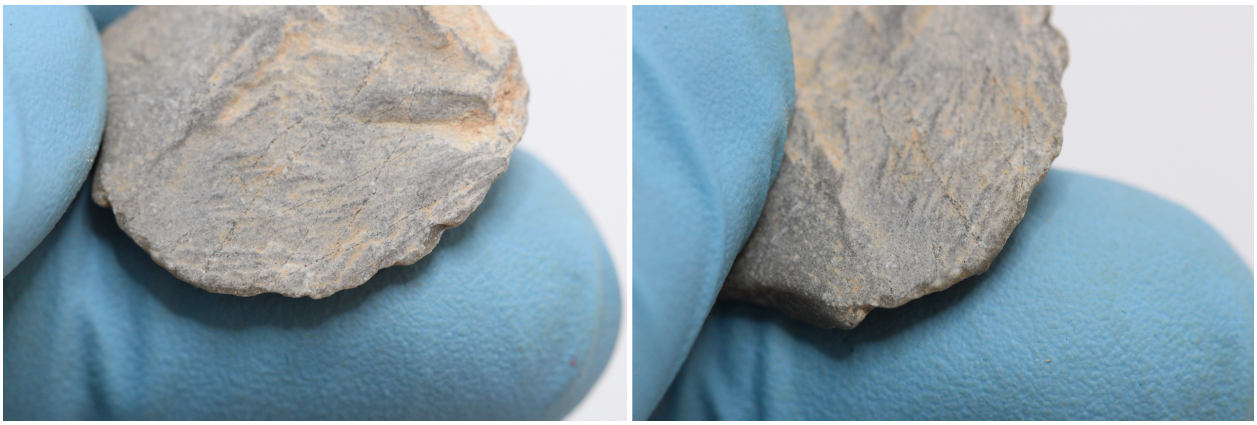
IV.8. Taxon F — D, Dx, Dt: Tools on flake, modified/used flakes
(13 items; #1028–1040)

#1028. Item no. 487-11118

Exc. nr.	Discovery date	Square -subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	02/02/2016	i6	-1.55/ -1.70	-1.68	283920.86	2724534.97	1212	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dx, F	Flake, used	21.3	20	5	2.5	V		

Characterization. This small, almost circular artefact is a tool-on-flake, a tertiary flake of pale-green limestone coated by a thin layer of yellowish sediment, presumably used as a handheld cutting tool. The small platform, partly collapsed, is associated with two *eraillure* scars and a



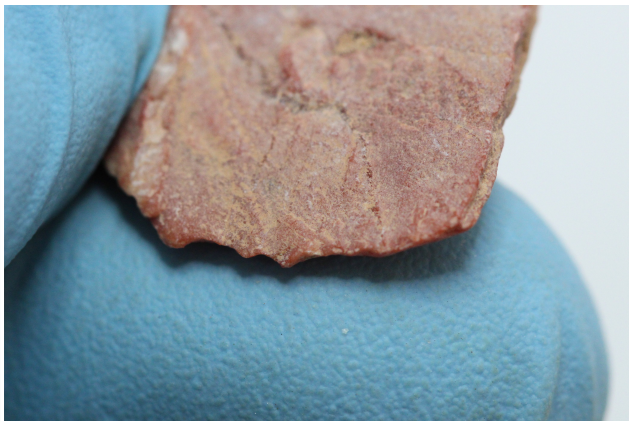
small impact bulb on its ventral side, which is also dominated by deep impact striations. The right edge is a smooth continuous convex edge that served as the working edge of the cutting tool, presenting use-wear in the form of retouch, micro-scars and micro-notches.

#1029. Item no. 492-11133

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	02/02/2016	K4	-2.23/ -2.33	-2.32	283922.76	2724533.02	1212	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dx, F	Flake, used	21.9	24.9	5.9	2.83	V(x)		

Characterization. This remarkable artefact is a peculiar tool-on-flake, made out of a unique type of pink raw material — seemingly recrystallized limestone as well, but very similar in properties to fine-grained cherts and agate — but from a particular variety not represented in any other artefact or natural nodule seen at the cave. Possibly, an example of exotic material.

