed flint. The quadrangular fracture of the potsherd is indicative for the use of the coiling technique. Based on the observation of “C” configurations in the internal clay structure of the potsherd, visible in radial section, the vessel body was probably formed by the superposition of clay coils which were not or only slightly deformed when being laid down (*cf.* Gomart *et al.*, 2017; Livingstone Smith, 2001; van Doosselaere, 2014). The outer vessel surface was burnished. The dark grey core and inner surface, and grey-brown outer surface, indicate an almost completely reduced firing of the vessel.

Finally, apart from these three artefacts, we also need to mention the discovery of a modified/worked human tooth during the 2022 campaign. Although microwear analyses of the totality of the archaeological artefacts are planned in the future, this tooth was already subjected to a more detailed study.



Fig. 5 – Human tooth showing traces of being worked with a lithic tool.

5.1. A modified human canine

A human canine with a worked root was found amongst the 229 teeth recovered from *Grotte de la Faucille* (Fig. 5). The tooth is a relatively large deciduous upper canine, with a closed apex (root tip) and moderate dentine exposure. The root of the canine was modified into an angular shape, probably with the use of a stone tool (Fig. 6:a).

An Olympus BM53X reflected light microscope with magnifications ranging from 50 to 500 x and a Zeiss AxioZoom V16 macroscope with magnifications between 1-112 x were used to identify and record wear. There is faceting on the anterior (labial) and lateral (distal) side of the root (Fig. 6:a), starting from the direction of the cemento-enamel junction (CEJ) to the tip of the root. There are also large longitudinal striae on the area closer to the crown.

There are some microwear traces on and next to the faceted side of the root, and on its tip (Fig. 6:b, 6:c & 6:d). These traces include rounding, some smooth polish, with mixed directionality. On the side of the root this trace is parallel longitudinally (Fig. 6:b) and on the tip it is more transversally oriented (Fig. 6:d). These traces are probably not connected to its use.

The faceting was probably done with the use of stone tools. The worked surface of the root seems to be unfinished and the reason for the modification remains unclear. Possible interpretations include unfinished preparations for a pendant, a piercing tool intended for limited use or placement in some kind of organic holder (e.g. a leather belt or clothing). However, to date, we have not located a reference in the archaeological record for such a worked human tooth.

6. Discussion

When added to the finds from the previous campaigns: all of this fits well with the overall date of the context into the Final Neolithic and with what we know of the other Neolithic collective burials from the Meuse Valley. The type of tanged arrowheads found at *La Faucille* are among the most commonly found lithic artefacts in these contexts. Similar arrowheads are, for example, known from Ossuaire du Fémur in Ben-Ahin (Loumaye et al., 1990), La Préalée II, Martouzin and the *Trou du Renard* in Marche-en-Famenne (Toussaint, 2007).

Sets of bone artefacts like the ones documented so far at *La Faucille* are by contrast scarcer in the Late/Final Neolithic collective burials (Toussaint, 2007) and seem to be better represented in Middle Neolithic funerary contexts, i.e. Abri des Autours, Grand abri in Ben-Ahin, the Trou des Nots in Salet and the Trou de la Heid in Comblain-au-Pont (see Goffette et al., 2017 and references therein). The latter also regularly contain bone needles and pierced animal canines. The dates of *La Faucille*, however, clearly demonstrate that this type of worked bone assemblages are not restricted to the Middle Neolithic and should therefore not be considered as reliable typochronological markers for this period, as already discussed by M. Toussaint in his regional overview of the Neolithic funerary contexts of the Meuse Bassin (2007: 516).

