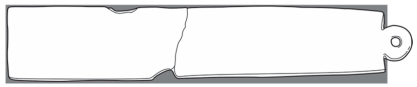
Catalogue of known specimens of bone rules

William A. Johnson. © 2022. Made freely available under a CC0 1.0 international license. Community norms expect that proper credit is given via citation.

Shading is added to the drawings to help highlight the rectilinear lines for the rectangular type and the angle for the trapezoidal type. Note that thumbnails are often from photos, which can introduce minor distortions due to perspective. All drawings by Karen Parker. Analysis and discussion: William A. Johnson, "Scribal Tools of the Trade: Bone Rules, Dividers, and Lamps as Writing Aids," Segno e Testo *2023.*

I. Rectangular Type (with long edges in parallel)

I.A. Rectangular, Type A (~Davis 2016, type A.1) - c. 100-140 mm L x 20-30 W

Item	Length (mm)	Width (mm)	Thickness (mm)	Shape and angles	Surfaces	Context	Date	Thumbnail
I.A.01 Castleford, UK [Britannia]	143 (blade c. 131)	c. 25-27	c. 3.5	Rectangular or slightly trapezoidal	Plano-convex	Military settlement	70-180 CE	

I.A.01. Inv. 031 T18; CN330; SF10 Museums and Arts, Wakefield Metropolitan District Council. Greep 1998, 283-4, fig. 124 nr. 189 under “polished bone strips.” Possibly to be classified as Type II.A. Dated by the life of the fort. Thumbnail after drawing in Greep.

I.A.02 L'Escala, Spain [Hispania]	c. 140 (blade c.130)	c. 30	c. 3	Rectangular	Plano-convex	Provincial town (?)	n/a	

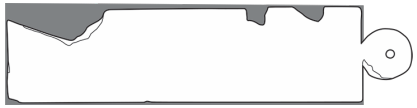
I.A.02. Inv. n/a Ampurias, L'Escala [Alt Empordá, Cat.], Spain, Girona, Servicio de Investigaciones Arqueologicas. Information and drawing from Artefacts.mom.fr (accessed 5/28/21), type RGL-4006. Apparently unpublished. Thumbnail after drawing by M. Feugère on artefacts.mom.fr.

I.A.03 Augst, Switzerland [Germania Superior]	130 (blade c. 120)	23	3	Rectangular	Plano-convex	Provincial town	25-200 CE	

I.A.03. Inv. 1969.12675; FK A01654; Region 1, Insula 45 Augusta Raurica, Augst Switzerland. Deschler-Erb 1998 1.167, cat. nr. 1968. Identified at Deschler-Erb 1998 2.153 as a moneybag label (*tessera nummularia*); no signs of writing or inscription. Polished. Claimed as a writing implement by Bertrand 2008, 116. Found with first century materials including, however, second century outliers (Deschler-Erb 1998 1.167). Thumbnail after drawing in Deschler-Erb 1998, 2.380, pl. 28.

I.A.04 Xanten, Germany [Germania Inferior]	130 (blade c. 115)	35	n/a	Rectangular	Plano-convex	Provincial town	II-IV CE	

I.A.04. Inv. 1079. Steiner 1911, 187 nr. 32, pl. 28. The image is poor and shot at an angle; it is not impossible that this is trapezoidal and should be categorized type II. Date after the life of the settlement. Thumbnail after plate in Steiner.

I.A.05 Magdalensberg Austria [Noricum]	125 (blade c. 109)	29	c. 3	Rectangular	Plano-convex	Provincial town	Early Roman?	

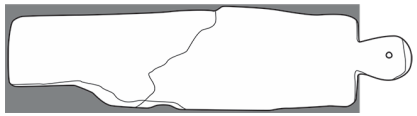
I.A.05. Inv. FJ/FO: 1993, AA/35 Magdalensberg, Austria. Gostenčnik 2005, 242-245; 518, Taf. 57.3. Polished, longitudinal sides rounded, hardly used. Gostenčnik hesitantly identifies it as a weaving tool. Gostenčnik dates to Augustan period on unknown grounds. Claimed as a writing implement by Bertrand 2008, 116, a possibility considered but not endorsed by Gostenčnik (242, n. 1136). Thumbnail after the drawing in Gostenčnik.

