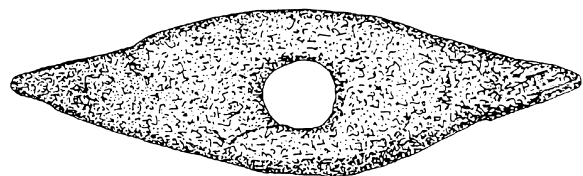
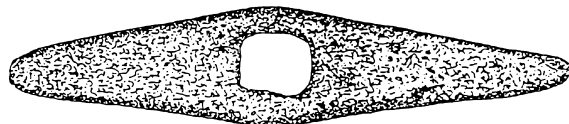


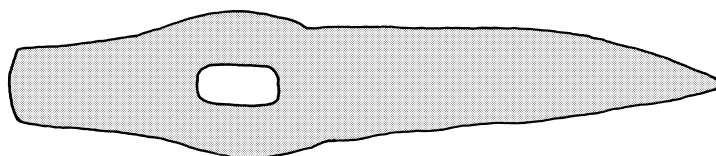
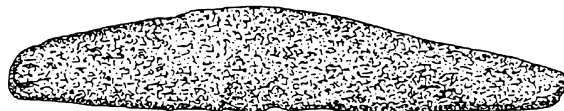
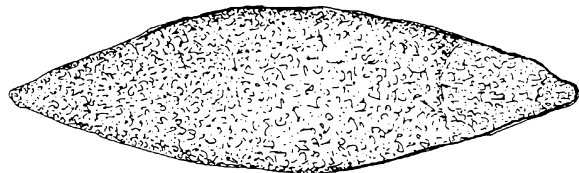
TAFELN 1-40
FARBTAFFELN 1-4



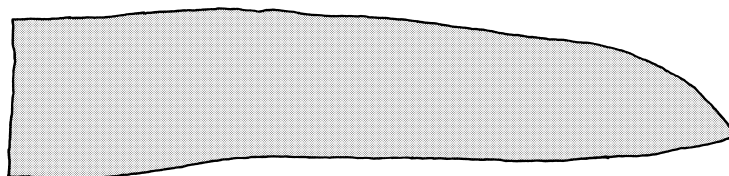
1



2



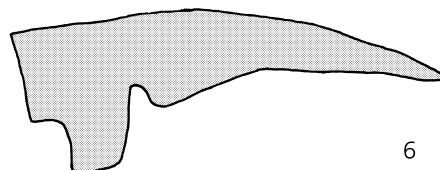
3



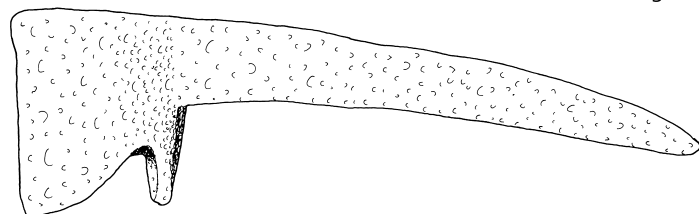
4



5



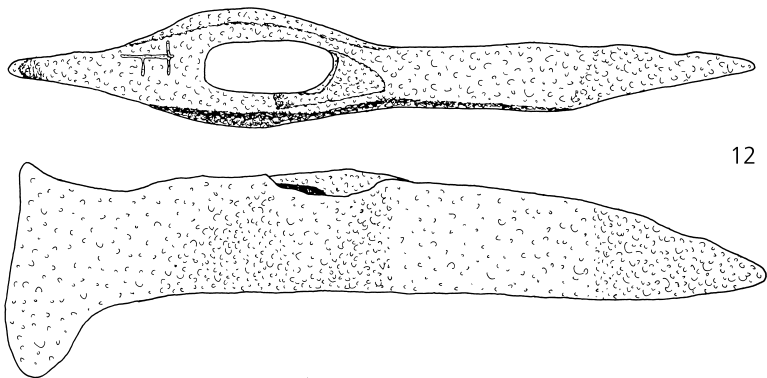
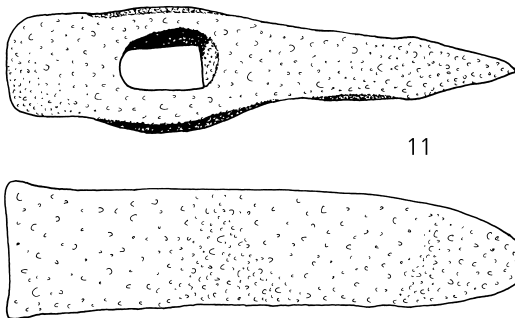
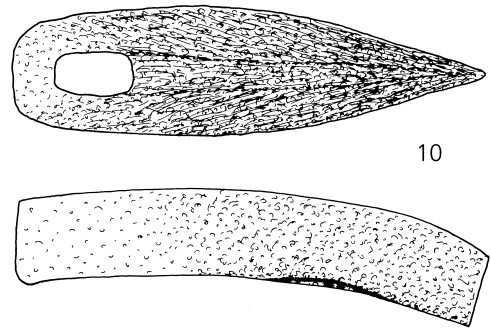
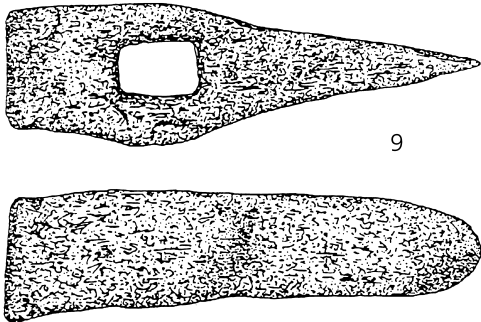
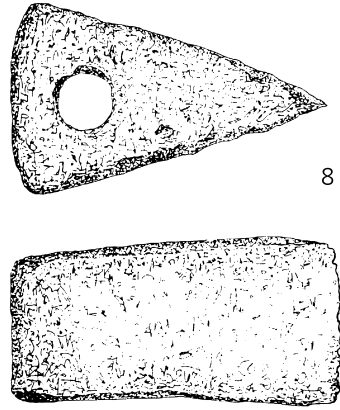
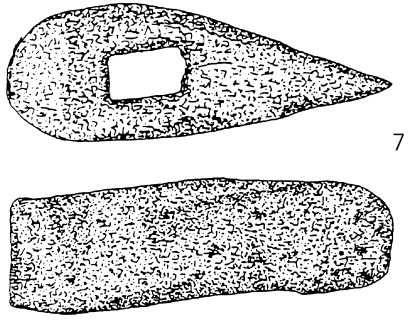
6



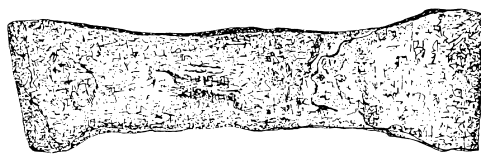
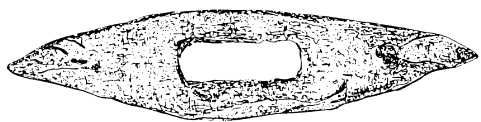
10 cm



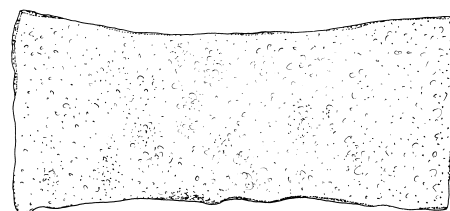
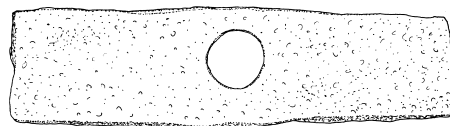
Funde aus den Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 1-2 Zweispitzen. – 3-4 Spitzhmmer. – 5-6 Spitzhacken.



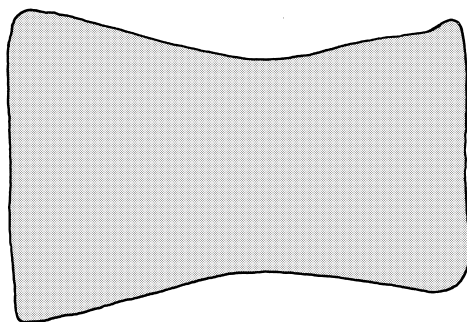
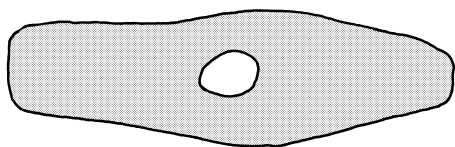
Funde aus den Mülsteinbrüchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 7-11 Keilhämmer. – 12 Kombinationswerkzeug Beil/Spitzhammer.



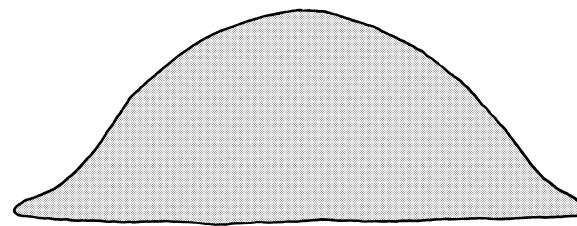
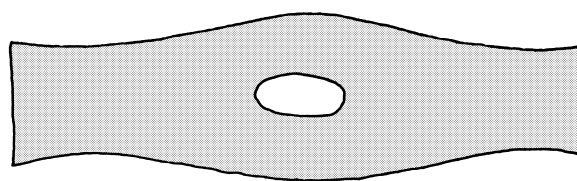
13



14



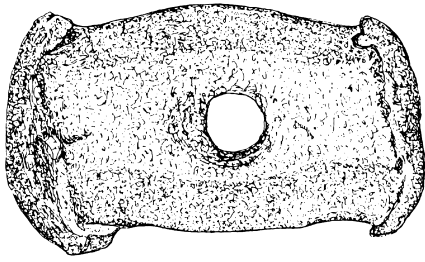
15



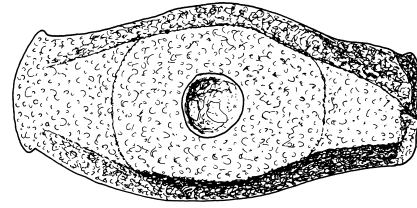
16



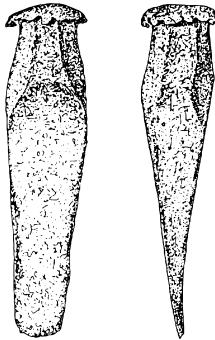
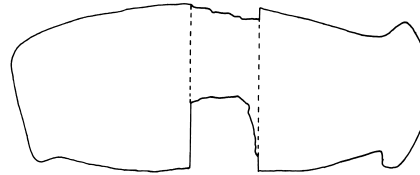
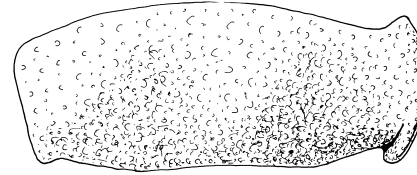
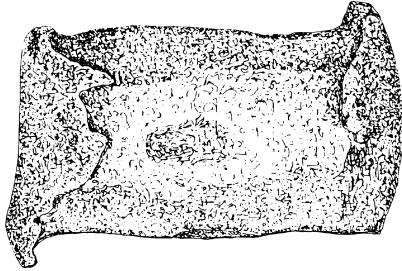
Funde aus den Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 13 Flcht. – 14-15 »Stumpfe Flcht«. – 16 doppelter hutfrmiger Dechsel.



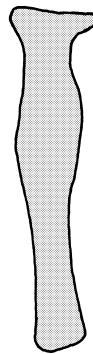
17



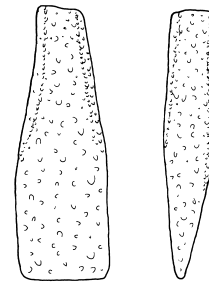
18



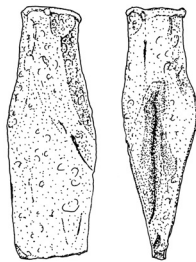
19



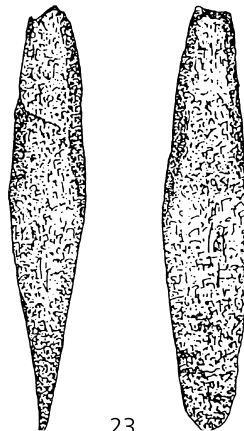
20



21

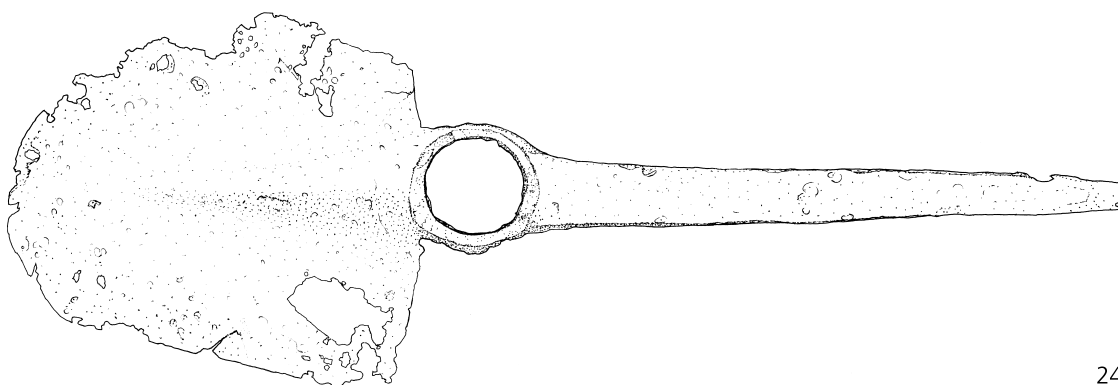
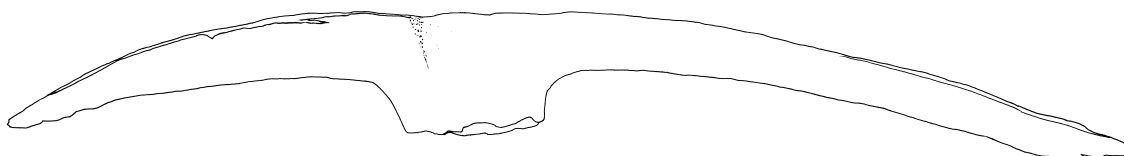
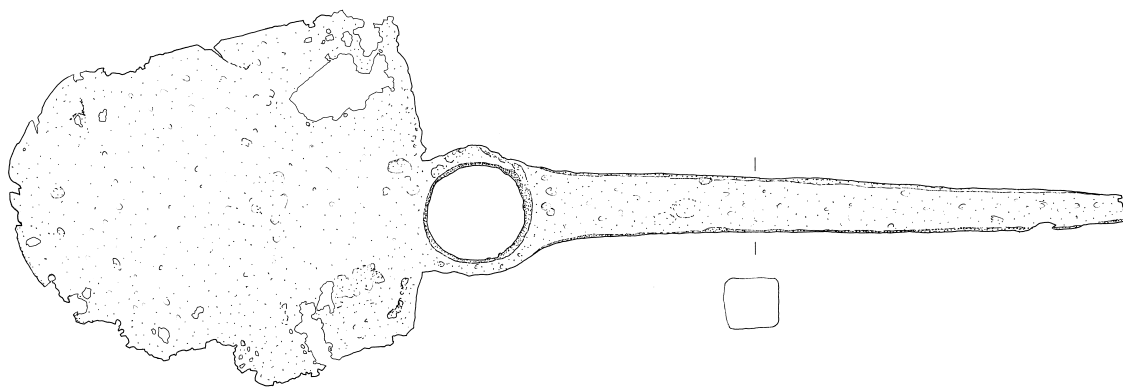


22

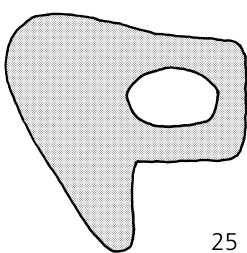


23

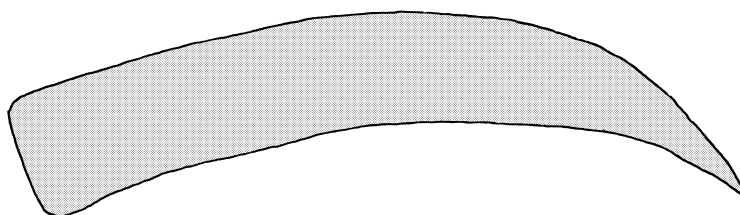




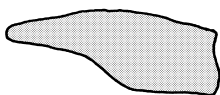
24



25



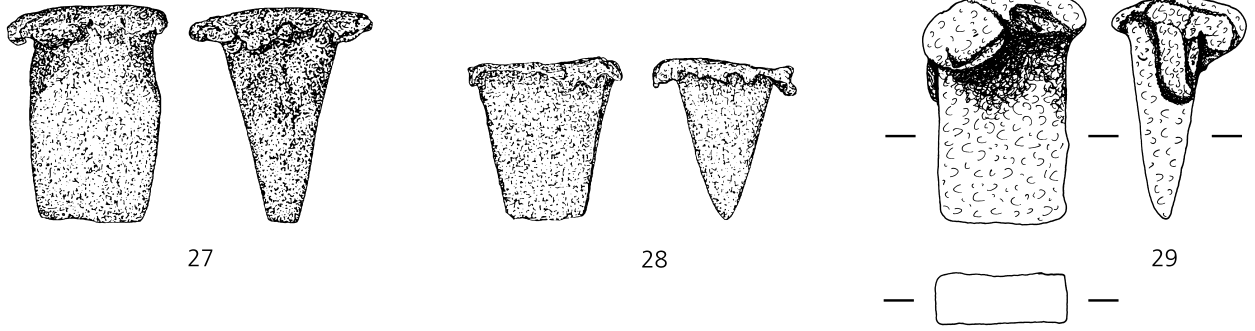
26



10 cm

Funde aus den Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 24 Ziehhacke. – 25 Hacke(?). – 26 gebogener Spitzhammer(?).