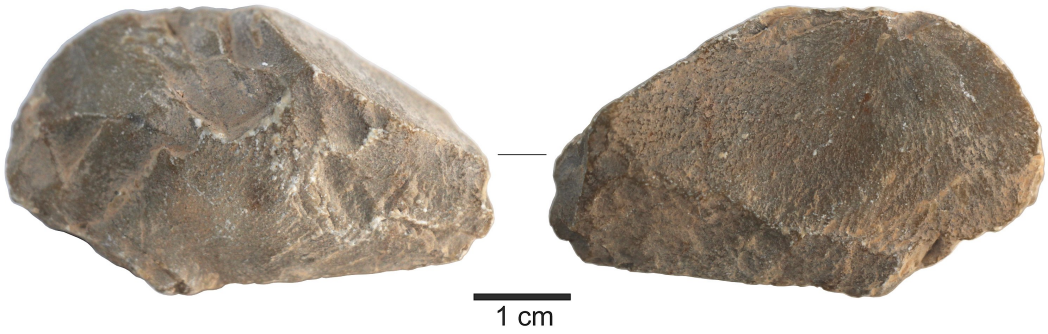
However, as shown in other examples above, the green limestones at Chiquihuite do present mineral reddish vein intrusions inside the matrix, so there could have been a particular nodule, found suitable by the occupants, that presented a substantial mass of pink intrusion instead, meaning that the color of the piece alone is not sufficient argument to consider it an exogenous material (which remains a plausible hypothesis, though, one that requires specialized analyses to be tested). The original morphology of the flake was modified and is no longer clear, especially on its proximal section. A curved transversal ridge on one of the faces is probably a reminiscence of an impact bulb, indicating this side was the ventral one. Parts of the piece are coated by yellow sediment depositions, consistent with the stratum from which it was