I.A.06 Neuss, Germany [Germania Inferior]	c. 125 (blade 115)	c. 29	n/a	Rectangular	Plano-convex	Military settlement	Roman	

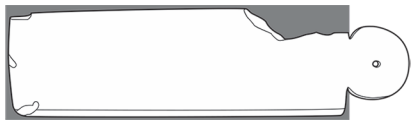
I.A.06. Inv. 11837, among the small finds from the excavations conducted by the Bonner Provinzialmuseum between 1887 and 1901. Lehner 1904, 415 and Taf. 35 nr 5, who identifies the object as a box lid. Compared to our II.A.12 by Obmann 1997, 127, which he identifies as a label. Coinage and historical mentions suggest occupation of the site from the time of Augustus to the 4th c. Thumbnail after a poor quality plate in Lehner.

I.A.07 Magdalensberg Austria [Noricum]	117 (blade c. 102)	26	3.5	Rectangular	Plano-convex	Provincial town	Roman	

I.A.07. Inv. FJ/FO: 1993, AA/36A Magdalensberg, Austria. Gostenčnik 2005, 242-245; 518, Taf. 57.4; color plate at Taf. 77.3/5; first pictured in Gostenčnik 2000, fig. 1, nr. 15. Roughly smoothed and hardly used. Gostenčnik hesitantly identifies it as a weaving tool. Gostenčnik dates to I-II CE by comparanda. Claimed as a writing implement by Bertrand 2008, 116, a possibility considered but not endorsed by Gostenčnik (242, n. 1136). Thumbnail after the drawing in Gostenčnik.

I.A.08 Virunum, Austria [Noricum]	110 (blade c. 95)	28	n/a	Rectangular	n/a	Provincial town	Roman	

I.A.08. Inv. n/a. Praschniker 1947, 164, 159 pl. 139(j). Found in the bathing complex. Compared to our II.A.12 by Obmann 1997, 127, which he identifies as a label. Perhaps a doubtful example given the tiny perforation hole and unkown thickness. Thumbnail after Praschniker.

I.A.09 Vindonissa, Switzerland [Germania Superior]	110 (blade c. 92)	29	1-2	Rectangular	Planar on both sides with beveled edge	Military settlement	Roman	

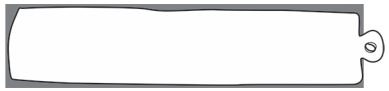
I.A.09. Inv. V.03.1 / 34:145. Vindonissa Museum, Brugg. Unpublished. Measurements kindly supplied by Debora Tretola along with photograph, after which the thumbnail. Identified by Tretola.

I.A.10 Zadar, Croatia [Dalmatia]	108 (blade c. 92)	c. 25	n/a	Rectangular, apparently (photo shot at an angle)	n/a	Funerary – physician (?)	I-IV c. CE	

I.A.10. Inv. A 10494, Arheološki muzej Zadar. Giunio 2010, nr. 57. "Unknown location" so uncertain whether this is part of the tomb ensembles of medical instruments found there. Described as "Medical Pharmaceutical spatula, undecorated, with a short handle and an elongated extension." Thumbnail extrapolated from photograph, shot at a slight angle, in Guinio.

I.A.11 Poitiers, France [Gallia Aquitania]	c. 96 (blade c. 83)	c. 27	c. 4	Rectangular (distorted)	Planar on both sides (?)	Provincial town	Roman	

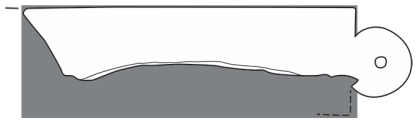
I.A.11. Inv. n/a, Musée Sainte-Croix, found in the Montiemeuf district in Poitiers, France. Bertrand 2008, 115-116, fig. 20, nr. 1, who identifies it as a writing implement. Bertrand dates to I/II CE on the basis the chronological typology advanced in Božič-Feugère 2004, 40. Thumbnail after the figure in Bertrand.