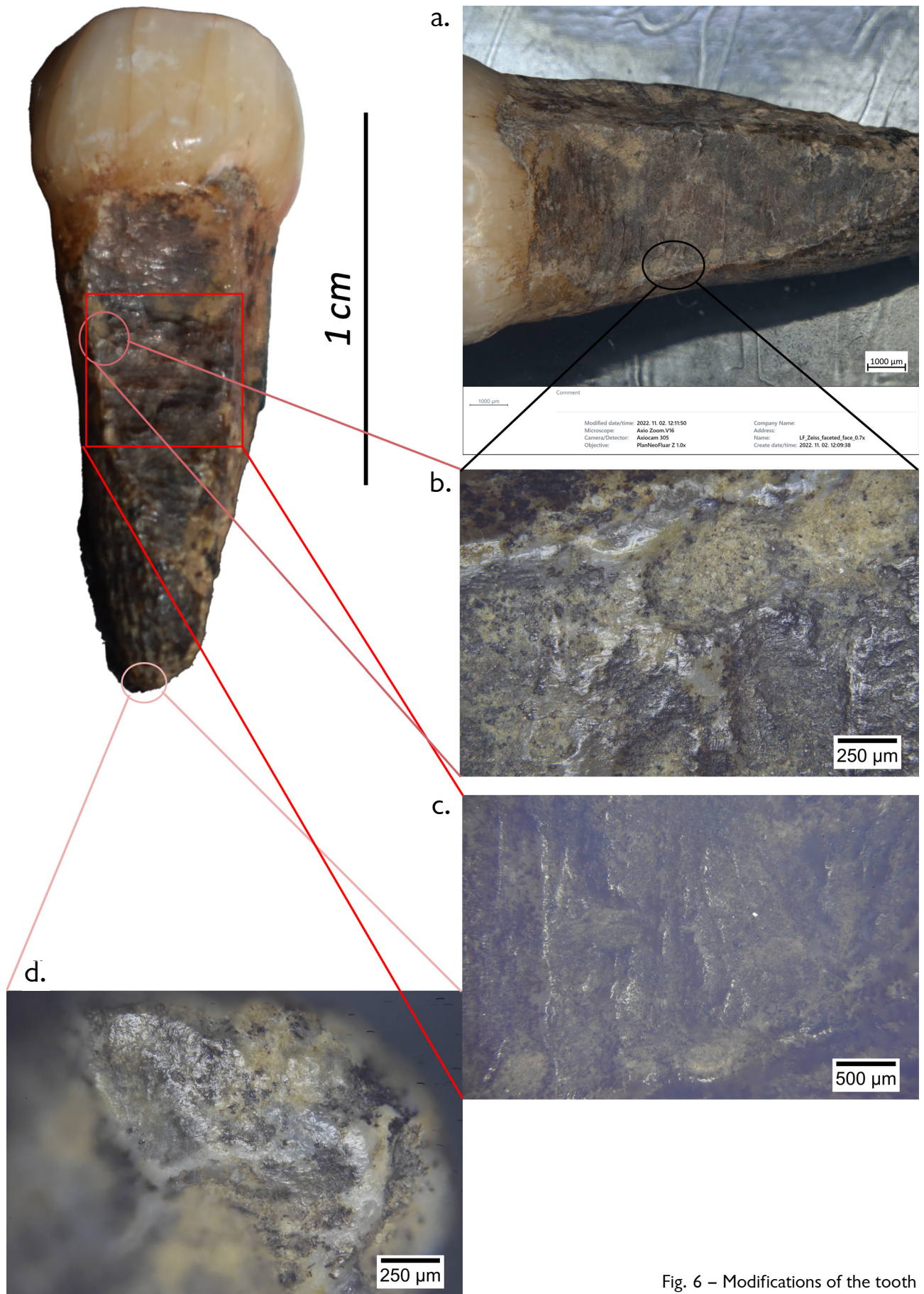


Fig. 6 – Modifications of the tooth root of a human canine (a). Microwear traces on and next to the faceted side of the root (b, c) and its tip (d).

In Belgium and northern France, finally, the use of flint as temper in ceramics is mainly known from the Middle Neolithic onwards (e.g. Bostyn *et al.*, 2011; Vanmontfort, 2001). It has also been observed in Late/Final Neolithic pottery of the Seine-Oise-Marne Culture (e.g. Augereau *et al.*, 2007) and Gord-Deûle-Escaut Group (Bostyn & Praud, 2000; Deramaix, 1997; Piningre, 1985; Praud *et al.*, 2015; Sergant *et al.*, 2009).

7. Anthropology

Most human remains recovered from the site are commingled and disarticulated long bones, bone fragments and teeth. There are also four partially articulated skeletons to date consisting of three left arms located in the left profile and one right lower leg in the centre and at the of the 2022 excavated deposits. Full anthropological analyses to refit all the fragments is currently ongoing and will shed light on the minimum number of individuals (MNI) buried at the site, their sex and age distribution.

The dental analysis, subject to detailed study and presented elsewhere in this volume, has revealed that there are a minimum of 22 individuals of which 20 individuals represented by teeth, a neonate and an infant of approximately 9-12 months of age. At least 13 of 20 individuals represented in the dental sample were juveniles, which is $\pm 65\%$ of de MNI.

The skeletal and dental material has been the subject of a strontium isotope study looking at mobility of the individuals (van Hattum *et al.*, under review), as well as a dietary isotope analysis (van Hattum *et al.*, in prep.). For 12 individuals, ancient DNA (aDNA) analysis is ongoing and an additional 4 individuals from 2022 could be submitted in the future. These aDNA analyses will provide us with information about biological relatedness and regional relationships of the Final Neolithic people (see e.g. Rivollat *et al.*, 2020).

8. Anthracology

During the excavation, 35 charcoal fragments were collected from layers US2 and US4. Most of these fragments (19) were identified as maple (*Acer sp.*) (Tab. 2). Other taxa that were identified are hazel (*Corylus avellana*), broom (*Cytisus sp.*), apple subfamily (Maloideae), blackthorn type (*Prunus type spinosa*) and oak (*Quercus sp.*).