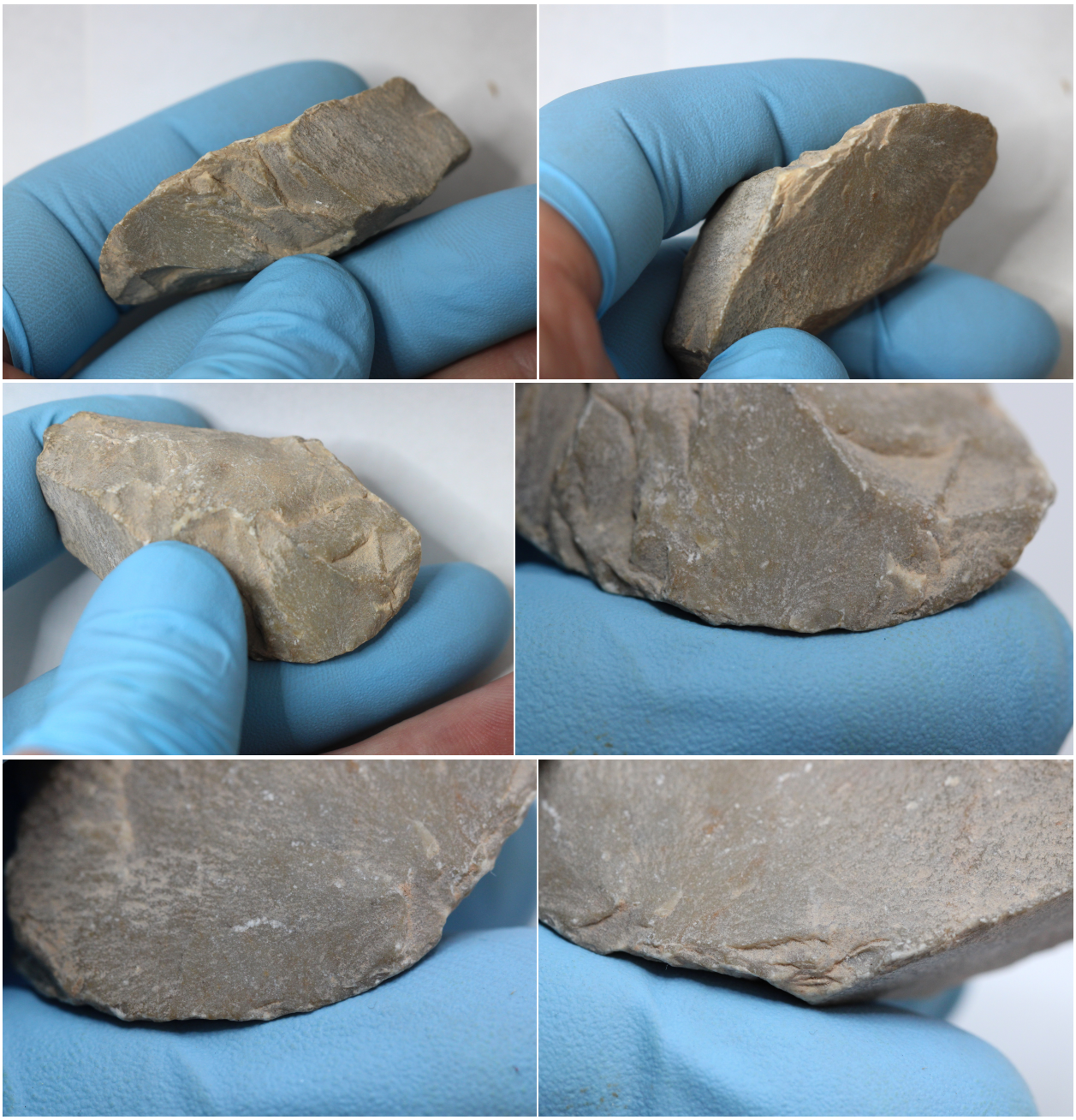


recovered. The distal end of the flake is broken straight, marked by a hinge fracture probably formed at the moment of its separation from the parent core, something that suggests this is the original length of the piece. The lateral edges of the flake present fine use-wear, with micro-serrations and polish that suggest it had been used as a double-edged cutting tool.

#1030. Item no. 1992-13213

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	24/01/2017	M4-NE	-2.60/ -2.70	-2.68	283925.29	2724533.13	1212	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dx, F	Flake, used?	30	46.2	14.7	22.47	V		



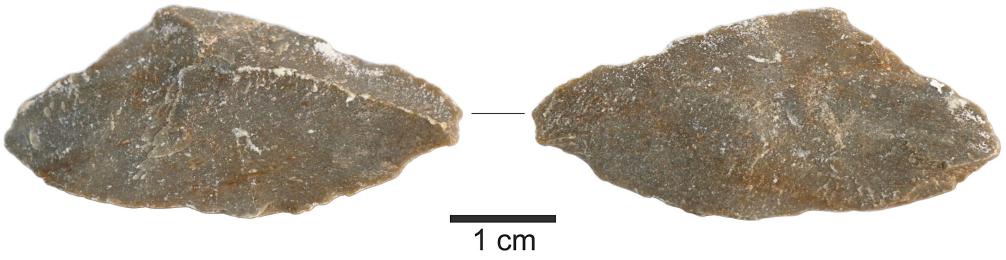


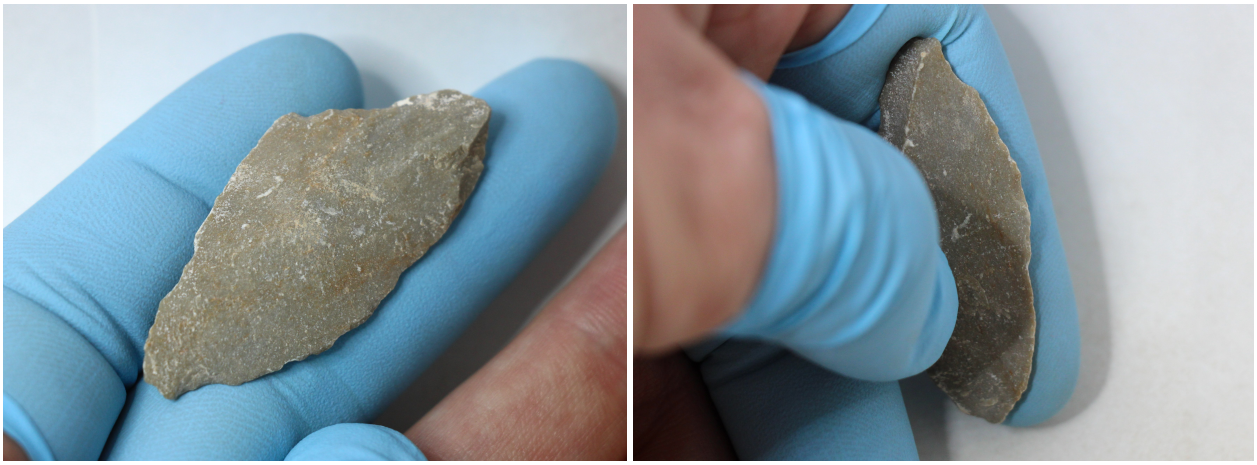
Characterization. This artefact is a heavy, coarse cutting tool, improvised on a thick tertiary flake extracted by heavy percussion from a tabular green limestone core. The flake has a very large, wide and flat platform, part of the natural flat surface of the parent core. The platform had been impacted several times, in a succession of multiple extraction attempts, which left behind the overlapped, scalar flake scars on the

proximal-left sector of the dorsal side. On the ventral side, the white-dotted percussion spot is associated with overlapped *eraillure* scars. The working edge of this peculiar artefact is the left side of the coarse flake. This edge is a continuous, rounded, convex, robust edge that presents fine, barely perceptible use-wear, probably produced by the utilization of this edge for cutting and scrapping, activities that involved a homogenizing pressure along the entire length of the edge. The tool was probably used handheld, with the right hand, with the thumb resting on the ventral side of the flake, and with the large platform held downwards.