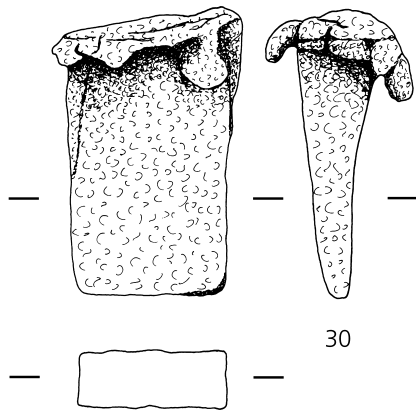
Tafel 6



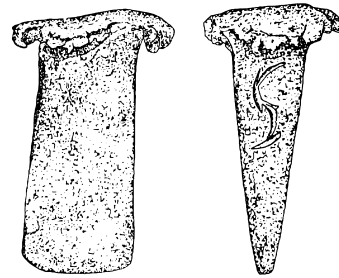
27

28

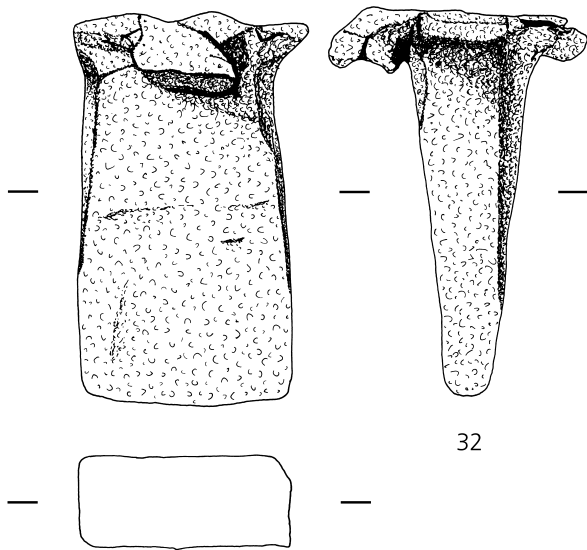
29



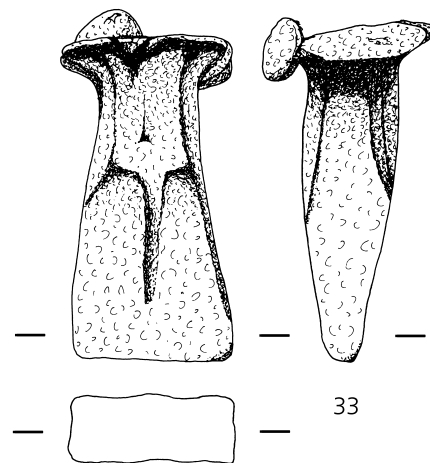
30



31



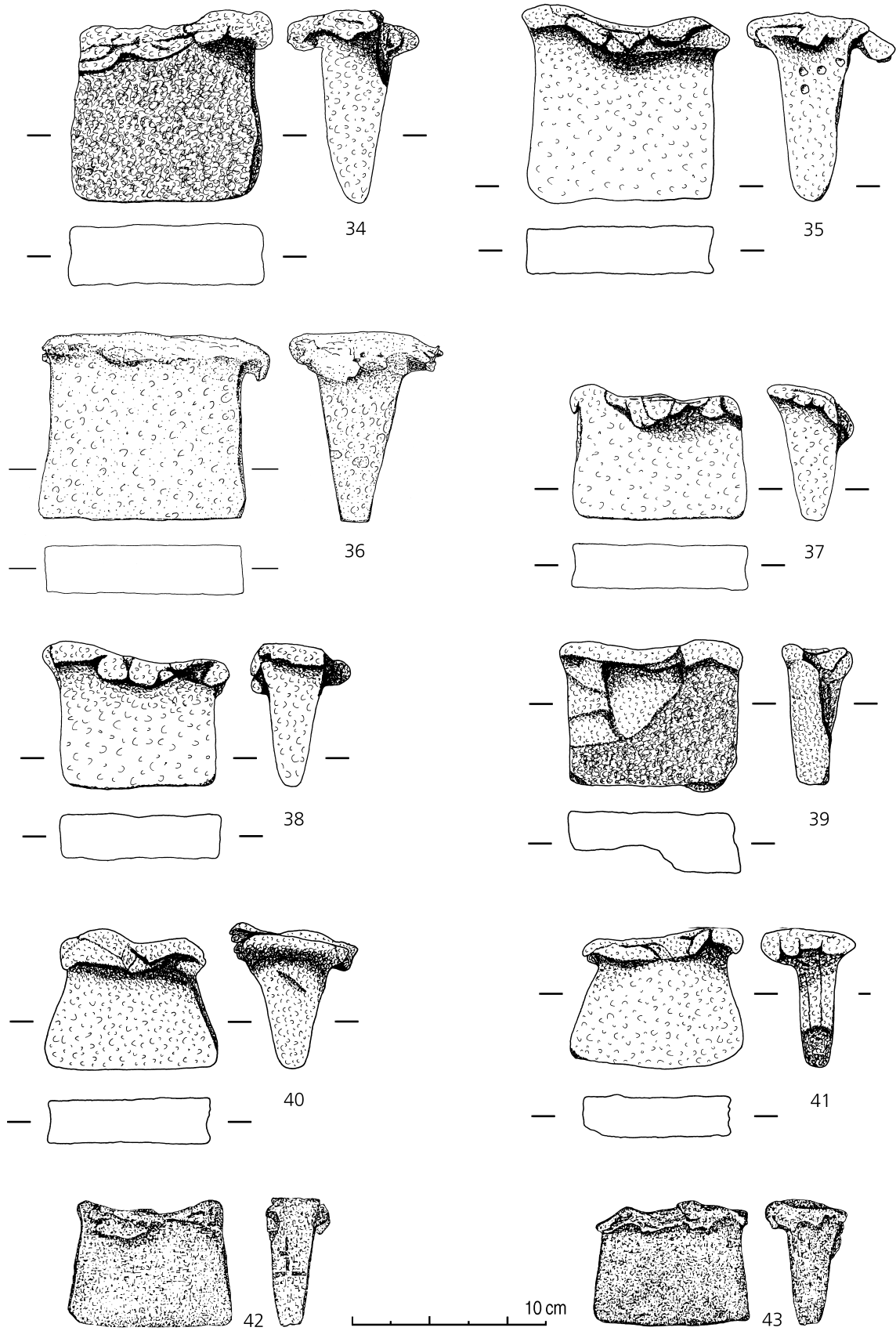
32



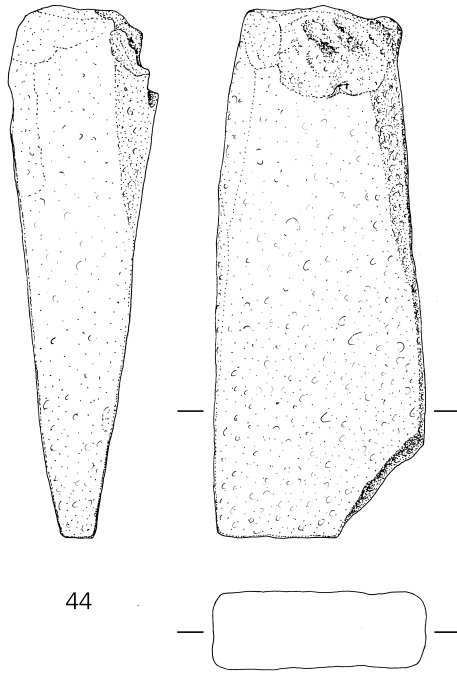
33

10 cm

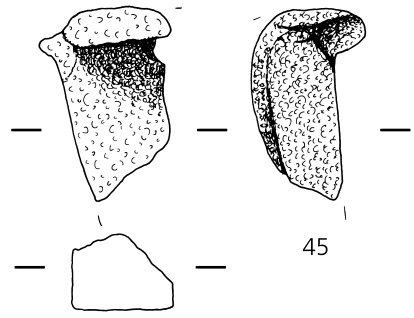
Funde aus den Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 27-33 Keile aus Eisen.



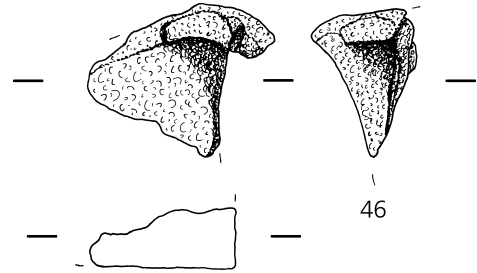
Funde aus den Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 34-39 breite Keile. – 40-43 Trapezfrmige Keile.



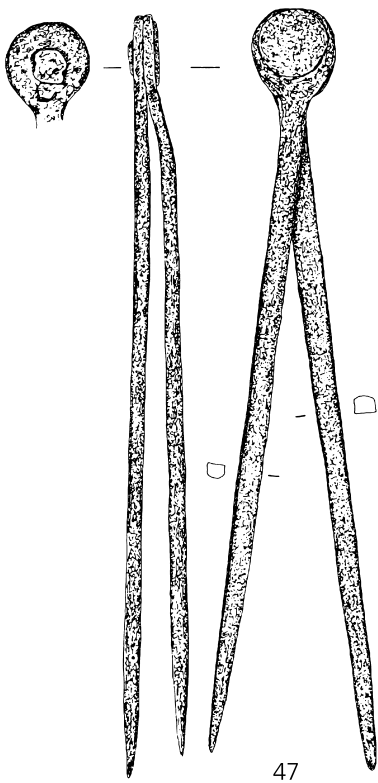
44



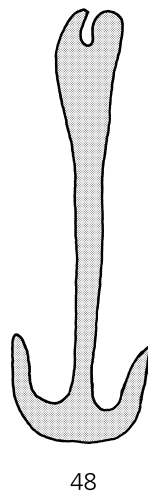
45



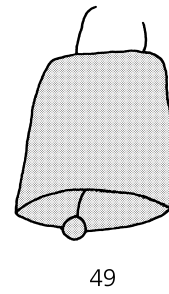
46



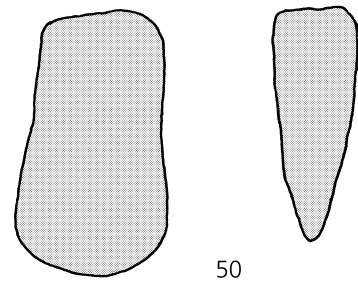
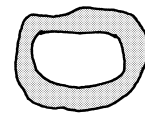
47



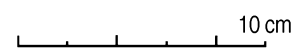
48



49



50

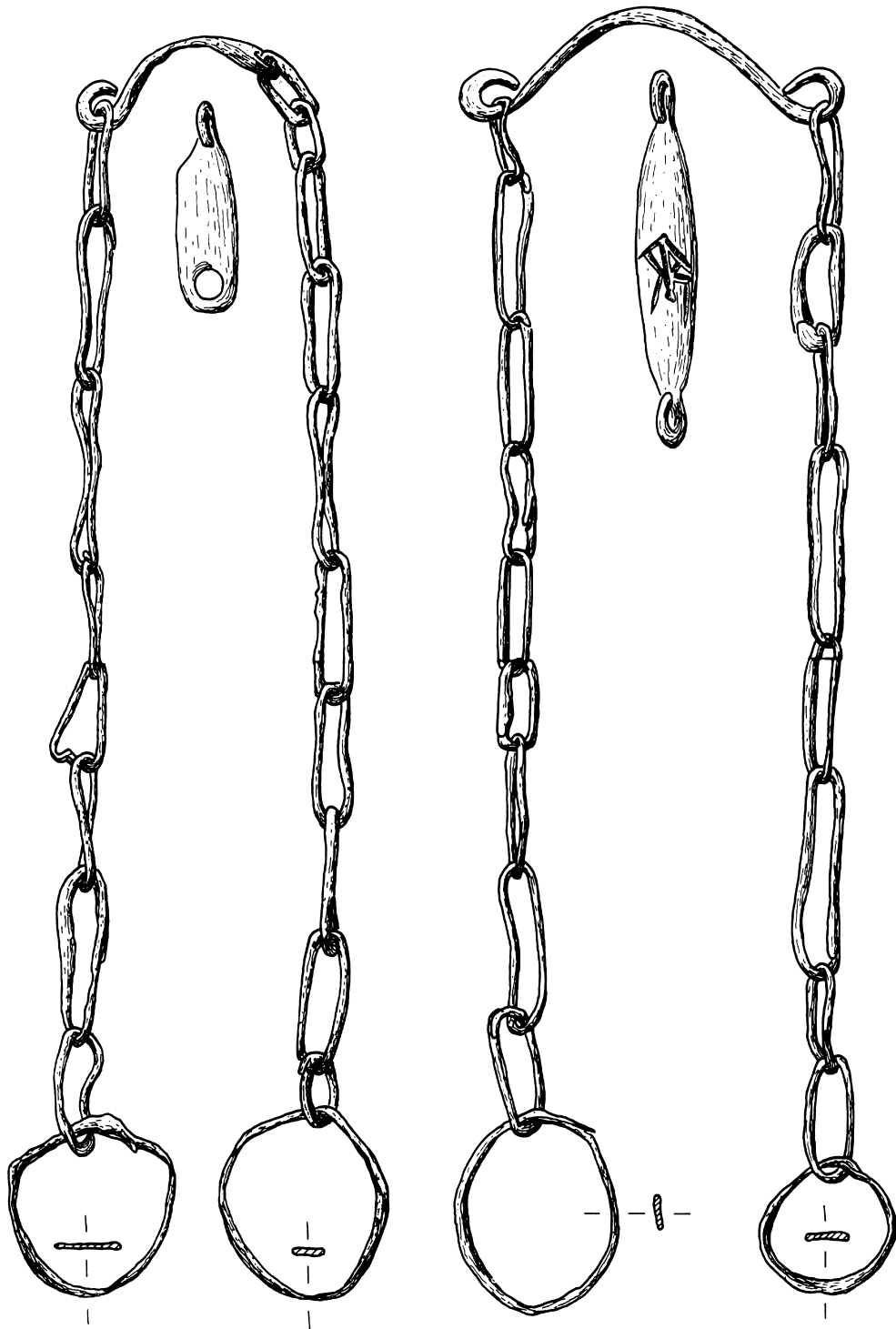


Funde aus den Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 44 Keil. – 45-46 Keilfragmente. – 47 Stechzirkel. – 48 Achsnagel. – 49 Glocke. – 50 Tllenbeil.