Sample	Layer	<i>Acer sp.</i> maple	<i>Corylus avellana</i> hazel	<i>Cytisus sp.</i> broom	Maloideae apple subfamily	<i>Prunus t. spinosa</i> blackthorn type	<i>Quercus sp.</i> oak	Indet.
FA-2021-003	US04	2	-	-	-	-	-	-
FA-2021-005-03	US04	2	1	-	-	-	2	2
FA-2021-017	US04	1	-	-	-	-	-	-
FA-2021-25-005	US04	-	-	2	-	-	-	-
FA-2021-77	US02	2	-	-	-	-	-	-
FA-2021-80-1	US02	2	-	-	-	-	-	-
FA-2021-83-4	US02	1	-	-	-	-	-	-
FA-2021-105-001	Profile	1	-	-	-	-	3	-
FA-2021-106	Burrow R	2	-	-	2	-	-	-
FA-2021-120	US02	1	-	-	-	-	-	-
FA-2021-214-3	Burrow L	1	1	-	-	1	-	-
FA-2021-126-1	US02	4	-	-	-	-	1	-
FA-2021-186-2	US02	-	-	-	-	-	1	-
<i>Total</i>		19	2	2	2	1	7	2

Tab. 2 – Charcoal identifications *La Faucille*, 2021.

The high number of charcoal fragments from maple is remarkable. Although this tree did occur in the woodland vegetation in Belgium during the Neolithic (Bastiaens *et al.*, 2013), it hardly occurs in charcoal assemblages from Neolithic archaeological sites (Deforce *et al.*, 2014; Deforce *et al.*, 2013; Salavert *et al.*, 2014; Salavert & Dufraisse, 2014). The high total number of maple charcoal fragments, in combination with its occurrence in almost every sample, might therefore be an indication that (some of) the charcoal fragments are intrusive. Seeing the presence of multiple burrows at the site that disturbed the original stratigraphy, this is not unlikely. To verify this, some of these charcoal fragments will be radiocarbon dated.

9. Zooarchaeology

A small number of animal bones was also recorded in the site. They have not been systematically studied but species-determination and the observation of anthropogenic modifications were carried out. The animals recovered in the site belong to cat (*Felis sylvestris*), badger (*Meles meles*), red deer (*Cervus elaphus*), rabbit (*Oryctolagus cuniculus*), hare (*Lepus europaeus*), fox (*Vulpes vulpes*), as well as goat/sheep (*Caprinae*) and dog/wolf (*Canidae*).

Some of the remains attest the presence of young animals. Nonetheless, except for the awl and the perforated canine (De Groote *et al.*, 2019), no anthropogenic modifications were noticed. Some gnawing marks are observed. Based on what we observed so far, it is likely that the animal remains are intrusive and not anthropogenic in origin. We can therefore conclude that it is likely that the animals were deposited here naturally.

Some of the animal bones and teeth were selected for isotope baseline studies (van Hattum *et al.*, in prep.; van Hattum *et al.*, under review).

10. Archaeoethanatology

During the 2021 and 2022 field season, observations were made that are beginning to give an insight into the burial practices of the Final Neolithic people who buried their dead in *Grotte de la Faucille*. The interpretation of these observations is made difficult by the presence of large burrows throughout the site. Nevertheless, there are some remarkable observations.

Firstly, the presence of partially articulated left arms in the left profile is indicative that the individuals were buried on their back with their head towards the porch and feet towards the back of the cave. The partially articulated lower leg discovered during the last day of the 2022 season slopes downwards into the cave and appears to have been deposited in the same positions as the individuals represented by the arms.

Secondly, very few bones of the skull have been recovered to date, apart from a few fragments. Considering a minimum number of 21 individuals was recorded on the basis of the teeth and the presence of both upper and lower loose teeth, this does suggest that the skulls were at some point present in the site. During the 2021 and 2022 season, the bones of the cranium remain underrepresented, but an accumulation of large parts of four mandibles, and a partial mandibular body not belonging to these four, in the centre of the site (surrounded by burrows) was odd. These mandibles appeared in a compact sediment surrounded by burrows. Similar observations were made with accumulations of long bones of the arms at a similar level, and long bones of the legs a few centimetres below, some of which were clearly located in non-burrow sediment. These accumulations of mandibles and long bones are nevertheless random. The mandibles belonged one adult (3/4 mandible with periodontitis), two juveniles of 6-7 years of age at death (three parts coming from two mandibles), one juvenile 4-6 years old at death (chin + right side), and an additional adult mandibular body fragment. These mandibles were placed in haphazard positions, one on top of the other, some teeth up, some teeth down.