#1031. Item no. 2008-13220

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	24/01/2017	M4-SE	-2.60/ -2.70	-2.68	283925.39	2724532.93	1212	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dt, F	Transversal flake, used	20.2	45	7.1	5.67	V		





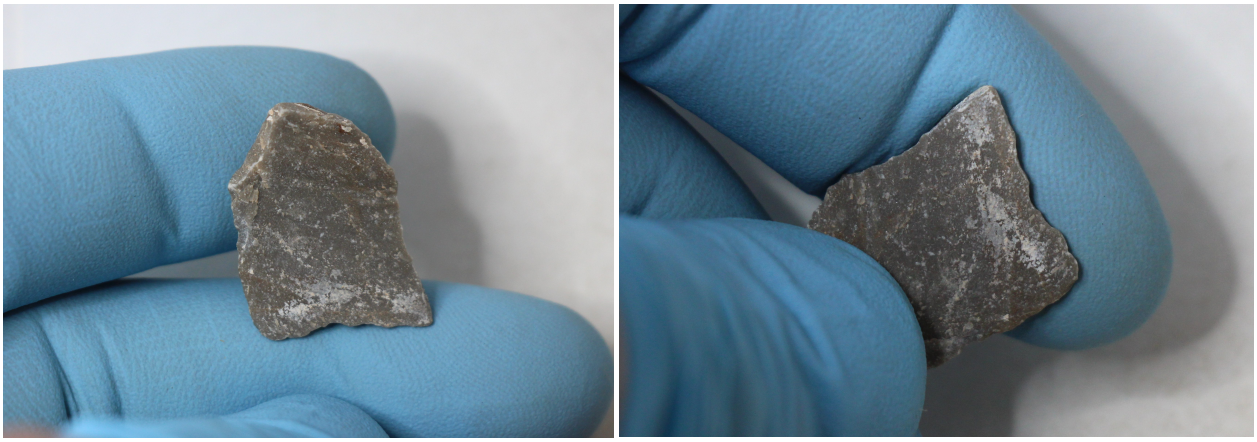
Characterization. This artefact is a very good technological and typological example of a tool-on-flake, a double-edged cutting tool partially used in the modality of a backed knife. The fact that the fine-grained green limestone blank is a transversal flake is questionable, as its morphology is confusing, and no evident platform is present anymore. The piece has two converging sharp edges, both with clear use-wear. The shorter edge is paralleled by the dorsal

ridge, with which it forms a flat surface titled towards the dorsal side, suitable as the grip area of a backed knife. For such use, the long convex edge would play the role of a working edge. The use-wear here manifests as cutting-related micro-notches and micro-scars formed consistently on the dorsal side of the edge, along its right half, with a small notch formed as an exception on the ventral side near the tip of the flake. The other edge of the flake also present use-wear of similar characteristics, covered by localized white carbonate coating that serves as an indicator of its pre-depositional antiquity.

#1032. Item no. 2090-12753

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	26/01/2017	M6-NE	-2.70/ -2.80	-2.77	283925.44	2724535.43	1212	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
D, F	Flake, used	20.2	15	4	1.38	V		

Characterization. This artefact is a small, fragmented tool-on-flake, made on a tertiary flake of green limestone, with a broken and missing left side. The proximal area is broken, too, and the platform can no longer be appreciated entirely. The tool was probably a cutting/scraping tool,

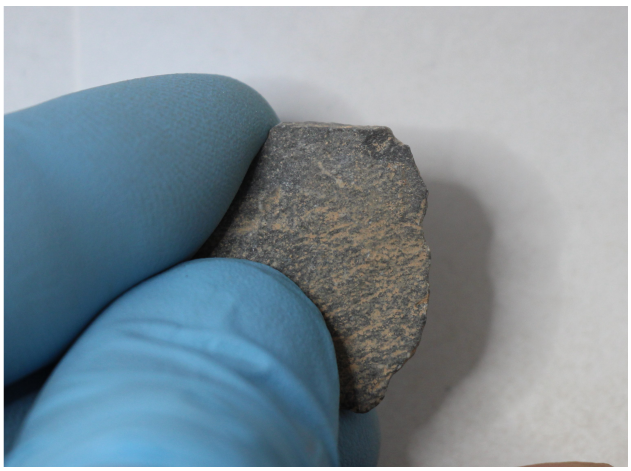


with the distal edge of the flake serving as the working edge. The distal margin reveals a wavy profile with micro-scars forming over the dorsal face of the edge.