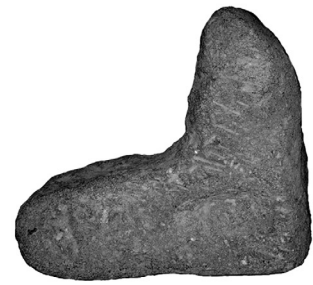
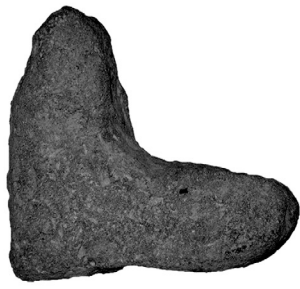
10 cm

Mayen, Grube Jos. Bell, Distr. Laufgraben. – Kat.-Nr. 3-51: Eisernes Tragekettenpaar.



10 cm

Niedermendig, Bernhard Keibs Lay. Eisernes Tragekettenpaar, Vergleichsfund zu Kat.-Nr. 3-51 (Mangartz 1998b, Abb. 4).

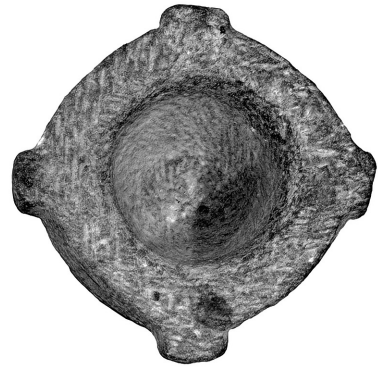


52



53 (ohne Maßstab)

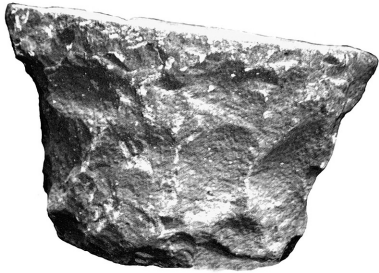
Funde aus den Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 52 L-frmiger Stein, als Widerlager. – 53 »Bnk«.



54



55

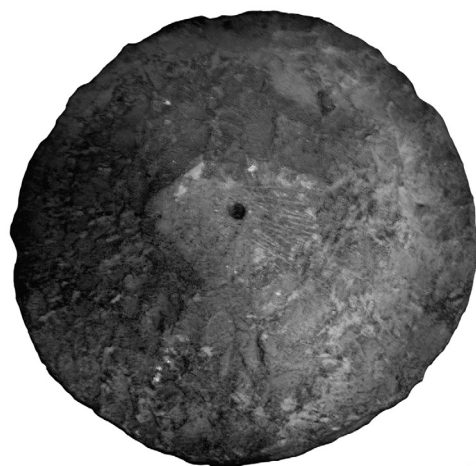


56





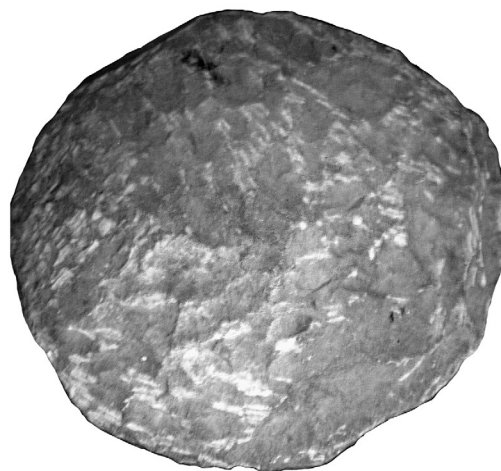
57



58



59



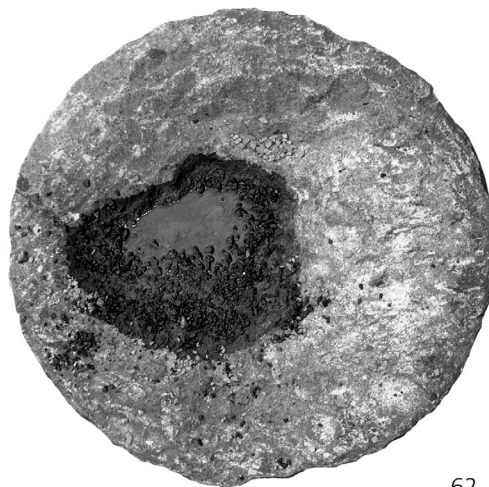
60



0,5 m



61



62



Funde aus den Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen (vgl. Katalog 3). – 61-63 Rohlinge fr Kraftmhlsteine aus Basaltlava.



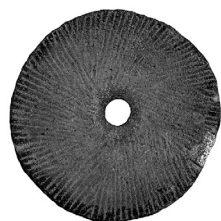
63



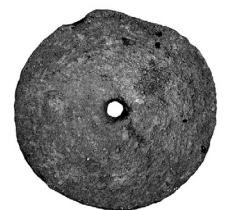
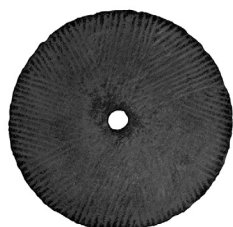
66



64



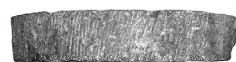
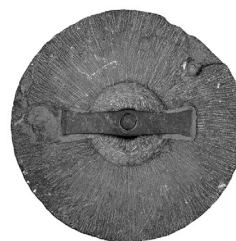
67



65



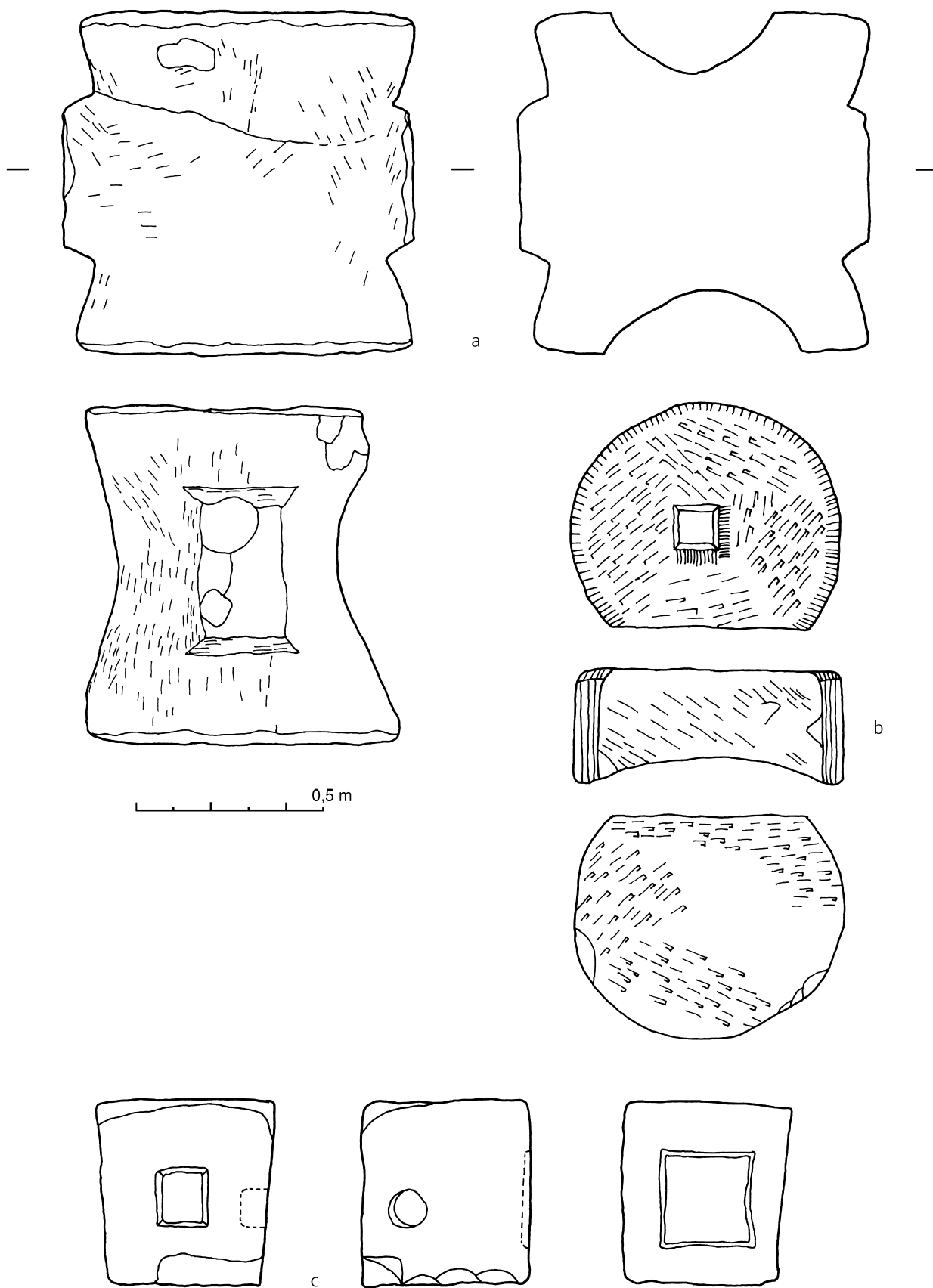
68



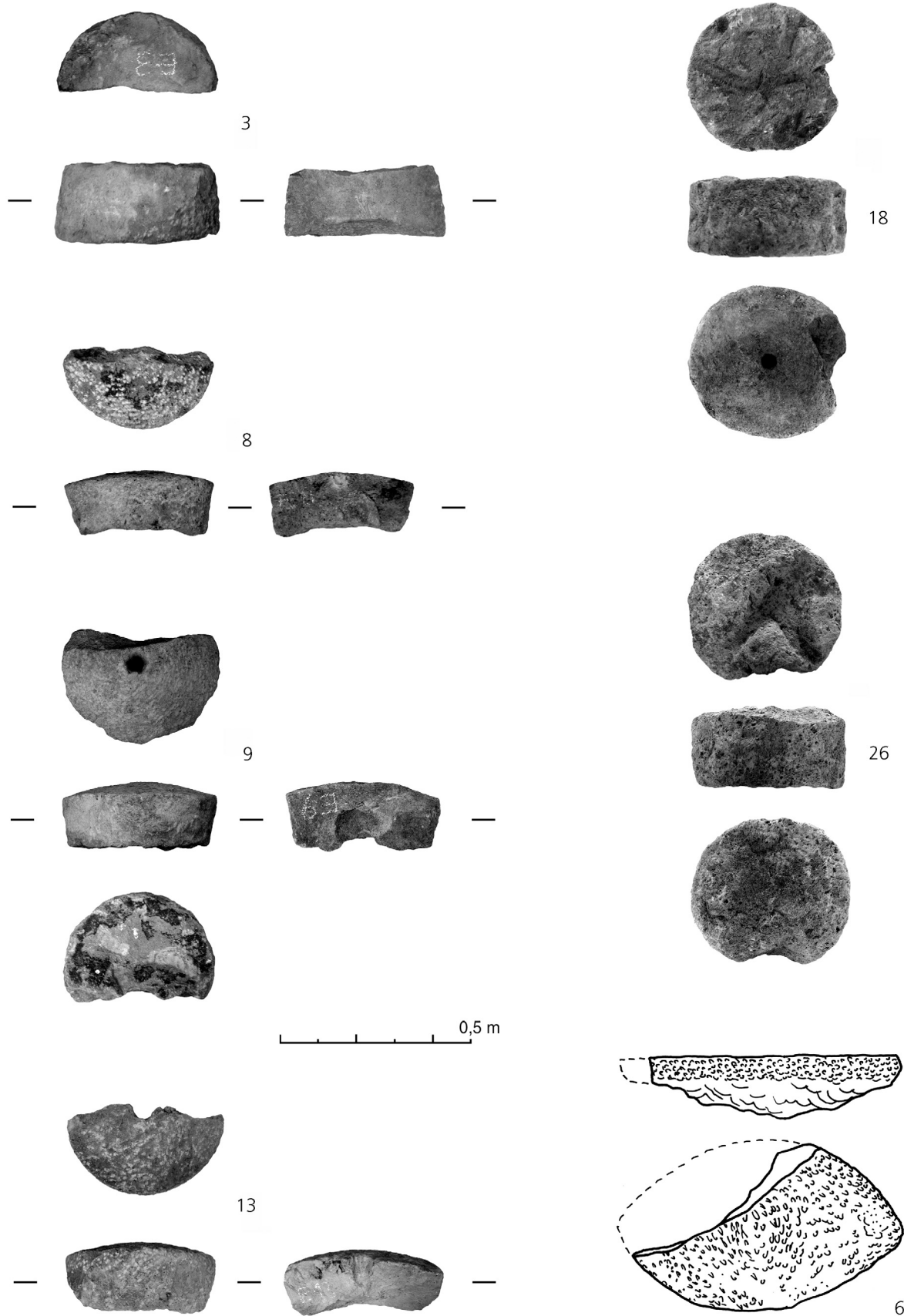
69

0,5 m

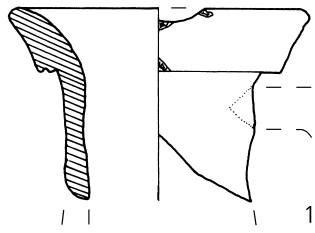
Funde aus dem Umfeld der Mhlsteinbrchen des Bellerberg-Vulkans bei Mayen, hauptschlich wohl aus dem Mayener vicus (vgl. Katalog 3). – 63-68 Handmhlsteine aus Basaltlava. – 69 Moderner Nachbau eines Handmhlsteins.



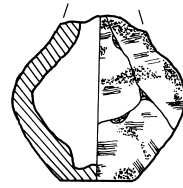
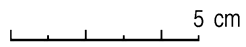
Andernach, Hochstraße (vgl. Anhang zu Katalog 3), a-c Basaltlava. – a Rohling für Kraftmühlstein, Läufer pompejanischen Typs. – b Rohling für den Unterstein einer Kraftmühle. – c »Bänk« in Mehrfachverwendung.



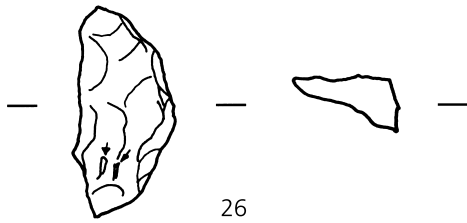
Ettringen, Grundstück Keuser, Schottergrube Rick (vgl. Katalog 2). Keltische Handmühlsteine und ein Reibstein, Basaltlava.