I.A.12 Vindonissa, Switzerland [Germania Superior]	n/a	n/a	n/a	Rectangular	n/a	Military settlement	Roman	

I.A.12. Inv. n/a, among the small finds from Vindonissa recorded in Hauser 1904, 18 and plate 59. Hauser does not venture an identification of the object. Compared to our II.A.10 by Obmann 1997, 127, which he identifies as a label. No longer locatable at Vindonissa. Thumbnail after the plate in Hauser.

I.A.13 London [Britannia]	partial [81.4+ (blade 69.3+)]	20.4-20.8	2.9	Rectangular	Planar on both sides	Provincial town	Roman	

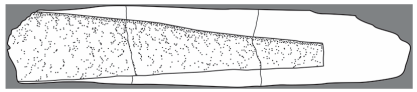
I.A.13. Inv. 4STS82[0]<952>. Museum of London. Davis 2016 nr. 10, who identifies it as a writing implement not yet completed (hence the lack of use markings and the omitted perforation at the head). “Unstratified” states Davis. Thumbnail after the drawing in Davis.

I.A.14 London [Britannia]	partial [118.4+ (blade 101.4+)]	Partial [20.9+]	3	Rectangular or trapezoidal (?)	Planar on both sides with rounded edges	Provincial town	c. 80-90 CE	

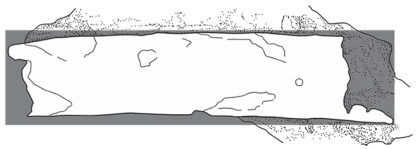
II.A.14. Inv. WP83[3926]<384> Museum of London. Davis 2016 nr. 1. Fragmentary: possibly Type II.A (trapezoidal). Date from pottery context. Thumbnail after the drawing in Davis.

I.A.15 Smirnium, Serbia [Pannonia]	Partial; n/a	n/a	n/a	Rectangular	Planar on both sides	Provincial town	Roman	

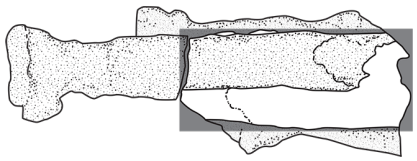
I.A.15. Inv. n/a Museum of Srem at Sremska Mitrovica. Šaranović-Svetek 1981, 158 and 171 pl. 6 nr. 2. Šaranović-Svetek 1981 is a study of bone objects in the museum from various locales in ancient Smirnium; the author groups this alongside objects used with cosmetics. No measurements or other information. Thumbnail after the drawing in Šaranović-Svetek.

I.A.16 Nijmegen, Belgium [Germania Inferior]	partial [138+]	c. 25	n/a	Rectangular	Convex on both sides(?)	Funerary – writing set	80-100 CE	

II.A.16. Inv. 437.ml, Museum Het Valkhof from the west cemetery. Koster 2013, 57 burial 8 nr. 42 and pl. 30, discussed at pp. 160, 190; cf. Eckardt 2017, nr. 37. Found fused together with a wax spatula of iron (on top in the drawing), and along with a small iron knife, two iron styli, and an inkwell, in a funerary context with many grave goods. Grave of an unsexed adult aged 20-40 years. Dated from accompanying ceramics. Thumbnail after drawing in Koster. See also fig. 7 in this article.

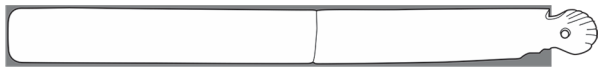
I.A.17 Nijmegen, Belgium [Germania Inferior]	partial [125+]	c. 25	n/a	Rectangular	n/a	Funerary – writing set	100-115 CE	

II.A.17. Inv. 438.mm, Museum Het Valkhof. Koster 2013, 61 burial 9 nr. 31 and pl. 42, discussed at pp. 160, 190; cf. Eckardt 2017, nr. 35. Distorted and partial but important since found fused together with an iron stylus and a wax spatula of iron, alongside two other styluses, a small iron knife and two thin pins among leather remains of a pouch, in a context with many grave goods, among which was also an inkwell (nr. 30). Also found alongside the fused metal objects was beech wood, possibly remains of a wooden tablet (nr. 55). Grave of a female aged 20-40 years. Apparently with parallel edges; Koster describes as “rectangular”. Dated from three coins issued from 71 to 97 CE and ceramics. Thumbnail after drawing in Koster.