#1033. Item no. 487-11116

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	02/02/2016	i6	-1.55/ -1.70	-1.60	283920.76	2724534.87	1217	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dx, F	Flake, used?	19.2	22	4.4	1.84	V(b)		



Characterization. This small, thin artefact is a (probably primary) flake of black limestone that was possibly used as a cutting tool, as suggested by the apparent use-wear on its distal-right edge. The dorsal side reveals cortex and patina, as well as texturized erosion, and a cortical squarish left edge. The proximal section reveals an interesting characteristic: there is a clearly distinguishable ground, white-dotted, prepared platform, intended as the planned impact spot for the extraction of, probably, a much larger flake. Yet, the actual platform of the flake is located immediately to the right on the proximal edge, in the form of a flat, oval, lipped feature. Several smaller dorsal scars in the proximal section show a more complex preparation of that particular part of the core. The ventral side reveals no *eraillure* scar, but a marked impact bulb under the platform. The wavy profile of the presumed working edge and the micro-notches support the hypothesis that this is a tool-on-flake, presumably employed for cutting.

#1034. Item no. 2161-13247

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	27/01/2017	L6-SE	-3.00/ -3.10	-3.03	283924.16	2724534.71	1219	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dt, F	Transversal flake, used	18.7	31.4	5.5	3.52	V		

Characterization. This fine artefact is a tool-on-flake, a cutting tool made on a secondary transversal flake of green limestone, a tool that was used “upside down”: with the platform held downwards and the modified distal edge utilized as the finger-resting, grabbing section. The transversal flake has a very small, punctiform platform on a very thin proximal edge. The location of the impact point is confirmed by the orientation of the impact striations on the ventral side, and by the small scars produced by failed extraction attempts on the dorsal side. The platform area became part of the working edge of the tool. The distal edge of the flake was carefully trimmed down into a straight dull edge, by systematic, abrupt marginal retouch. The working edge of the cutting tool is the long, right-sided convex edge, which presents micro-scars and polish consistent with the markings usually left by cutting activities.





#1035. Item no. 2161-13248

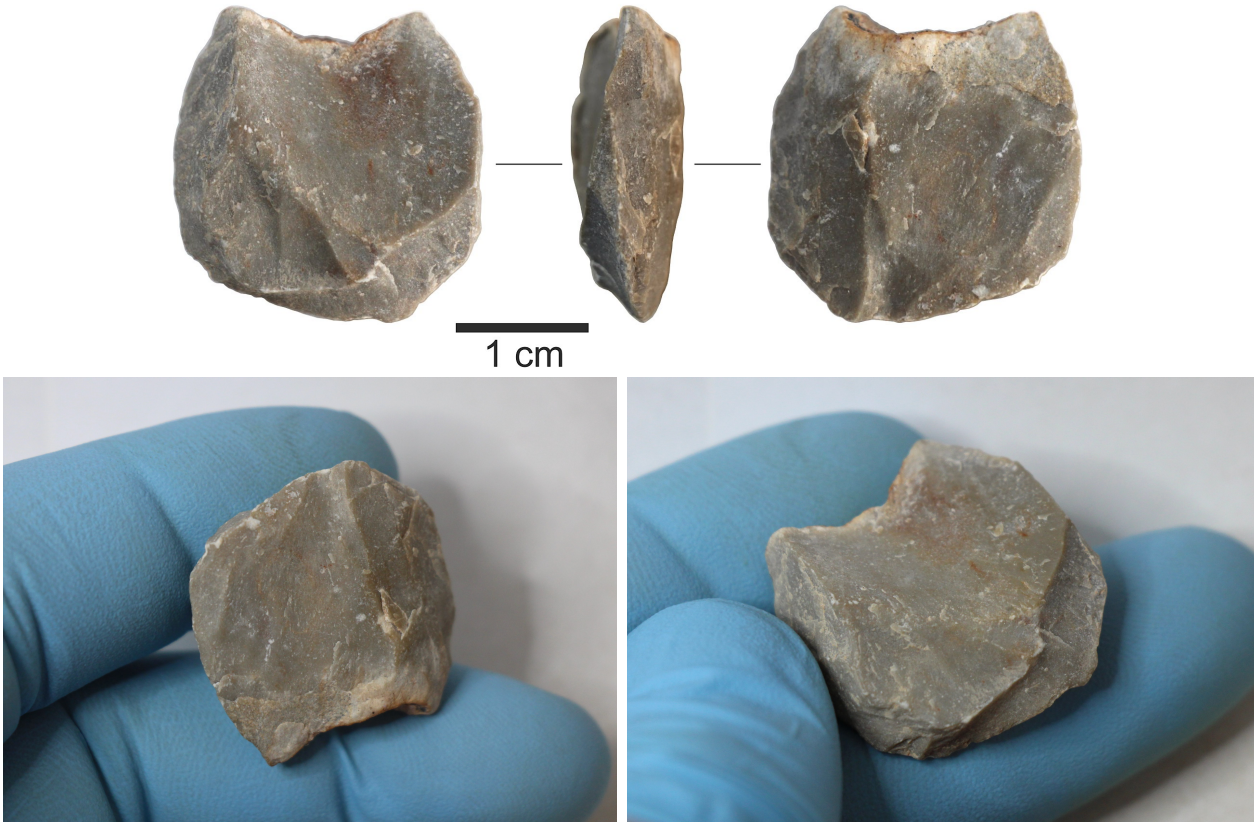
Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	27/01/2017	L6-SE	-3.00/ -3.10	-3.07	283924.16	2724534.91	1219	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dx, F?	Flake, used?	19.2	24.3	6	3.54	V		