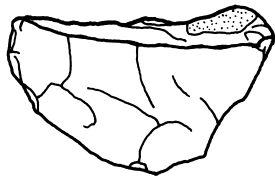
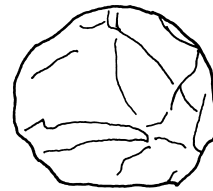
1



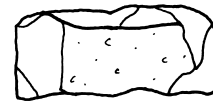
2



26

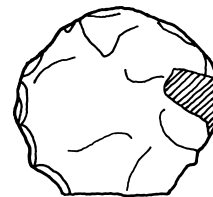
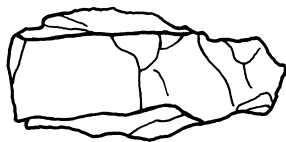


27

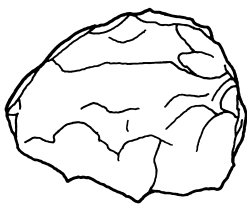


30

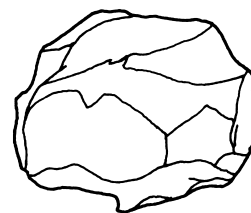
"Kruste"



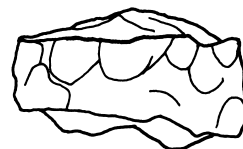
Keiltasche



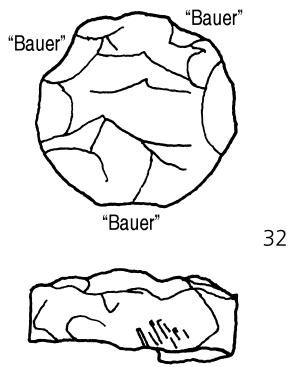
28



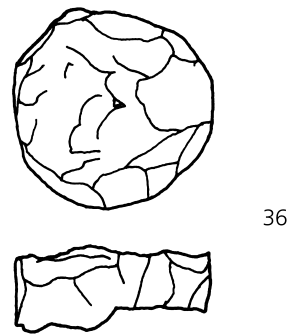
31



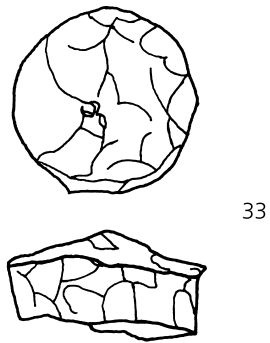
Mayen, Grubenfeld, Silbersee, Bruch 1 (vgl. Katalog 1-66a und Katalog 4). – 1 Randpartie eines Einhenkelkrugs. – 2 Miniaturgefäß.
 – 26-28, 30-31 Rohlinge für Handmühlsteine.



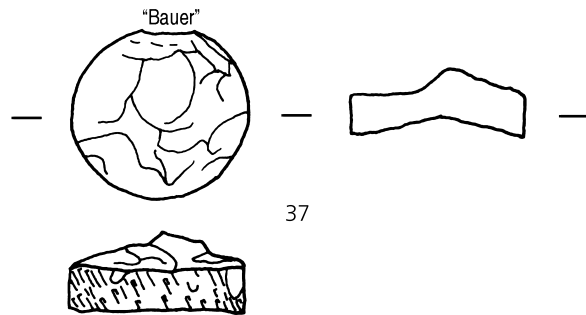
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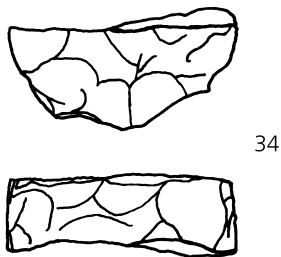
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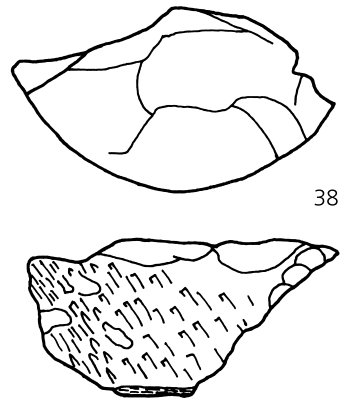
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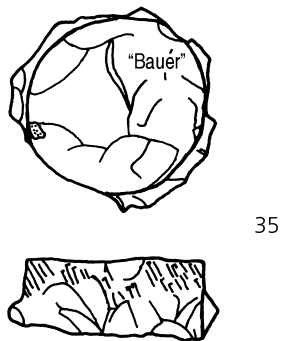
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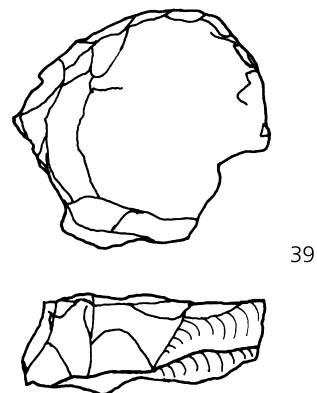
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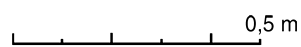
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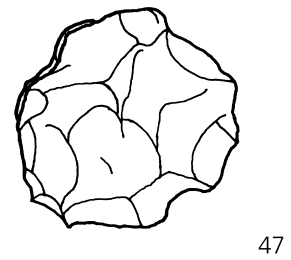
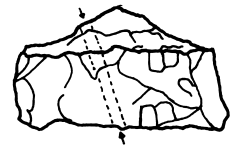
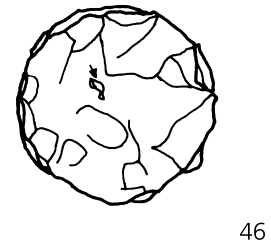
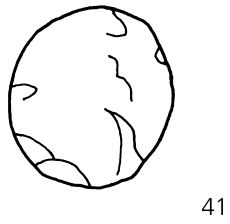
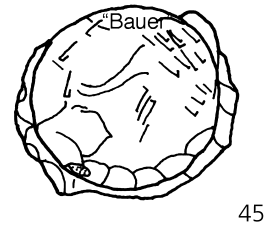
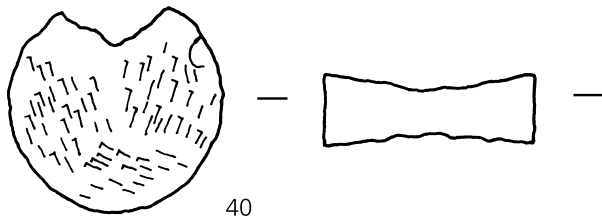


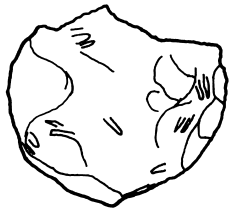
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39



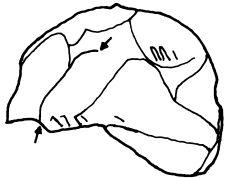




48



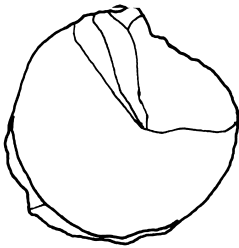
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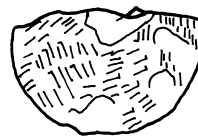
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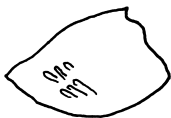
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50



54



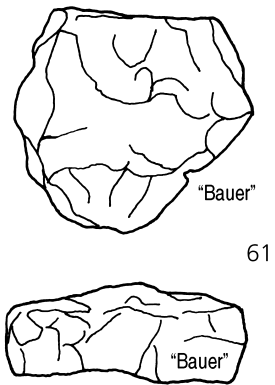
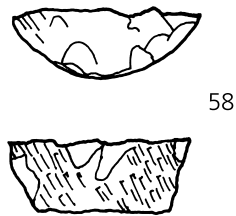
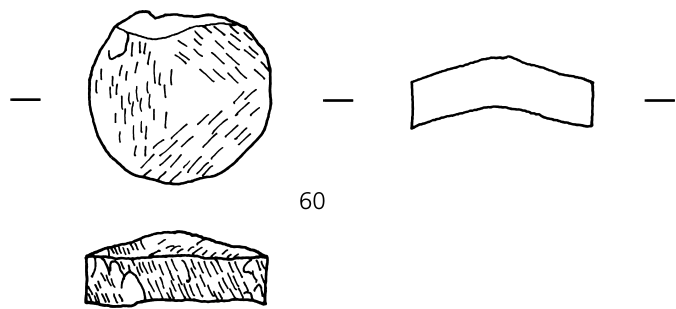
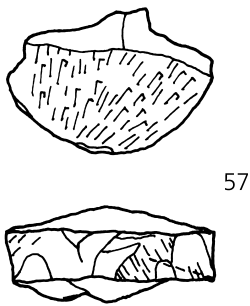
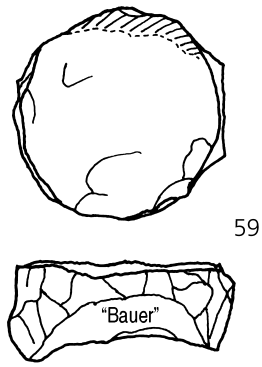
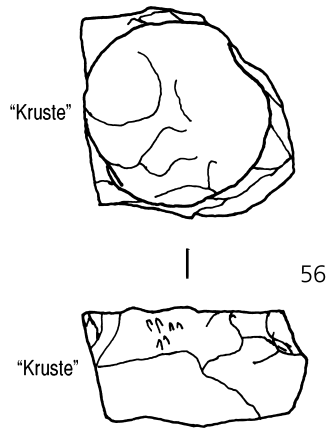
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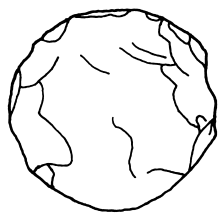


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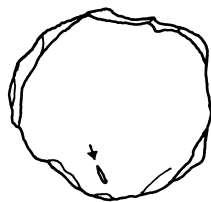


0,5 m

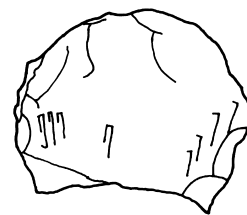
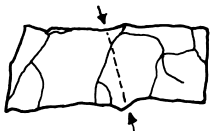




62



63



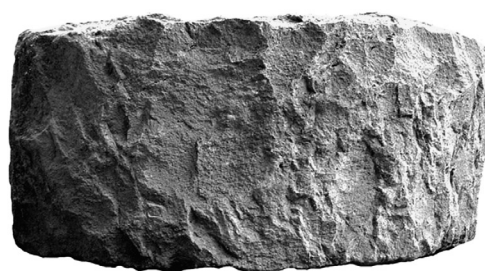
64



69

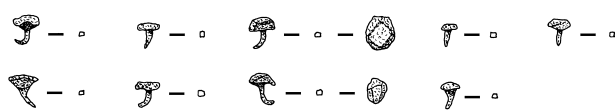
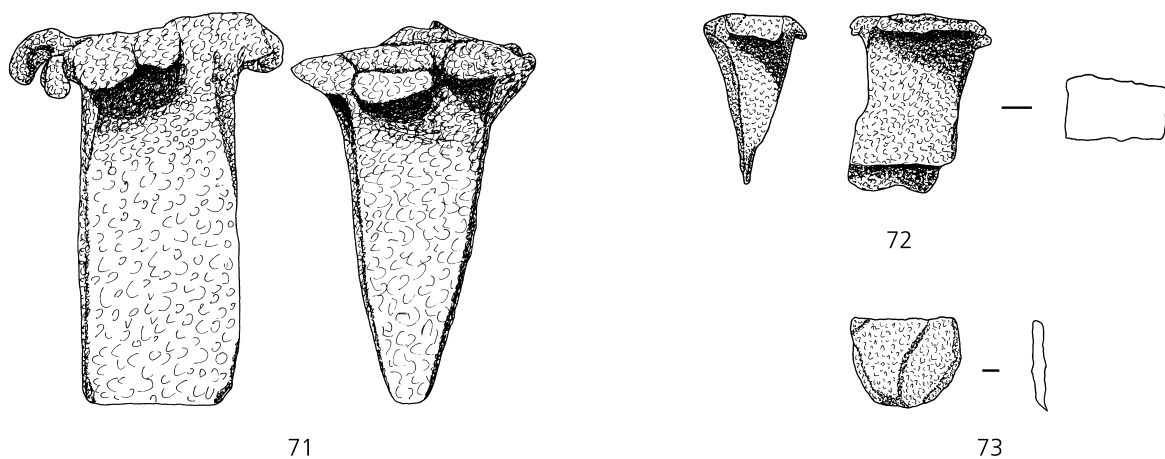


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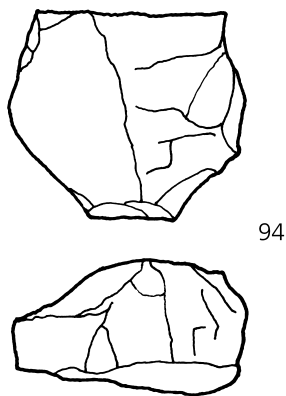
0,5 m

Mayen, Grubenfeld, Silbersee, Bruch 1 (vgl. Katalog 1-66a und Katalog 4). – 62-64 Rohlinge für Handmühlsteine aus Basaltlava. – 69-70 Rohlinge für Kraftmühlsteine aus Basaltlava.

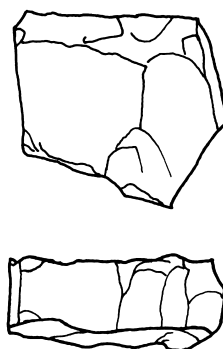


74

10 cm



94



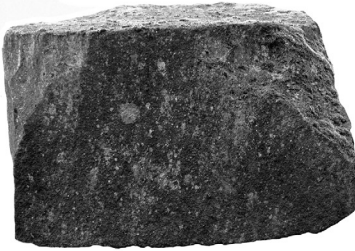
96

0,5 m

Mayen, Grubenfeld, Silbersee. 71-74 Bruch 1 (vgl. Katalog 1-66a und Katalog 4). 94. 96 Bruch 2 (vgl. Katalog 1-65a und Katalog 4), 71-74 Eisen, 94. 96 Basaltlava. – 71 Keil. – 72 Keilfragment. – 73 Blechlamelle für Keil. – 74 Schuhnägel. – 94. 96 Rohlinge für Handmühlsteine.



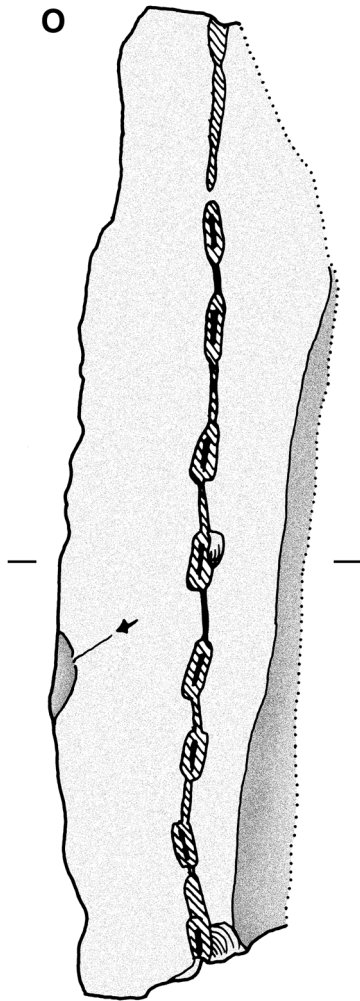
97



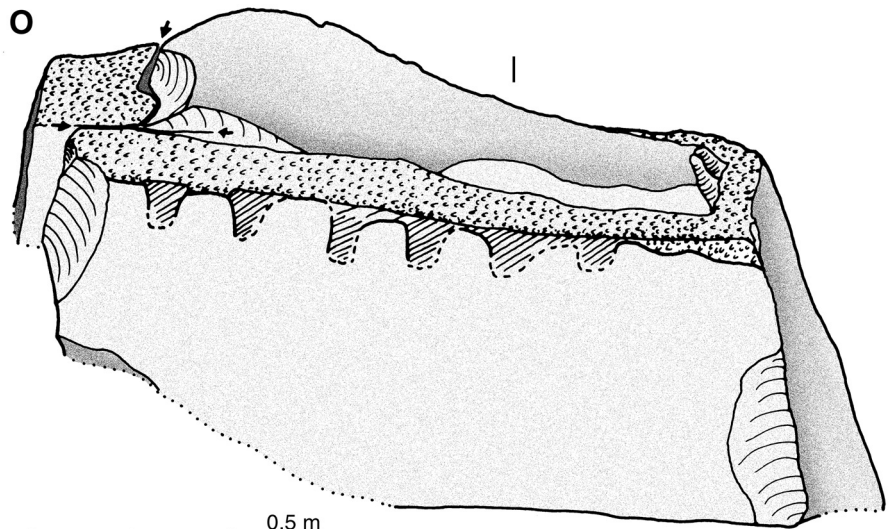
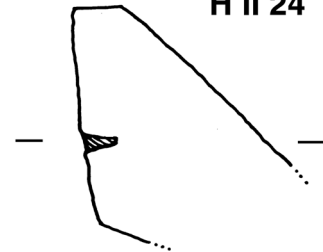
98