I.A.18 Nijmegen, Belgium [Germania Inferior]	Very partial	n/a	n/a	n/a	n/a	Funerary – writing set	95-110 CE	

II.A.18. Inv. 460.mb, Museum Het Valkhof. Koster 2013, 66 burial 11 nr. 22 on p. 66 and pl. 55, discussed at pp. 160, 190; cf. Eckardt 2017, nr. 97. In highly fragmentary state but found fused together with a wax spatula of iron (shaft on top in the drawing), along with remains of three iron styli, iron pin, small iron knife, and an inkwell, in a funerary context with many grave goods. Grave of a female aged 20-30 years. Of uncertain type but included here with the other two examples from Nijmegen. Date from a coin issued in 90/91 CE and ceramics. Thumbnail after drawing in Koster.

I.B. Rectangular, Type B (~Davis 2016, type B.1) c. 100-140 mm L x 10-20 W – distinctly thinner than Type I.A

Item	Length (mm)	Width (mm)	Thickness (mm)	Shape and angles	Surfaces	Context	Date	Thumbnail
I.B.01 Near Zagreb, Croatia [Dalmatia]	159 (blade c. 147)	15-16	4	Rectangular and narrow	Convex on both sides	Provincial, rural funerary– probable writing set	late I CE	

I.B.01. Inv. 4348 location unknown but likely in the Mestni muzej, Ljubljana. Plesničar 1980, 459 nr. 8 and plate 2 nr. 7; cf. Božič 2002, 34. Found in a large stone tomb on the road between Ljubljana and Zagreb (Roman road Emona-Neviodunum), over two km from the Emona necropolis, so a villa rustica or vicus context (Plesničar 1980, 462). Among other items were remains of a wax spatula (Plesničar, nr. 11), a possible bone stylus (nr. 9), what is almost certainly the lid of an inkwell (nr. 12, Fig. 3, nr. 4; not in the catalogue in Eckardt 2017), and a decorated bone sheath that looks very much like the leather sheath known as a *theca*, the typical carrying case for a scribe (Fig. 2, nr. 6). Dated by the glass and ceramic items in the grave (Plesničar, 461-462). Deemed "probably male" on the basis of a knife, cleaver, and ax included among the grave goods (461). Plesničar reports the length as 60 mm, a typo as one can infer from the drawing. The exact measurements here come from the report in Božič. Thumbnail after fig. 2 nr. 2 in Božič.

I.B.02 Castleford, UK [Britannia]	140 (blade c. 132)	c.12	c. 2.5	Rectangular and narrow	Convex on both sides	Military settlement	70-180 CE	

I.B.02. Inv. 267/A T10; CN332; SF970 Museums and Arts, Wakefield Metropolitan District Council. Greep 1998, 284-5, nr. 191 under "polished bone strips." Dated from the life of the fort. Thumbnail after drawing in Greep.

I.B.03 London [Britannia]	132.1 (blade 124.7)	14.2-15.3	2.4	Rectangular with slight tapering at foot	Plano-convex	Provincial town	160-300 CE	

I.B.03. Inv. Inv. PNS01[1405]<603>. Museum of London. Keily 2006, 100-101, fig.100 <S74>, "probably a tool of some form, possibly a tongue-depressor"; Davis 2016, nr. 9, who includes it among writing implements. Thumbnail after the drawing in Davis.

I.B.04 Augst, Switzerland [Germania Superior]	partial [c. 104+]	17	2	Rectangular	Plano-convex	Provincial town	Roman	

I.B.04. Inv. 1983.25320; FK C00040; Region 1, Insula 35. Augusta Raurica, Augst Switzerland. Deschler-Erb 1998 cat. nr. 1971. Identified at Deschler-Erb 1998 2.153 as a moneybag label (*tessera nummularia*); no signs of writing or inscription. Polished. Claimed as a writing implement by Bertrand 2008, 116. Thumbnail after drawing in Deschler-Erb 1998, 2.380, pl. 28.