1 cm

Characterization. This artefact is a tertiary flake of fine-grained green limestone. It has a very thin proximal edge, and a small, punctiform platform, barely recognizable by the white-marked impact point and by its adjacent ventral lip, as well as by the radiating impact striations on the ventral side. This side is convex, as a particular manifestation of the impact bulb. The piece apparently presents some type of retouch made on the lateral edges. On one side, the retouch originates from the ventral side, and on the other edge, from the dorsal side. Similarly, very small use-wear marks are apparent on the corner of the proximal edge.

#1036. Item no. 2162-13250

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	27/01/2017	M6-NE	-3.00/-3.10	-3.07	283925.29	2724535.28	1219	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
D, F	Flake, modified	23.9	24	7.2	5.38	V		



Characterization. This item is a green limestone tertiary flake, modified by flaking along its distal edge, making it look like the contour of a scraper, although there is no supporting

evidence that the artefact had been employed for such a specific purpose. Its ears-like proximal section has a shape produced not intentionally, but naturally, because of a mineral intrusion, an impurity that pre-determined the shape of the breakage. Two edges were subsequently shaped rounded by extracting blades along the edges themselves, enhancing this rounded shape with squarish profiles. This is probably the preform of an undetermined type of artefact, abandoned during its reduction process, as a failed product.

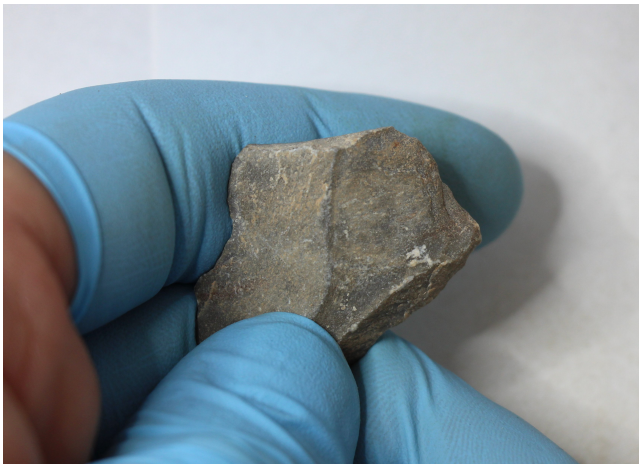
#1037. Item no. 588-10110

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	06/02/2016	K4-NW	-	-3.25	283922.71	2724533.37	1222	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dt, F	Transversal flake, used	43.4	26.4	10	12.24	V		

Characterization. Despite its general aspect, this item is not a point preform, but a used flake, probably employed for cutting-scraping in the modality of backed knife. It is a thick, robust tertiary flake of dark-green limestone, with localized stains of light-brown sediment depositions on its surface. This was probably a transversal flake, with the pointy tip marking its right end. The left side looks thinned, but probably natural. The proximal section was apparently removed by a longitudinal extraction, forming a square edge suitable for finger-resting as part of the grip area of a backed knife. The right edge of the ogival shape, corresponding to the distal margin of the blank, seems to be the working edge of the presumed cutting tool. It reveals a degree of uneven use-wear in the form of micro-scars and micro-notches, as well as a larger pressure notch in the centre. The anthropic origin of these marks is probable, but not self-evident.