0,5 m



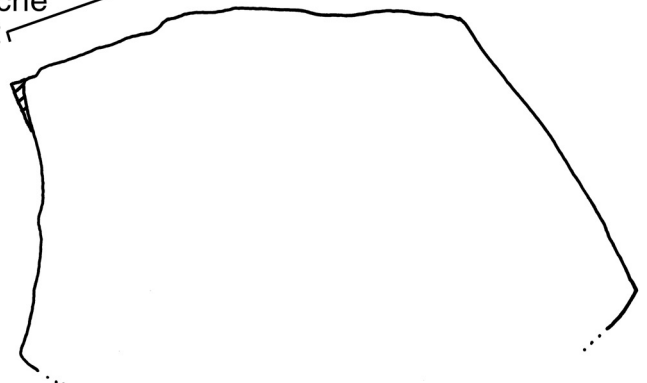
H II 24



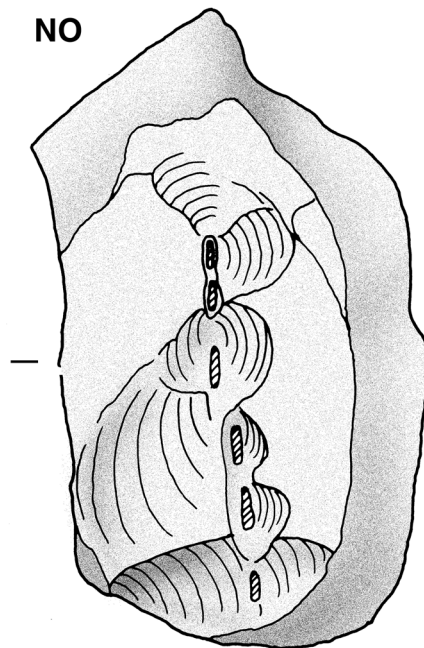
0,5 m

H II 21

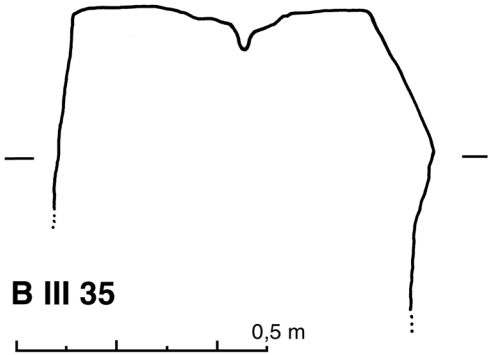
Oberfläche
gespitzt



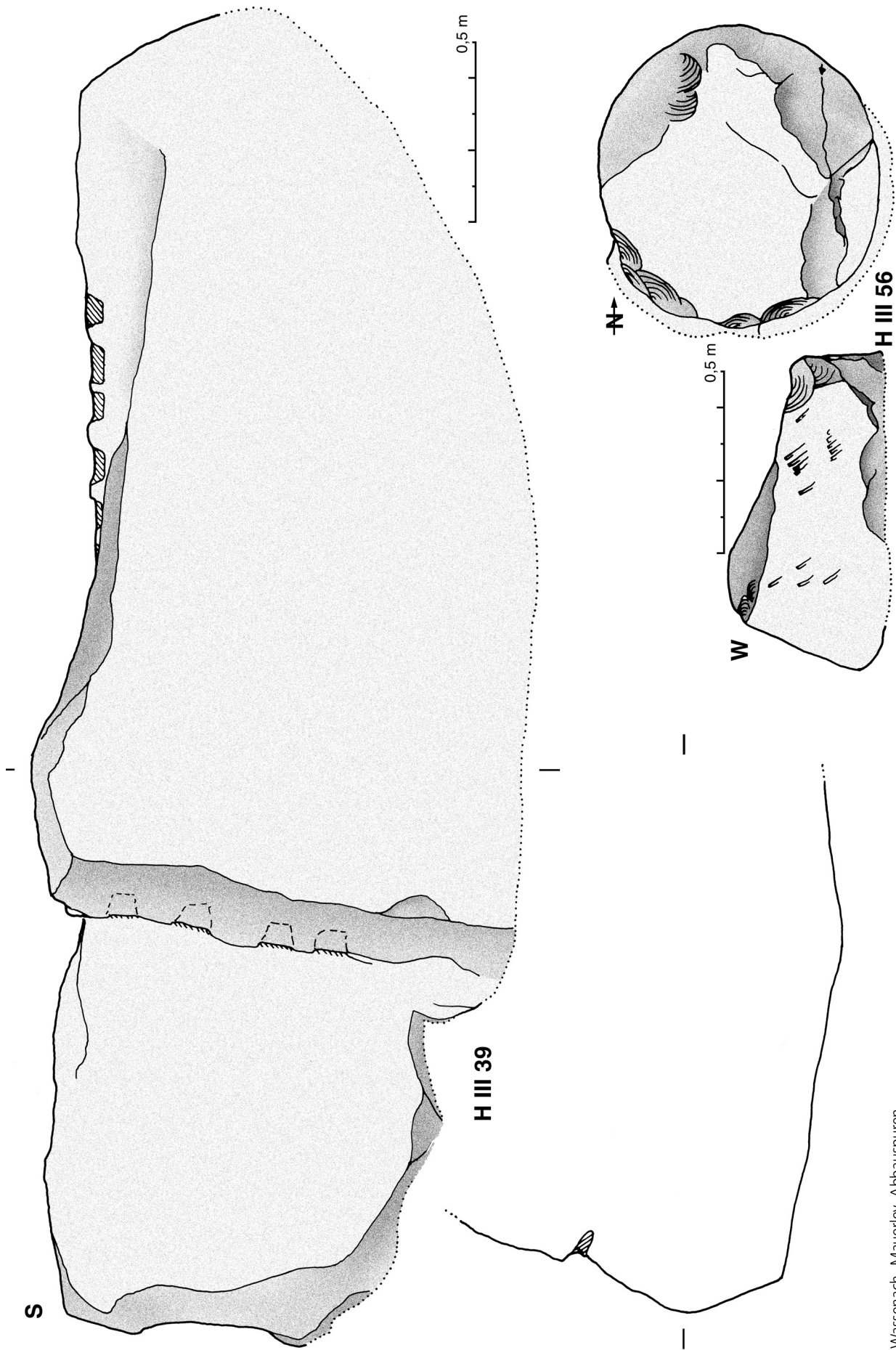
NO



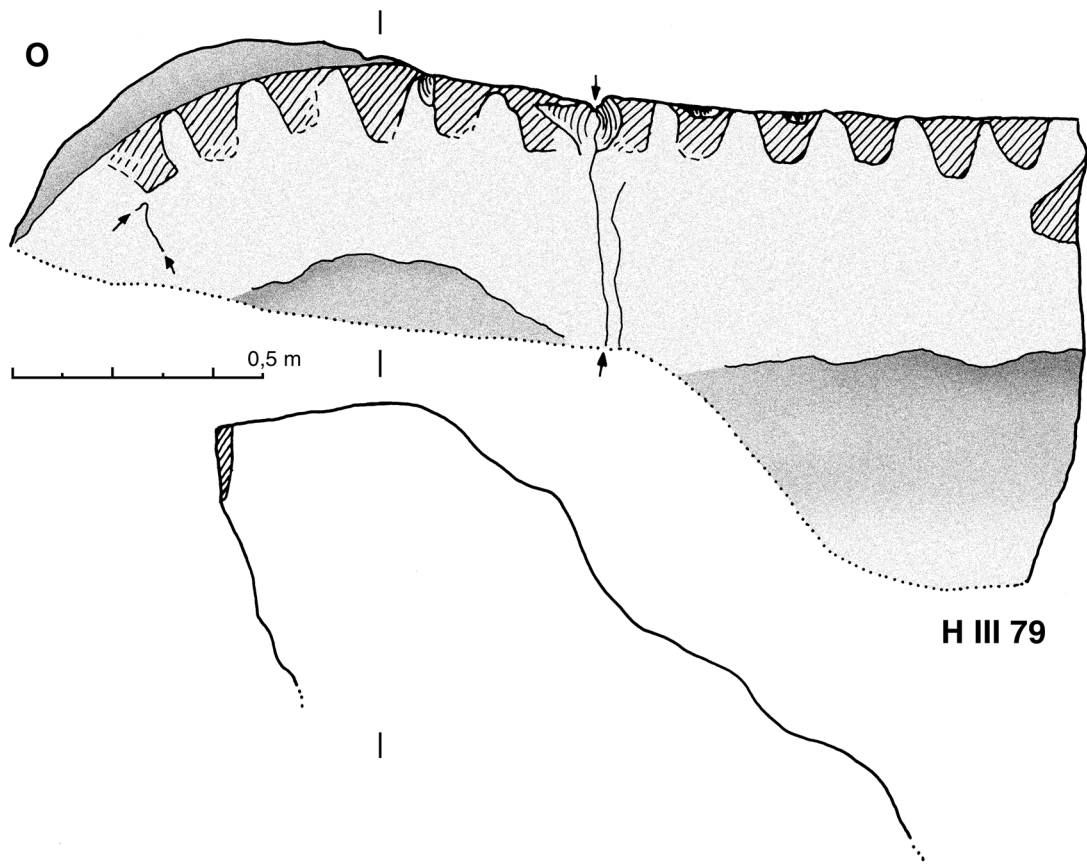
B III 35



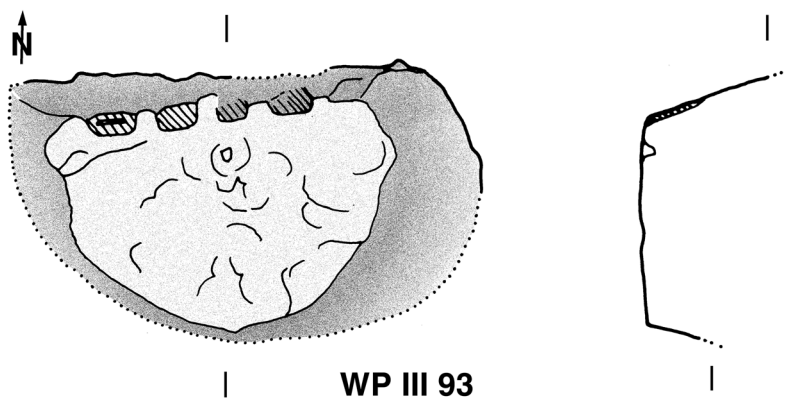
0,5 m



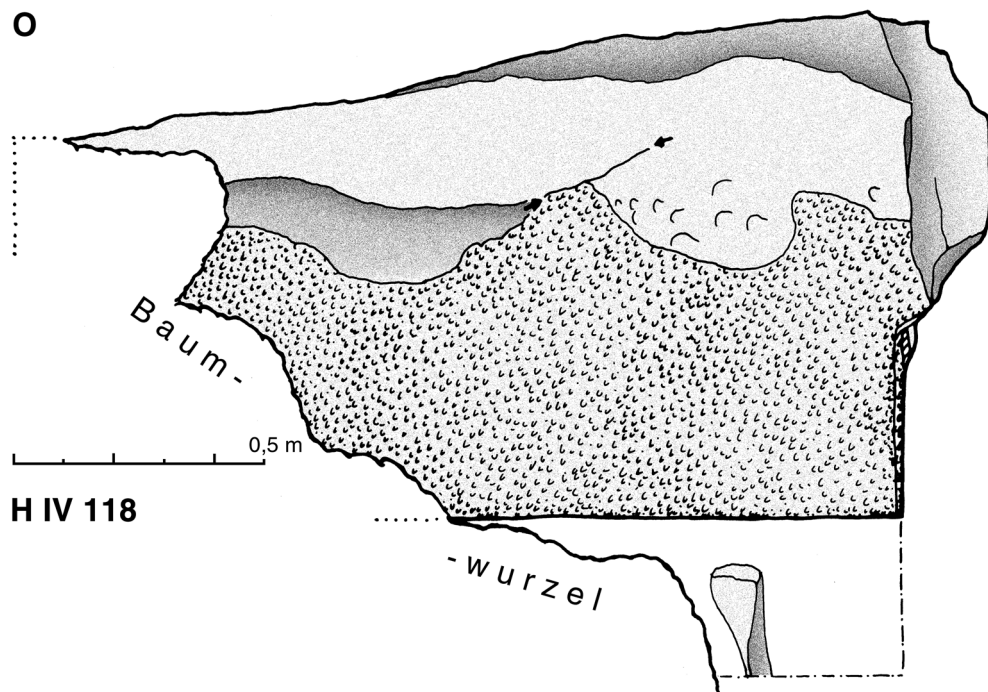
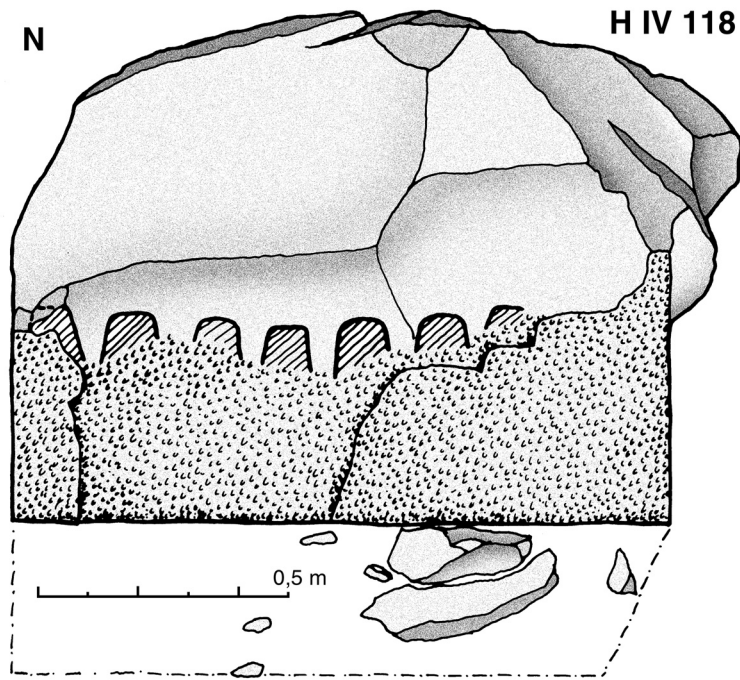
Wassenach, Mauerley. Abbauspuren.