I.B.05 Alghero, Monte Carru, Sardinia, Italy [Sardinia-Corsica]	partial [c. 90-110+]	c. 16-20	c. 1.75-2.0	Rectangular? (damaged and distorted)	n/a	Funerary – probable writing set	I-II CE	

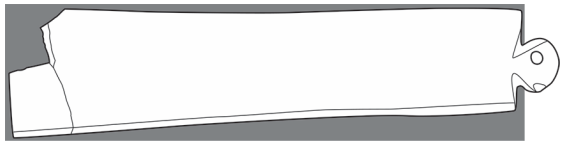
I.B.05. Inv. n/a, from the excavation at Monte Carru of Tomb 413, in the Museo della Città of Alghero. La Fragola 2015, with fig. 2, 8. Typology uncertain due to the distortion from burning. Measurements reflect the estimate by la Fragola (p. 247 n. 5) that the burning made for a consequent reduction of perhaps 15-30%. Survival from a child's cremation. Found placed next to the body, along with iron spatula, inkwell, and another bone fragment that could be a second ruler or part of a bone tablet, also plant ash that (la Fragola speculates) could be a reed pen or papyrus or wooden tablet. Dated from the topology of the inkwell. Thumbnail after la Fragola fig. 2.

I.B.06 Lyon, France [Gallia Lugdenensis]	82 (blade c. 68)	c. 17-19	n/a	Rectangular	n/a	Provincial (?)	n/a	

I.B.06. Inv. n/a, Musée Gallo-Romain de Fourvière, Lyon. Artefacts.mom.fr (accessed 5/28/21), type RGL-4006, for information and photograph. Thumbnail after the photograph by J.-M. Degueule.

II. Trapezoidal Type (with width increasing from head to foot)

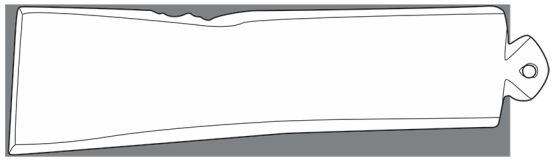
II. A. Trapezoidal Type A (~Davis type A.2) c. 100-140 mm L x 20-30 (min.) and 25-35 (max.) W with an angle of 2-4 degrees

Item	Length (mm)	Width (mm)	Thickness (mm)	Shape and angles	Surfaces	Context	Date	Thumbnail
II.A.01 Vindonissa, Switzerland [Germania Superior]	147 (blade c. 137)	c. 27-32	1-2	Trapezoidal but aberrant – longitudinal edges not cleanly straight. Distended?	Planar on both sides, with beveled edge	Military settlement	Roman	

II.A.01. Inv. V.03.1 / 23:1994. Vindonissa Museum, Brugg. Unpublished. Measurements kindly supplied by Debora Tretola along with photograph, after which the thumbnail. (Pictured at Božič-Feugère 2004, 39, fig. 35.)

II.A.02 Brindisi, Italy [Italia]	145 (blade c. 130)	c. 24-35	n/a	Trapezoidal: right angle; 4-5°	n/a	Funerary	I CE	

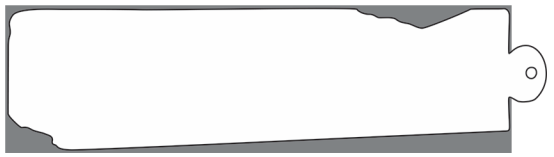
II.A.02. Inv.15153, found in tomb 15 of the necropolis on Via Cappuccini in Brindisi. Cocchiaro-Andreassi 1988, nr. 304. Made not of bone but of apatite. Cocchiaro (160-161) dates to late I BCE or early I CE on the basis of a coin from middle of I BCE. Fünfschilling 2012, 171 dates to mid 1 c AD on the basis of the glass vessels. Cremation; found in a grave with many items, including another bone rule in fragments (mentioned with nr. 304), bone stylus (nr. 300), four iron spatulas (nr. 294), divider (nr. 292), and at least five inkwells (for which see Eckardt 2018, 192 and Eckardt 2017, nrr. 184, 245-248; Fünfschilling 2012, 171-2). Presumed female on the basis of certain grave goods. Cocchiaro identifies this item as a game piece (*tessera nummularia*); identified as a writing implement by Božič 2002, 34-35. Thumbnail after Cocchiaro.