#1038. Item no. 586-11809

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	06/02/2016	L7-S	-	-3.30	283923.96	2724535.81	1222	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dx, F	Flake, used?	29.6	26	5.9	4.95	V		



Characterization. This artefact is a thin, wide, secondary flake of dark-green limestone, with a cortical left edge. The damage seen on the lateral edges is natural. The platform is oval, long and wide, flat, with the impact spot visible at the centre of the ventral edge, marked by a small, shallow impact protuberance, and confirmed by abundant

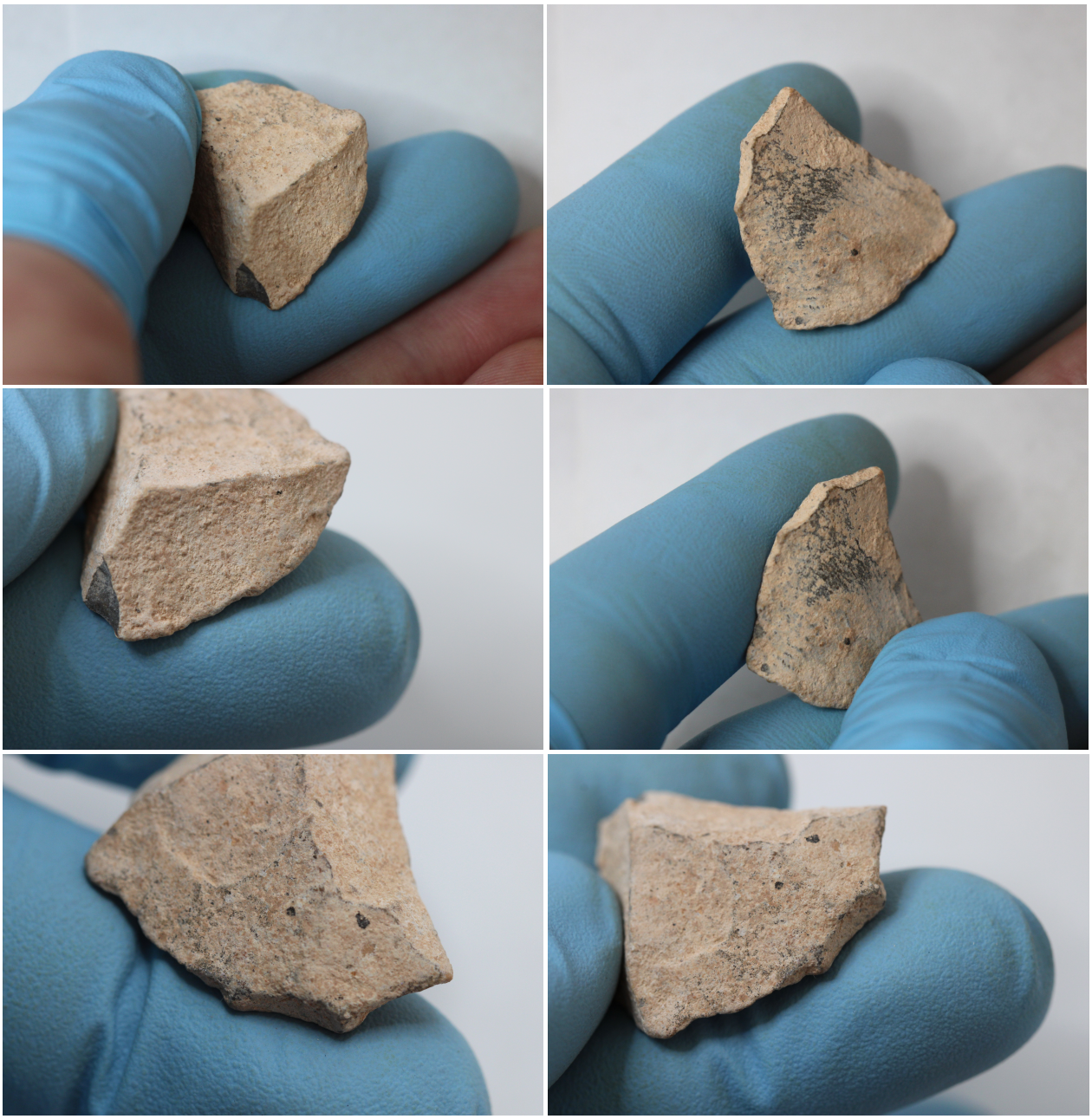
impact striations radiating away. The distal end has a convergent shape, in which the right segment is the distal separation plane from the parent core. The left segment of the distal edge is sharp, and it reveals thin, overlapped micro-scars over its distal face, suggesting a possible use as an endscraper, although the evidence is not compelling enough.