The long bones were placed primarily in the direction of the long axis of the site but with proximal and distal ends mixed up (Fig. 2). Some pairs were placed closely together, others were further apart (although burrowing activity did affect the perimeter of these areas). This particular deposition pattern cannot be explained other than that the Neolithic people placed these mandibles and long bones there. It is suggestive that the Neolithic people removed the skeletons of the individuals buried in the cave previously after they had decomposed and then placed them back into the cave.

The presence of the boulder at the base of the deposits, and a number of other boulders showing a level of organisation above the archaeological deposits in firmer sediment, need to be studied further to ensure they are not natural deposits from the cave wall, but instead, were placed there by the Neolithic people as a mean of demarcating the burial space or to seal the entrance to the cave (see examples of such practices mentioned in Cauwe, 2004: 219-220; see also *Abri des Autours* in Cauwe, 2004 and Polet & Cauwe, 2002).

The existence of the articulated skeletons and the organised bones in the infill is suggestive that the articulated individuals would be the most recent in the site but dating analyses to date do not support this hypothesis. Perhaps when the site was reused, the arms of the individuals in the left of the site were undisturbed because of their position near the cave wall. The dating of these individuals is very close and statistically indistinguishable [$\chi^2(1) = 0.082$ (5 % 3.841) and $A_{comb} = 110.8$ % ($A_n = 50.0$ %)] which suggests that the use of the site was relatively short but phases were far enough apart for bodies to decompose between new additions. This short timespan offers the unique opportunity to work with an assemblage that is possibly a single clan or family and will enable us to use stable isotopes and DNA analysis to get an insight into the health and lifeways of a late Neolithic community and its funerary practices, and these in-depth studies are ongoing. What is clear, however, is that the burial rites and treatment of the dead during the late Neolithic was an extremely complex one.

11. Conclusion

Most Neolithic collective burials were excavated in the 19th and start of the 20th century. Our interpretation of these caves comes primarily from the skeletal remains stored in museum collections and lack detailed documentation of the placement of the human remains. A handful of sites (see Cauwe, 2004; Polet, 2011; Toussaint, 2007) have been excavated more recently and provided a framework by which to compare *La Fauville*. The ongoing and completed research carried out on the archaeological and anthropological material makes *La Fauville* unique. It is the first collective burial that has offered detailed insights into its chronology. These dates have opened up avenues for further follow-up research in isotope and aDNA research to further our understanding of biological relatedness and lifeways of the people of the Final Neolithic in Belgium. Next to the biological and archaeological research, the site offers the opportunity, despite its high level of bioturbations, to inform us of the funerary practices of the people of the Final Neolithic. This latter subject will be the main focus of the coming excavation season: to further study the stratigraphy, the presence of the large boulders in the site and to assess the occurrence of burial pit structures.

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Abstract

The excavation of the collective burial in *La Faucille* cave was continued in 2021 and 2022 and this paper presents the results of these excavations. During this collaborative excavation between the University of Ghent and Archéologie Andennaise (now Espace Muséal d'Andenne) additional finds and insights were obtained. The minimum number of individuals present in the cave on the basis of teeth now stands at 23 individuals, of which more than half are children. Dating analyses and cultural association of the artefacts suggest a Final Neolithic occupation. New insights were also gained on the burial culture. Despite heavy bioturbations affecting the site, four partially articulated individuals were discovered and it was possible to identify re-organisation of the buried individuals by the Neolithic peoples.

Keywords: Sclayn, *Grotte de la Faucille*, Andenne, Prov. Namur (BE), *La Faucille* Cave, Neolithic, Final Neolithic, collective burial, burial practice, ¹⁴C dates.

Résumé

En 2021 et 2022, de nouvelles fouilles ont été entreprises dans la tombe collective de la *Grotte de La Faucille* par une équipe multidisciplinaire de l'Université de Gand et de l'ASBL Archéologie Andennaise (actuellement Espace Muséal d'Andenne). L'objectif de cette contribution est de présenter les principaux résultats obtenus pendant ces deux campagnes. Ainsi, une analyse des dents documentées jusqu'à présent indique qu'un minimum de 23 personnes a été inhumé dans la grotte et que plus de la moitié de ces individus étaient des enfants. La série de datations radiocarbones effectuée situe l'exploitation de la cavité entièrement dans le Néolithique final et le mobilier archéologique associé aux restes humains semble parfaitement compatible avec cette datation. Finalement, les fouilles ont aussi déjà livré quelques données au sujet des pratiques funéraires des Néolithiques à *La Faucille*. Malgré le fait que le site a été fortement perturbé par les bioturbations, nous avons pu identifier quatre individus partiellement articulés ainsi que des réorganisations volontaires de certaines parties des squelettes.

Mots-clés : Sclayn, *Grotte de la Faucille*, Andenne, Prov. de Namur (BE), Néolithique, Néolithique final, tombe collective, comportements funéraires, dates C14.

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