II.A.03 Vindonissa, Switzerland [Germania Superior]	145 (blade c. 135)	c. 33-40	1-2	Trapezoidal: right angle [photo at slight angle], c. 3°	Planar on both sides, with beveled edge	Military settlement	Roman	

II.A.03. Inv. V.03.1 / 19:20. Vindonissa Museum, Brugg. Unpublished. Measurements kindly supplied by Debora Tretola along with photograph, after which the thumbnail. (Pictured at Božič-Feugère 2004, 39, fig. 35)

II.A.04 Alba Iulia, Romania [Dacia]	c. 145 (extant 134+)	c. 18.5- 23	n/a	Trapezoidal. right angle; 3°	n/a	Military settlement	II-III CE	

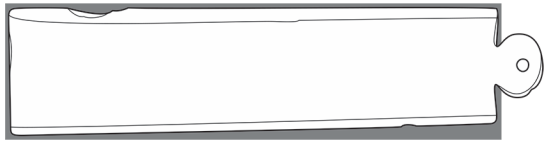
II.A.04. Inv. 3848, Muzeul National al Unirii Alba Iulia. Found in area of Roman baths. Ciugudean 1997, 36, 77; 139, nr. 457, pl. 28, nr. 8 (note that the text refers mistakenly to plate XXIX). Ciugudean p. 36, calls them *faltuitoare*, which in Romanian means "folders," and notes that the identification is uncertain. Dated to the Roman occupation of the fort, founded 107-8 CE and with the latest coin evidence from the late 3rd c. Thumbnail after Ciugudean.

II.A.05 London [Britannia]	143.2 (blade 133.8)	c. 32.5-37	3.6	Trapezoidal: right angle; 2°	Plano-convex	Provincial town	Roman	

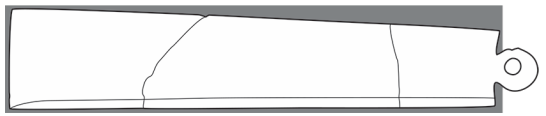
II.A.05. Inv. 13941, Museum of London. Davis 2016 nr. 2. Greep 1983, Fig. 349.9. "Unstratified" states Davis. Width estimated from the drawing; Davis reports 23.1-29.5, a transcription error. Thumbnail after the drawing in Davis.

II.A.06 London [Britannia]	142 (blade 132.4)	c. 25.5-30	3	Trapezoidal: right angle; 2-3°	Plano-convex	Provincial town	early II CE	

II.A.06. Inv. LCT84[3860]<553>, Museum of London. Davis 2016 nr. 3. Dated by adjacent pottery. Width estimated from the drawing; Davis reports 31.8-c. 36.8+, a transcription error. Thumbnail after the drawing in Davis.

II.A.07 Rottweil, Germany [Germania Superior]	141 (blade c. 130.5)	33	n/a	Trapezoidal: right angle; 2°	Planar on both sides, with beveled edge	Provincial town (villa complex)	II CE or later	

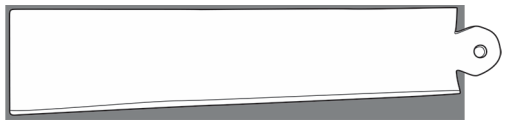
II.A.07. Inv. 113 Dominikaner-Museum, Rottweil. Klee 1986, nr. 28/20, p. 121-2 and fig. 28, who identifies it as "scraper?" while also noting the description "folding bone" in the museum inventory. Found near the stove of Room 1 in the villa complex labeled Villa C, which was built in the early 2nd c. CE and destroyed at an unknown date (Klee 1986, p. 59). Božič 2002, p. 34, incautiously claims an early second century date for this item. Thumbnail after Klee.