#1039. Item no. 646-12262

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	07/02/2016	i6/ i7	-2.60/ -2.80	-2.72	283921.16	2724535.47	1223	C
Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
D, F?	Flake, used?	24.5	22.2	8.5	4.02	V		

Characterization. This artefact is a possible small tool-on-flake, potentially an endscraper, with the morphology of the flake and presumable use-wear difficult to appreciate because of the thick, homogenous, orange-yellow carbonate coating that covers the entire piece. Certain micro-features and retouches along the edges confirm tempering with the original shape of the

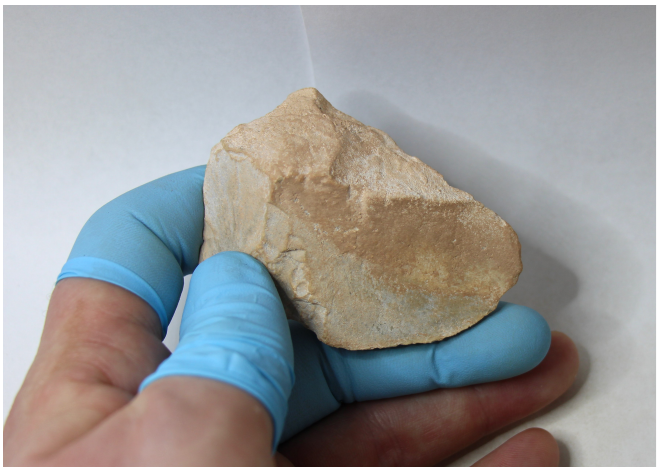
green limestone tertiary flake, but the true nature of the human intervention cannot be convincingly supported.

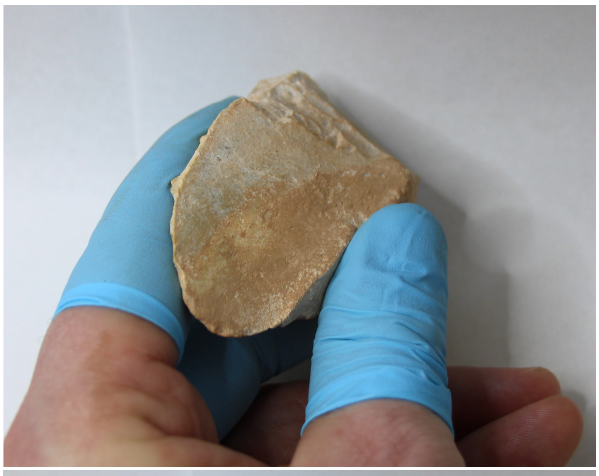


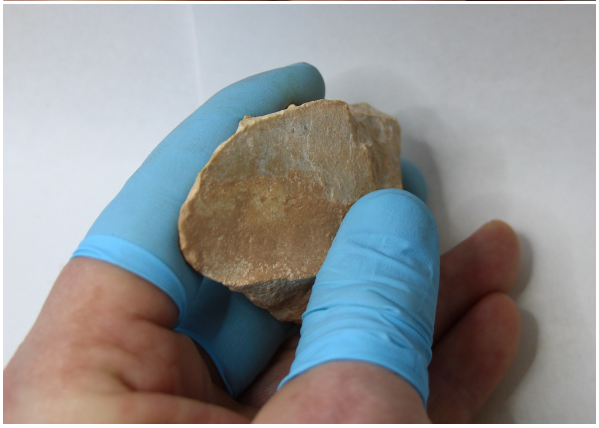
#1040. Item no. 573-10065

Exc. nr.	Discovery date	Square-subsq.	Depth range Z(D)	Depth Z(datum)	UTM E (x)	UTM N (y)	Stratum	Stratig. comp. (SC)
X12	06/02/2016	i7	-2.46/ -2.50	-2.48	283921.00	2724535.60	1223	C

Taxon code	Taxon definition	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)	Raw material class		
Dt, F	Transversal flake, modified, used	48.5	67.2	20.5	59.92	V		







Characterization. This intriguing item is a modified and used, heavy transversal flake of green limestone completely covered by a thick, uniform, and texturized orange-brown coating formed over the artefact during its millennia of deposition inside a pre-LGM stratigraphic layer. Small, localized, recent damage reveals the raw material underneath the coating. The item has the appearance of a hand ax, but, in fact, this is rather a modified and potentially used transversal flake. It has a prominent platform, and the ventral impact bulb was modified by a flake removal on the ventral side. The high-backed dorsal side shows a series of overlapped extractions on the distal section, but the nature of their origin is difficult to establish. The most evident and unquestionable evince of human intervention is the one marginal retouch that transformed the entire right half of the distal edge into a smooth, continuous convex edge. This edge was trimmed by pressure-and-friction movements, probably made by grinding the flat side of a hammerstone against the edge in a constant motion, similar to when one sharpens the blade of a metal knife. This produces precisely the type of retouch and polish still visible on this artefact, in spite of its thick coating. The tip of the tool, in direct continuation of the convex edge, presents large use-wear notches, but filled in by the patina. The prospective functionality of this artefact, prepared in this manner, is not known at this point. However, the mentioned features along the smooth convex edge are of unquestionable human origin.