H III 79

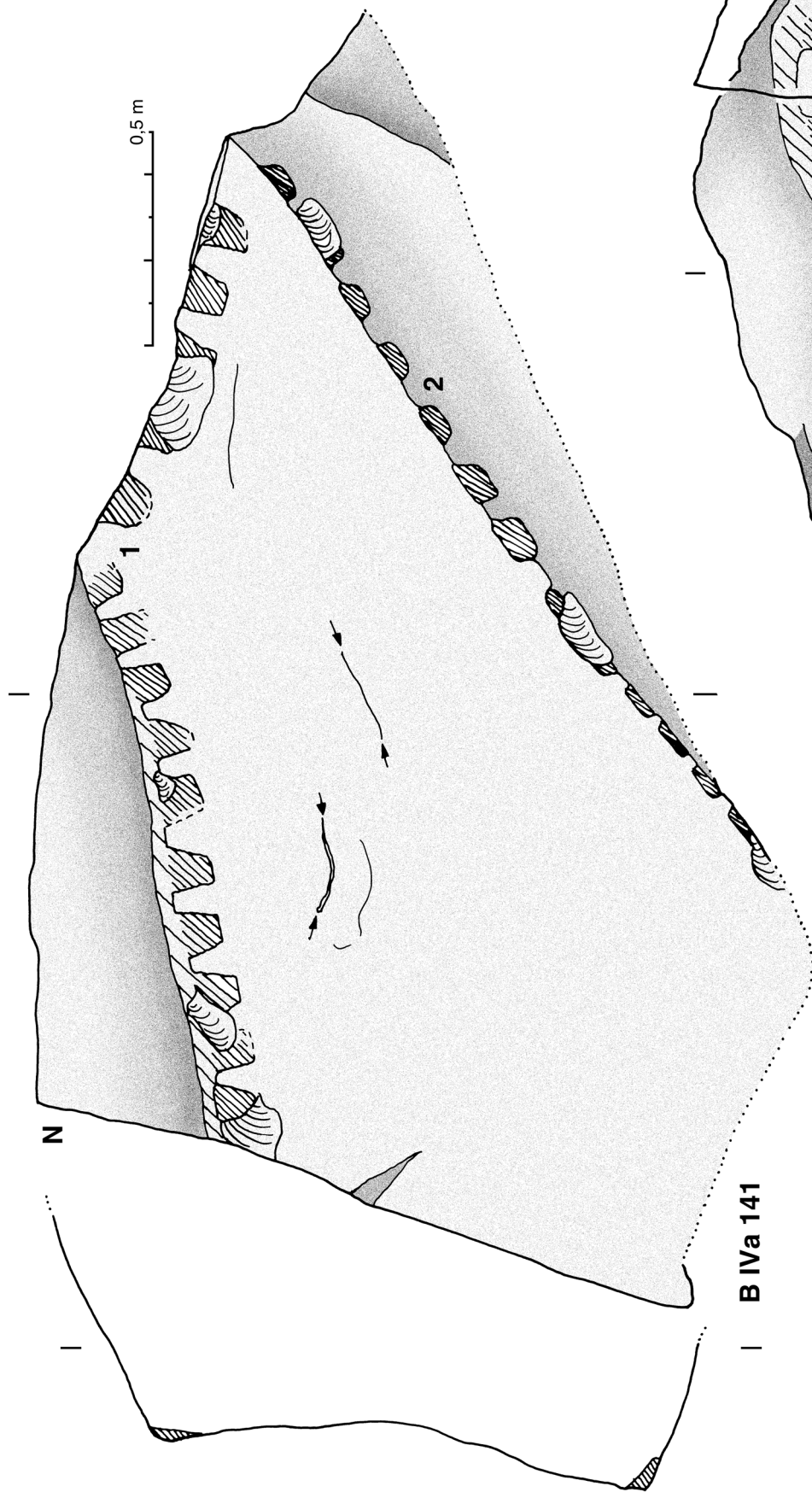


WP III 93

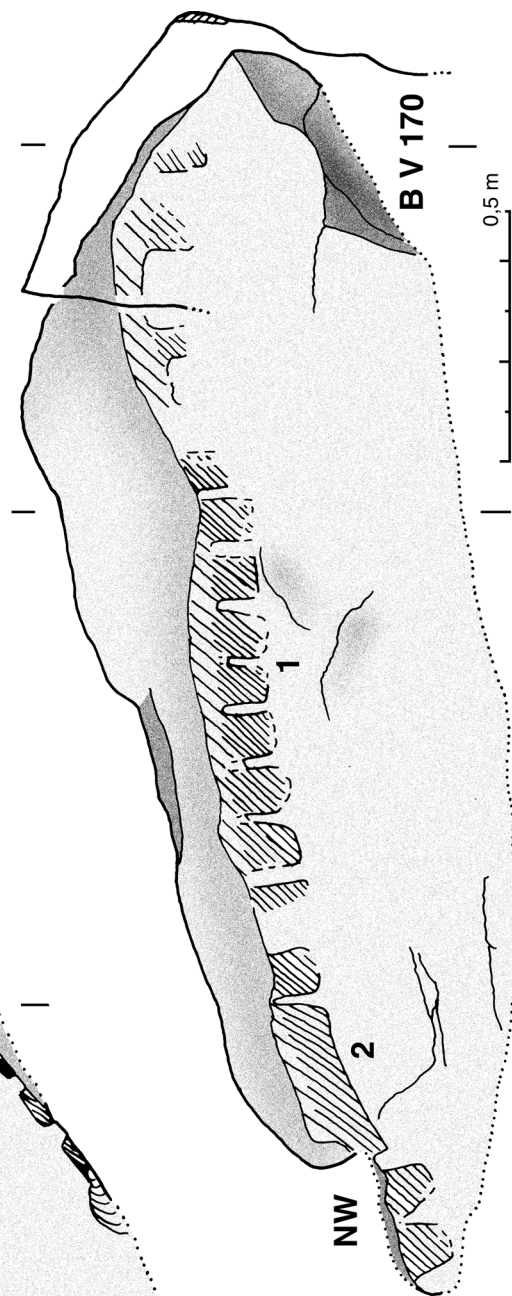




Wassenach, Mauerey. Abbauspuren.

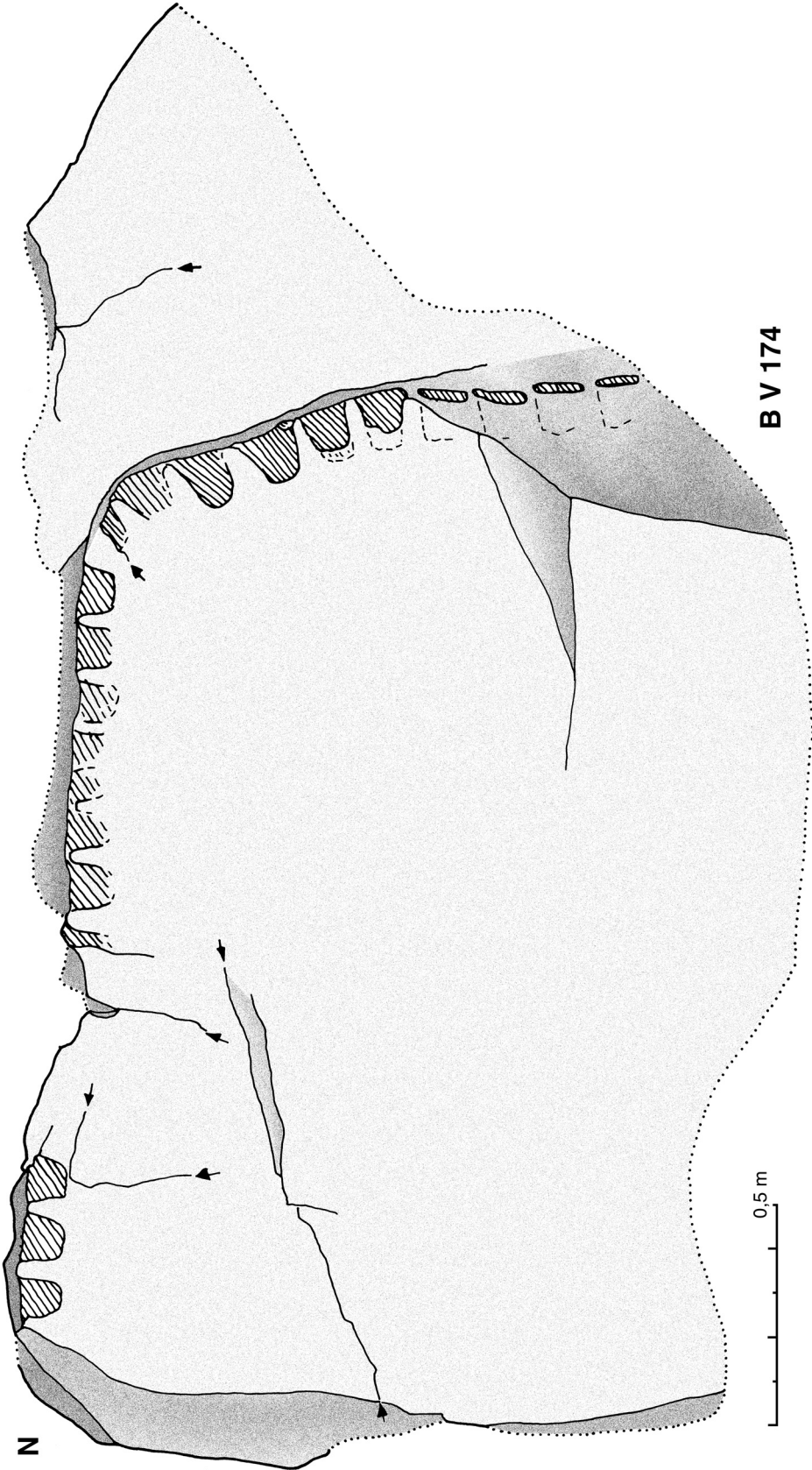


B IVa 141

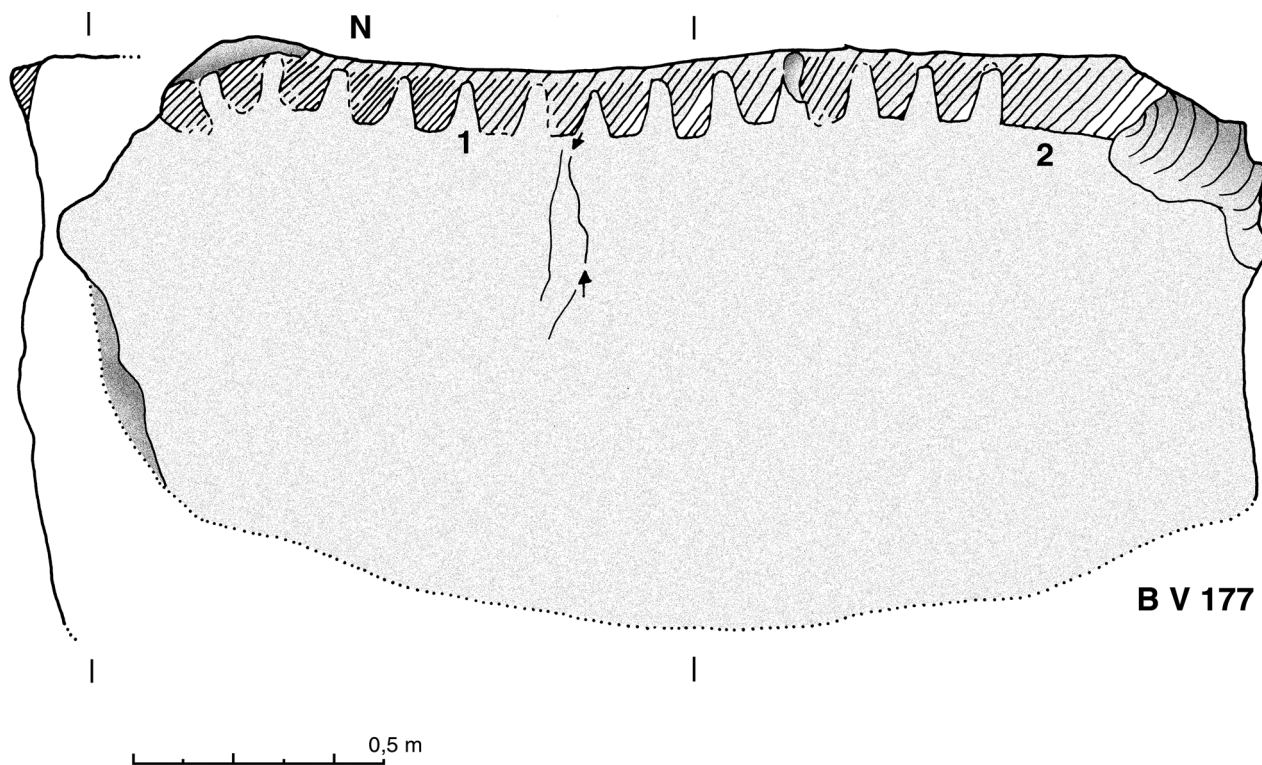


B V 170

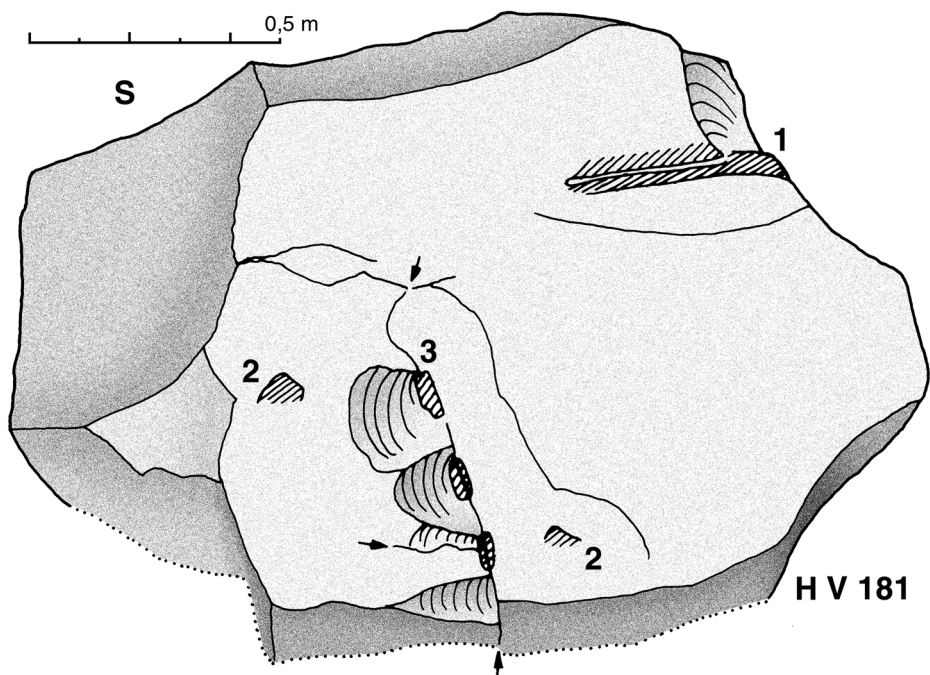
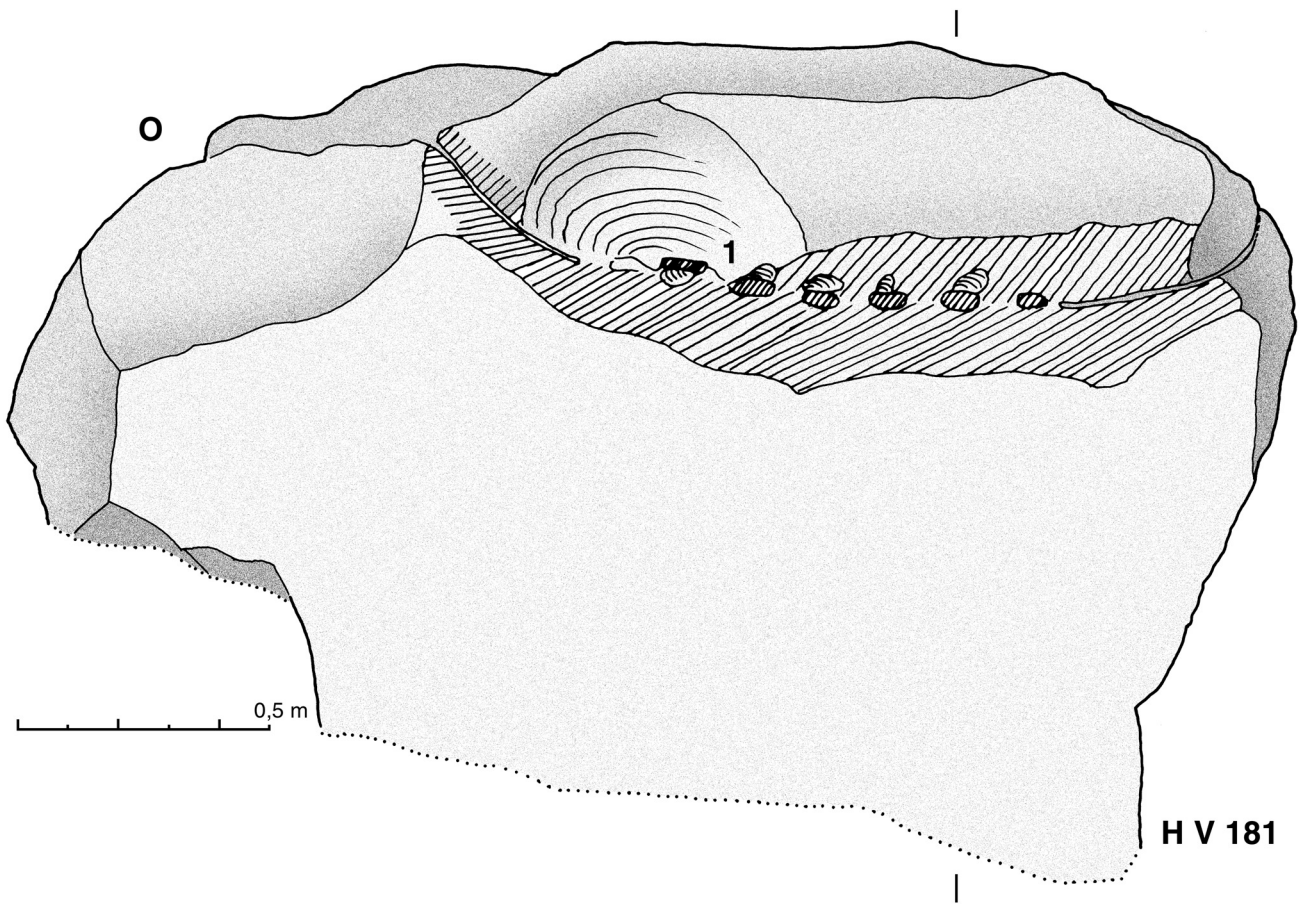
Wassenach, Mauerley. Abbauspuren.