II.A.08 Vindonissa, Switzerland [Germania Superior]	140 (blade c. 129)	c. 20-26.5	1-3	Trapezoidal: right angle; 3°	Convex on both sides, with beveled edge	Military settlement	Roman	

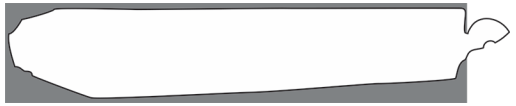
II.A.08. Inv. V.03.1 / 4224. Vindonissa Museum, Brugg. Unpublished. Measurements kindly supplied by Debora Tretola along with photograph, after which the thumbnail. (Pictured at Božič-Feugère 2004, 39, fig. 35.)

II.A.09 Berlingen, Belgium [Gallia Belgica]	140 (blade c. 128)	30	3	Trapezoidal: right angle; 1-2°	Planar, both sides, with beveled edge	Funerary – writing set	I CE	

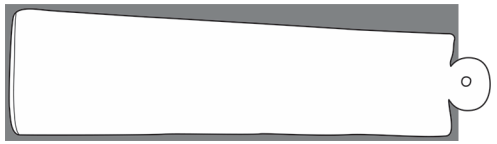
II.A.09. Inv. 69.B.26.38d, Gallo-Romeins Museum, Tongeren, Belgium. From Berlingen. Roosens-Lux 1973, Grave 26, p. 31, nr. 38d and p. 30, fig. 20 ("Bone plate, perhaps lid of a box"). Part of an extensive grave assembly for a young male including inkwell, scissors, stylus, penknife, two dividers, wax spatula, all in close proximity (pp. 27, 30, 31, nr. 10, 35, 36, 38a, 37a, 38c, 38b; on the findspot, p. 22, fig. 14); cf. Božič 2002, 34, who identifies the object as a writing implement. For dating, Roosens-Lux 1973, pp. 48-49; Fünfschilling 2012, 171, dates to c. 100 CE. Thumbnail after La Fragola 2015, 251, fig. 5.

II.A.10 Vindonissa, Switzerland [Germania Superior]	131 (blade c. 120)	c. 24-28	1-2	Trapezoidal: right angle; 3°	Convex on both sides	Military settlement	Roman	

II.A.10. Inv. V.03.1 / 2222h. Vindonissa Museum, Brugg. Unpublished. Measurements kindly supplied by Debora Tretola along with photograph, after which the thumbnail. (Pictured at Božič-Feugère 2004, 39, fig. 35)

II.A.11 Schleitheim, Switzerland [Germania Superior]	Partial [c. 130+]	c. 19-23+	n/a	Trapezoidal. right angle; 3°	n/a	Provincial town (?)	Roman	

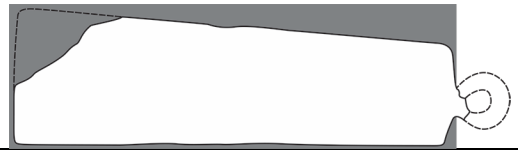
II.A.11. Inv. n/a Guyan 1985, 273 pl. 49.3, who states only an approximate length and notes that the item is now missing. Guyan identifies the object as a pottery tool. No further information. Thumbnail after Guyan.

II.A.12 Heddernheim, Frankfurt am Main, Germany [Germania Superior]	127 (blade c. 117)	c. 26-33	c.4	Trapezoidal. right angle; 3°	Plano-convex	Provincial town	I-III CE	

II.A.12. Inv. α 9046, Archäologisches Museum, Frankfurt am Main. Obmann 1997, nr. 1481, p. 127, fig. Identified as an "Etikett" though Obmann expresses caution (p. 76). Božič 2002 mistakenly cites this item as one found in the grave of Dolenjska cesta in Ljubljana, or perhaps to be compared to that; those however have an entirely different shape. Dating comes from the history of the site of Nida, which came into being in the 1st, and fell into disuse in the 3rd c. (though there are scattered signs of later occupation). Thumbnail after Obmann 1997, 251, Taf. 39.