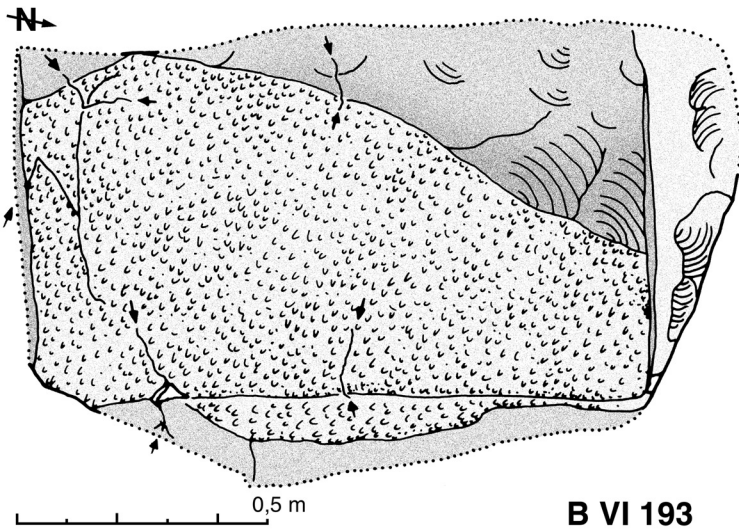


Wassenach, Mauerley. Abbauspuren.

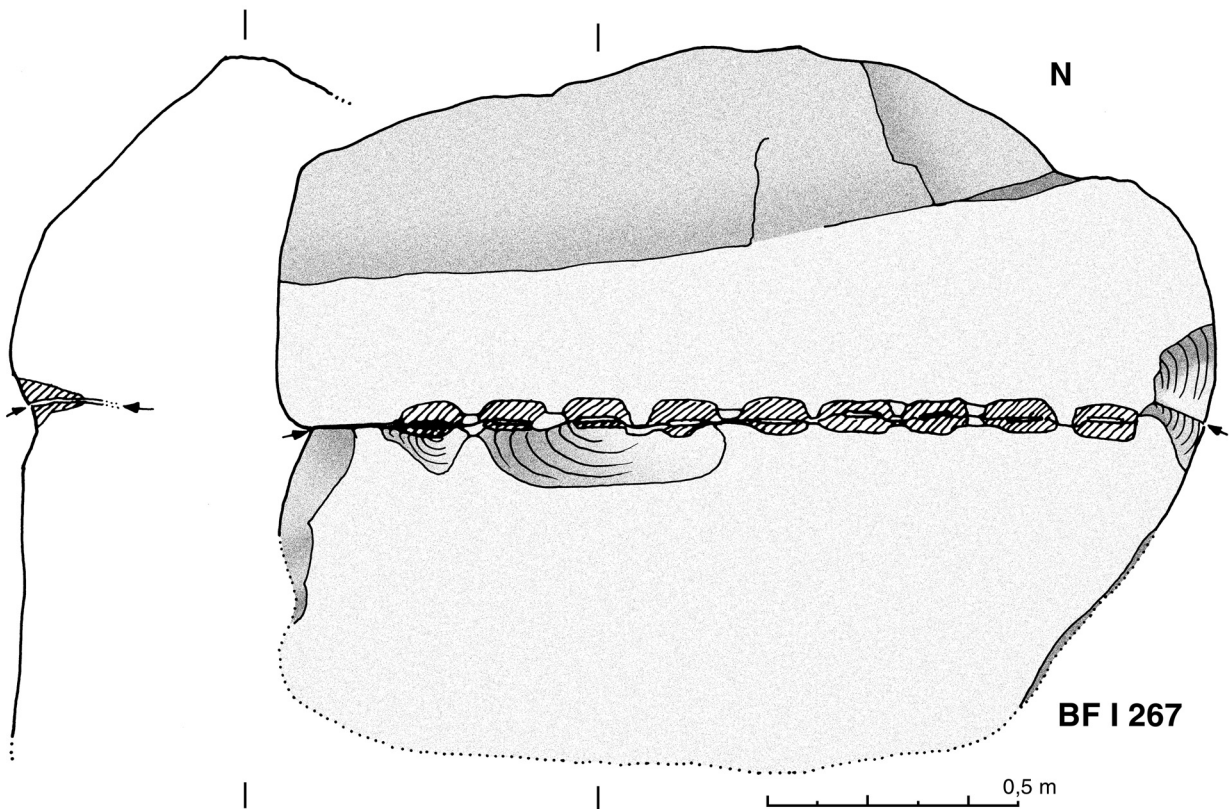
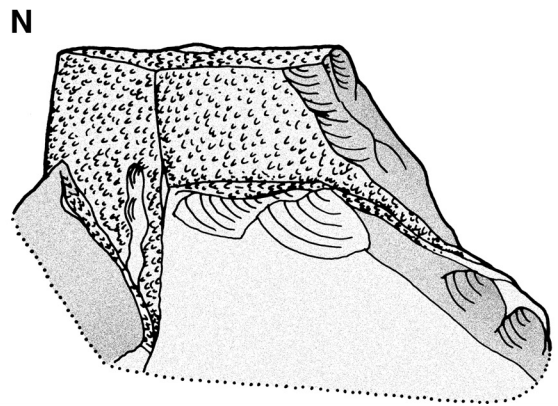
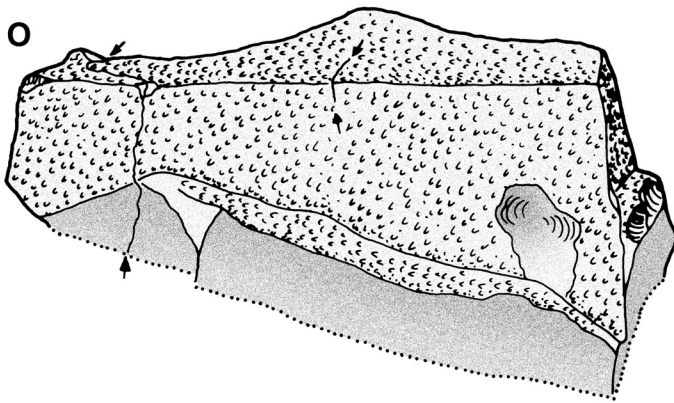


Wassenach, Mauerley. Abbauspuren.

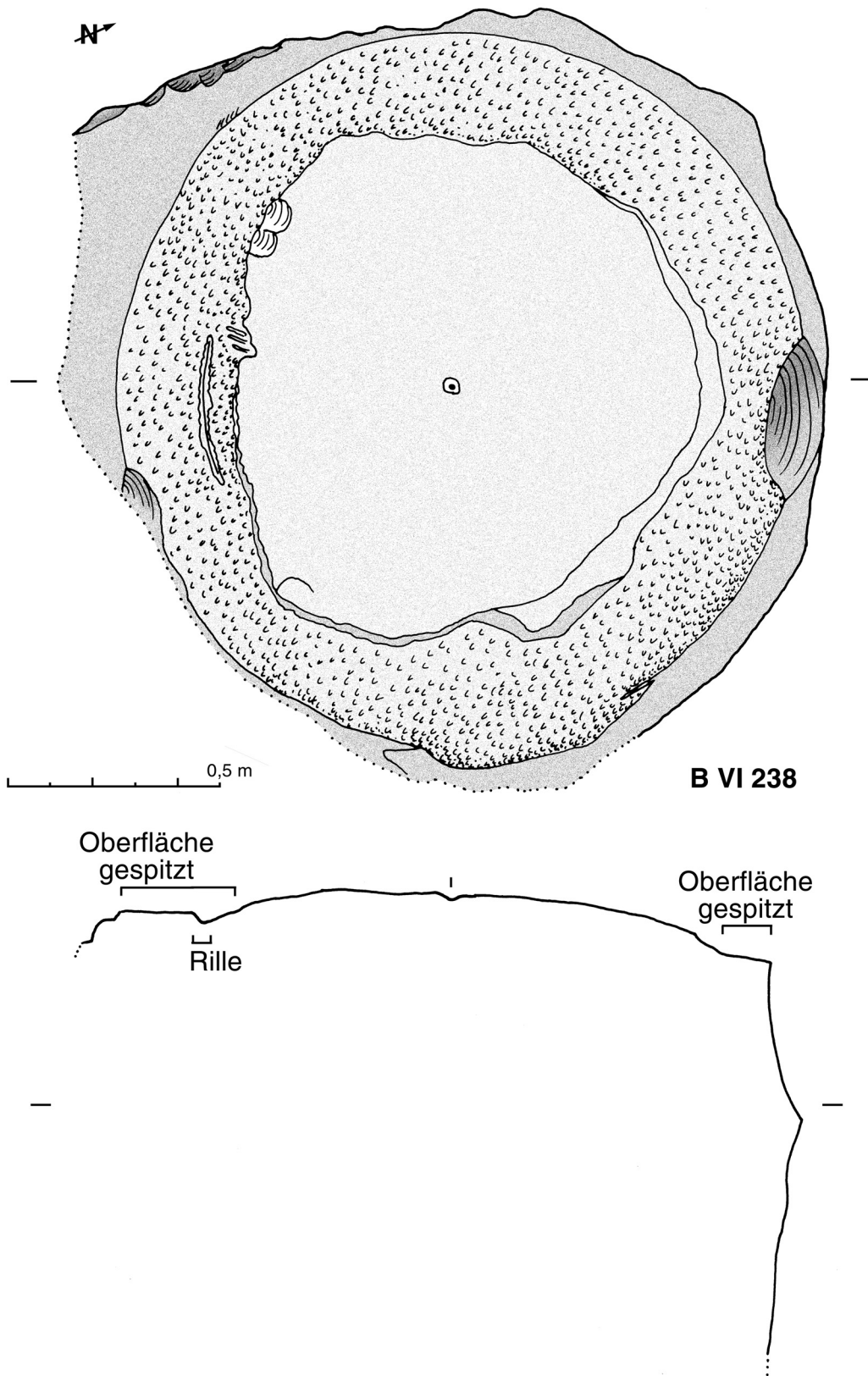


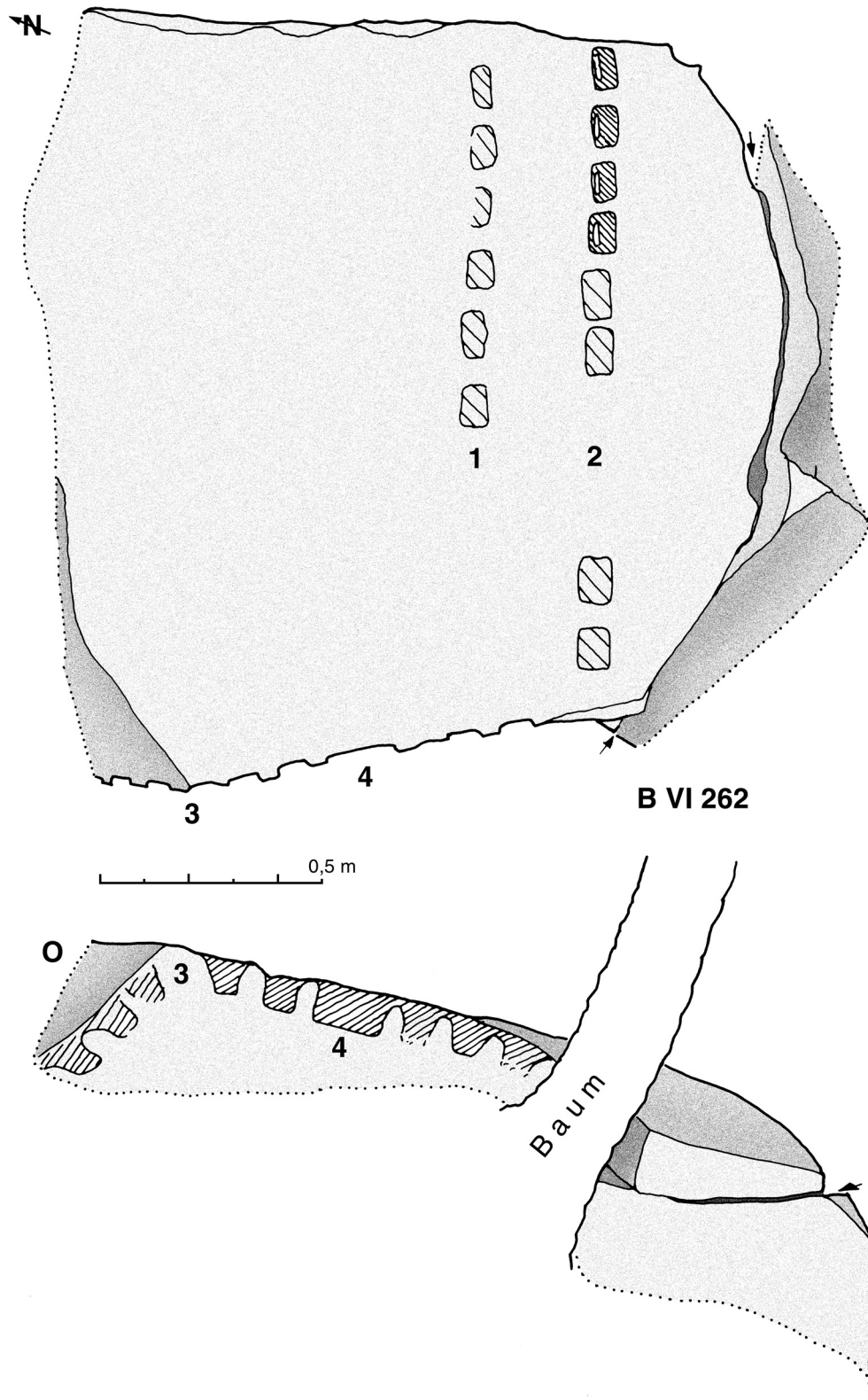


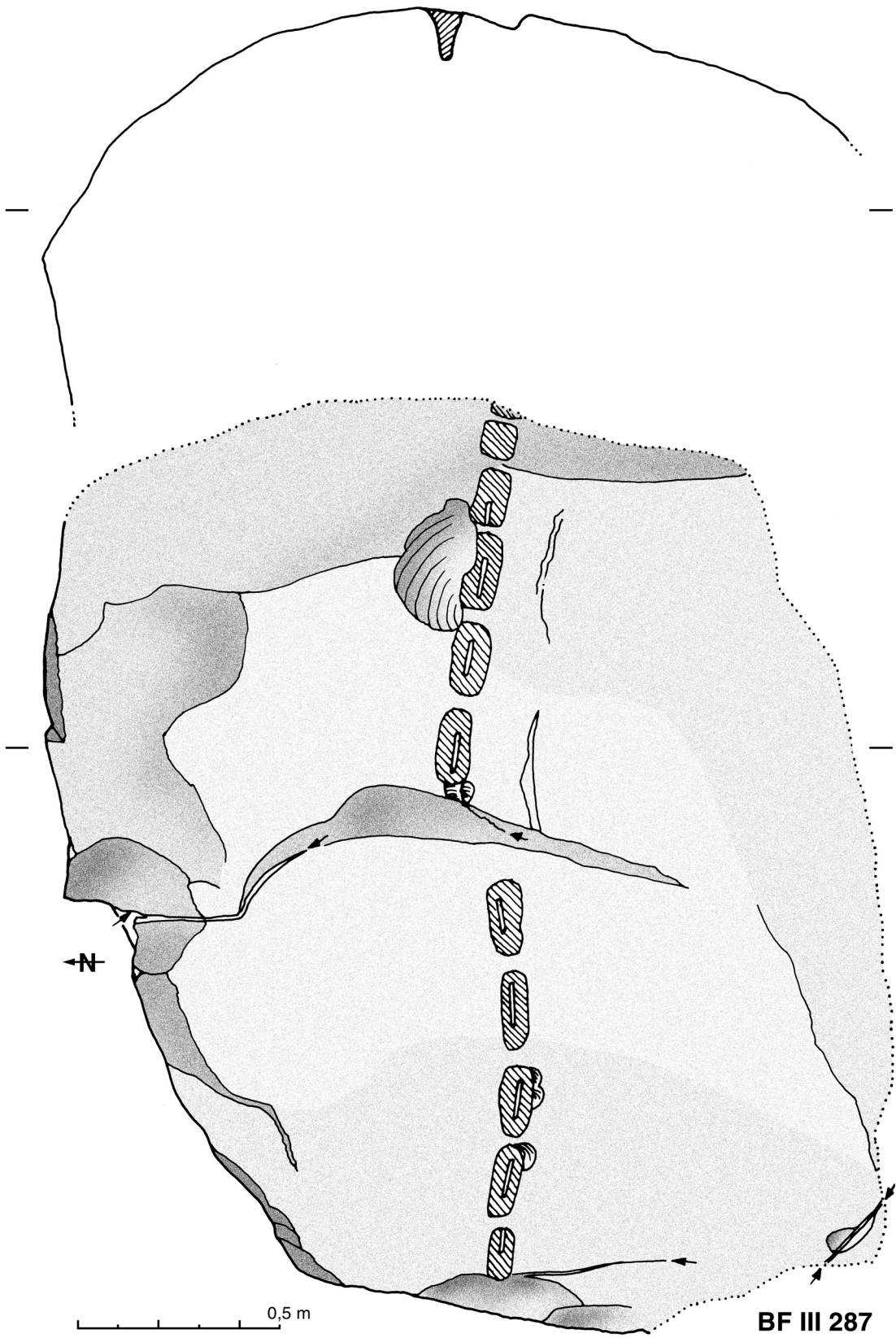
B VI 193



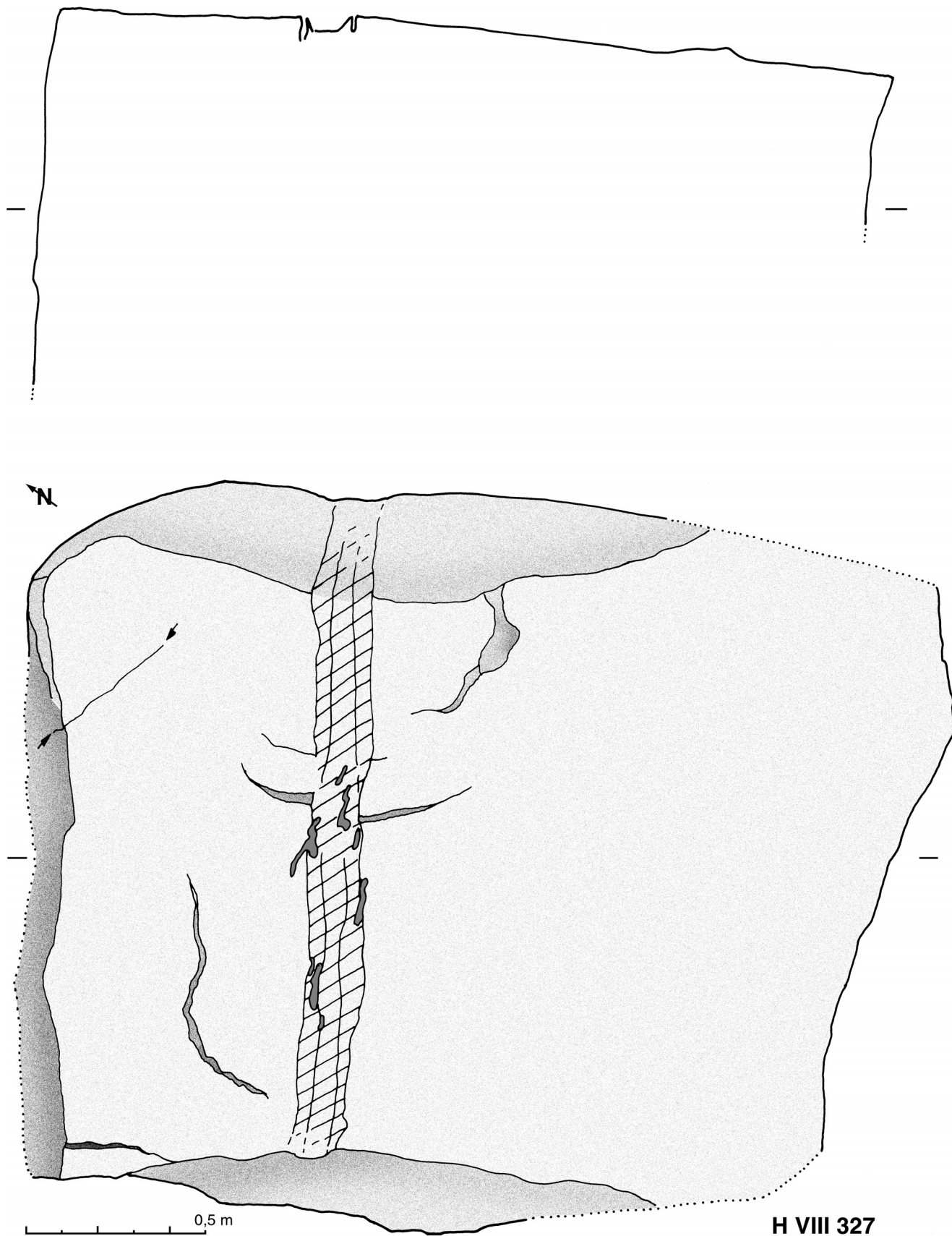
BF I 267





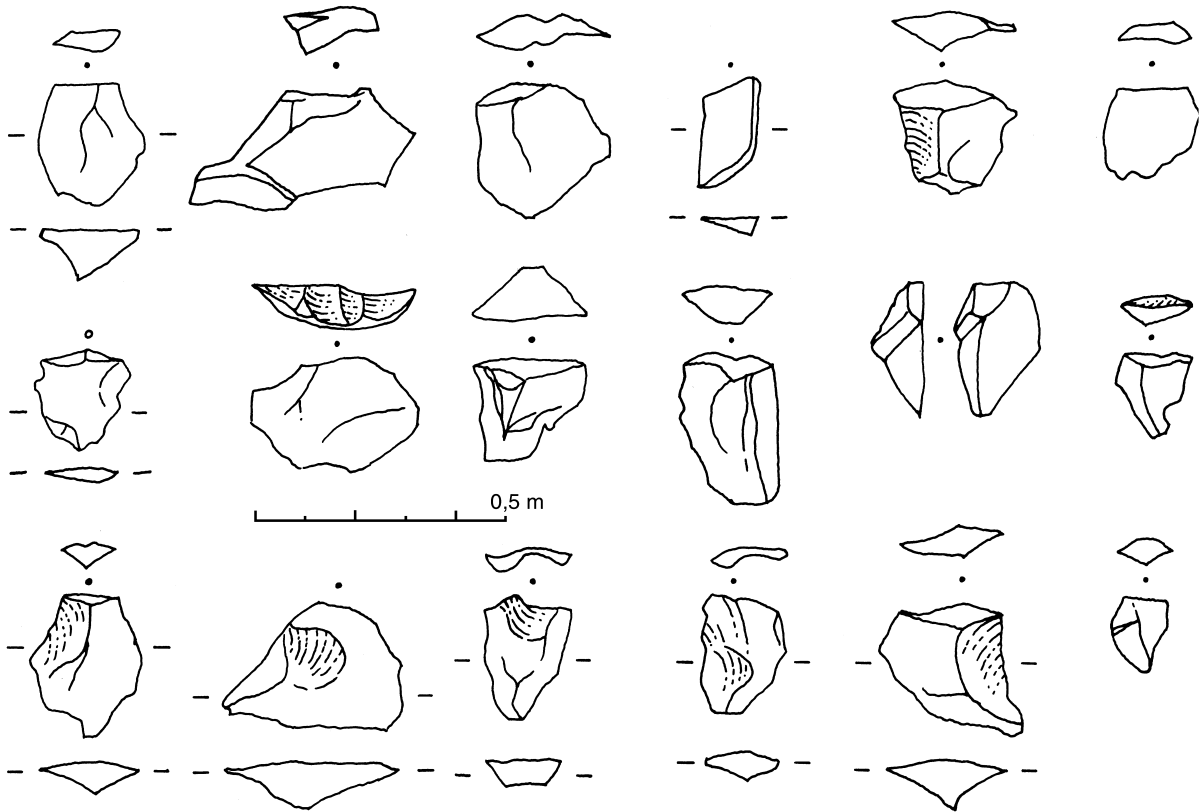


Wassenach, Mauerley. Abbauspuren.

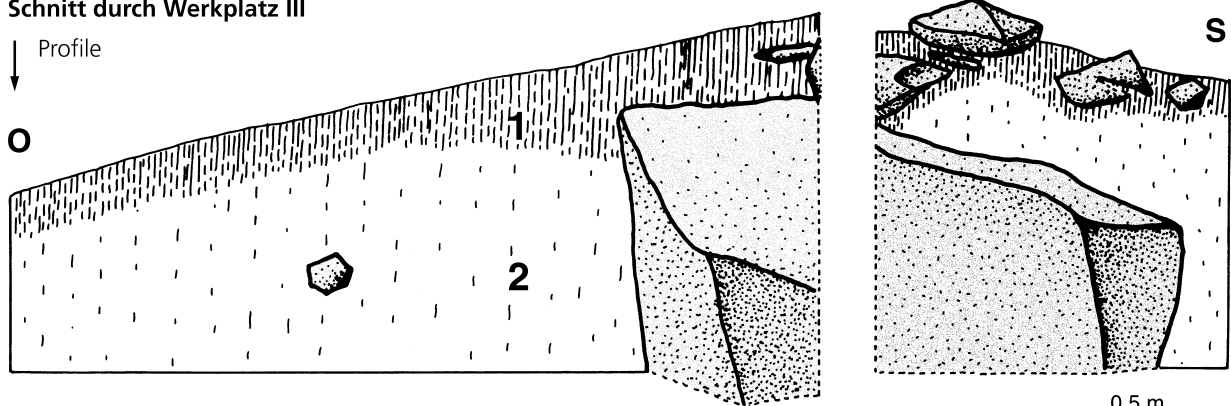


H VIII 327

Wassenach, Mauerley. Abbauspuren.

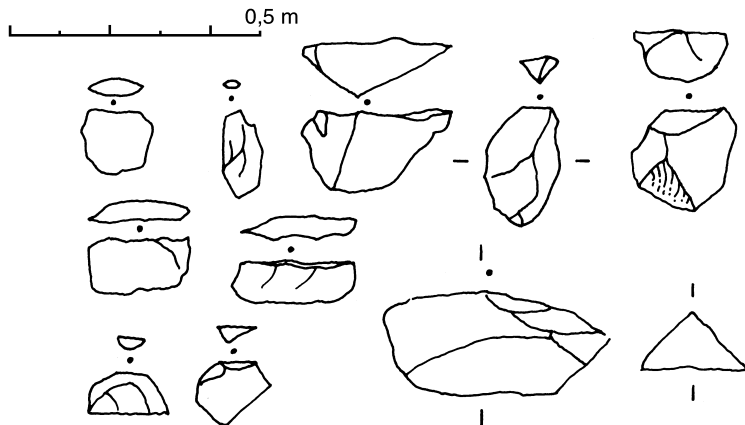


↑ Produktabfälle aus Schicht 1
Schnitt durch Werkplatz III
 ↓ Profile



1 Waldhumus – 2 dunkelbrauner, humoser Lehm

**Bei der Freilegung von B IV 118
 aufgefundene Produktabfälle**



Wassenach, Mauerley.



Die Mühl- und Reibsteinbrüche am Bellerberg-Vulkan bei Mayen. Abbau und Herstellung von Reibsteinen seit der Jungsteinzeit bis zur Urnenfelderzeit (5000 bis 750 v. Chr.). Meist wurde Material von den Rändern oder der Oberfläche des Lavastroms abgebaut, wobei die Feuersetzung eine gewisse Rolle spielte. Die abplatzenden Gesteinsscherben waren nur zur Herstellung von kleineren, sog. brotlaibförmigen Reibsteinen geeignet. Die Rohlinge wurden mit Schlagbasalt fertig zurechtgeschlagen. Gegen Ende der Urnenfelderzeit traten als neue Produkte bootsförmige Reibsteine auf. – Grafik: A. Schmickler.



Die Mühl- und Reibsteinbrüche am Bellerberg-Vulkan bei Mayen. Abbau und Herstellung von Reibsteinen in der Hallstattzeit (750 bis 450 v. Chr.). Erstmals werden regelrechte Brüche angelegt, Eisenwerkzeuge haben sich aber noch nicht durchgesetzt. Statt dessen wurde mit schweren Hartbasalthämmern gearbeitet. Mit diesen Werkzeugen wurden breite Rillen ausgeschlagen, wobei sich oberflächliche Risse bildeten, die immer tiefer in das Gestein eindringen und schließlich zum Durchreißen führten. Mit dieser Technik konnten gezielt größere Bruchstücke gewonnen werden, die bootsförmigen Reibsteine werden so auch größer. Feuersetzung und Schlagsteine blieben nach wie vor in Gebrauch. – Grafik: A. Schmickler.



Die Mühl- und Reibsteinbrüche am Bellerberg-Vulkan bei Mayen. Abbau und Herstellung von Reib- und Mühlsteinen in der Latènezeit (450 v. Chr. bis Chr. Geb.). Die Brüche der Latènezeit sind teilweise in Parzellen aufgeteilt. Hartbasalthämmer bleiben zunächst weiter in Gebrauch, wahrscheinlich wurden sie eher beim Abbau als bei der Rohlingsherstellung verwendet. Das vorherrschende Produkt sind hohe Reibsteine, sog. Napoleonschüte. Wann sich eiserne Werkzeuge durchgesetzt haben, ist unklar. Spätestens in der Mittel- bis Spätlatènezeit setzten sich Handmühlen durch, für deren Fertigung eiserne Werkzeuge nötig waren. Das Abschrotten eines Reibsteins (links) ist bis in die frühromische Zeit ausgeübt worden. – Grafik: A. Schmickler.



Die Mühl- und Reibsteinbrüche am Bellerberg-Vulkan bei Mayen. Abbau und Herstellung von Mühlsteinen in römischer Zeit (Chr. Geb. bis 450 n. Chr.). Die römischen Steinbrüche sind nach einem regelhaft eingemessenen Parzellensystem parallel zueinander angeordnet. Die Produktion ist streng arbeitsteilig organisiert: In den Brüchen werden nur noch Rohlinge hergestellt, welche in spezialisierten Werkstätten zu fertigen Mühlen bearbeitet werden. Im Lebensbild sind alle Arbeitsschritte des Abbaus dargestellt: Das Roden (hinten links), das Abdecken des Abbaus (hinten rechts), das Anreißen der Spaltungslinie (Mittelgrund links), das Setzen der Keile (Mittelgrund rechts), das Einschlagen der Keile (Vordergrund links), das Abtrennen eines gespaltenen Steins (Mittelgrund links), die Zurichtung der Rohlinge (Vordergrund) und der Abtransport (Vordergrund rechts). – Grafik: F. Hartmann.