II.A.13 Túrugi necropolis, Galera, Spain [Hispania]	105 (blade c. 92)	23-27	4	Trapezoidal: right angle; 2°	Plano-convex	Funerary – possible writing set	August an	

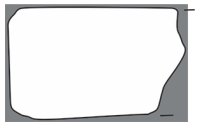
II.A.13. Inv. 1979/70/T-150/5, Museo Arqueológico Nacional, Madrid. Cornago 2016, 93-5 and figs. 2, 4. Found in tomb 150, along with a bone stylus. No analysis of skeletal remains. Thumbnail after Cornago, 95, fig. 4. Note that at 105 mm this example is shorter than the norm.

II.A.14 Oberwinterthur Switzerland [Rhaetia]	n/a	n/a	"thin"	Trapezoidal: right angle [broken at foot], 4°	Plano-convex	Provincial village	Late I BCE to early I CE	

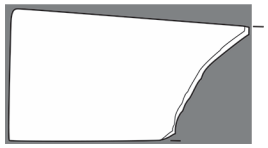
II.A.14. Inv. FK 303, box 64/53. Martin-Kilcher 1991, 64-65, 71 nr. 21 + pl. 26. No measurements provided. "Too thin and too large for a label" (64). Many secondary scratches. From an apparent workshop that included (in an earlier layer) a stylus. Date from pottery context. Thumbnail from the drawing in Martin-Kilcher.

II.A.15 London [Britannia]	partial [112.6+]	28.3-31.3	2.8	Trapezoidal: [broken at foot], 2-3°	Plano-convex	Provincial town	late I-early II CE	

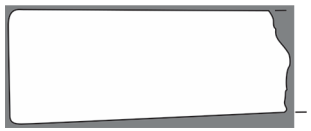
II.A.15. Inv. 28PS84[4199]<191>, Museum of London. Davis 2016 nr. 4. Date from pottery context c. 60-120 CE. Thumbnail after the drawing in Davis.

II.A.16 London [Britannia]	partial [48.5+]	c. 29 - 30.2	2.4	Trapezoidal: right angle; 2°	n/a (sectional missing in Davis)	Provincial town	II CE	

II.A.16. Inv. ETA89[1041]<1354>, Museum of London. Davis 2016 nr. 6. Date from pottery context c. 120-160 CE. Thumbnail after the drawing in Davis.

II.A.17 London [Britannia]	partial [63.8+]	c. 32-35.1	2.3	Trapezoidal: right angle; 2-3°	Planar on both sides?	Provincial town	Roman	

II.A.17. Inv. WP83[3000]<377>, Museum of London. Davis 2016 nr. 8. Sectional suggests planar on both sides, but Davis reports plano-convex. Thumbnail after the drawing in Davis.

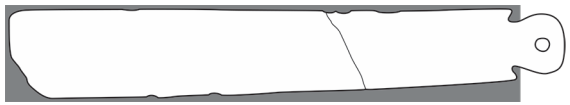
II.A.18 Augst, Switzerland [Germania Superior]	n/a, partial	30	3	Trapezoidal: right angle; 2°	Plano-convex? (uncertain because of distortion)	Provincial town	I CE	

II.A.18. Inv. 1978.3610; FK B01701; Region 1, Insula 31 Augusta Raurica, Augst Switzerland. Deschler-Erb 1998 cat. nr. 1970. Identified at Deschler-Erb 1998 2.153 as a moneybag label (*tessera nummularia*); no signs of writing or inscription. Polished. Dated from pottery context 30-75 CE. Claimed as a writing implement by Bertrand 2008, 116. Thumbnail after drawing in Deschler-Erb 1998, 2.380, pl. 28.

II. B. Trapezoidal Type B – with the characteristic angle but distinctly different in length and/or width from Type II.A

Item	Length (mm)	Width (mm)	Thickness (mm)	Shape and angles	Surfaces	Context	Date	Thumbnail
II.B.01 Aquileia, Italy [Italia]	166 (blade 156)	16	n/a	Trapezoidal: right angle; 2°	Plano-convex? (from photo)	Italian urban (?)	Roman	

II.B.01. Inv. n/a. Museo Archeologico Nazionale, Aquileia, Italy. Artefacts.mom.fr (accessed 5/18/21), type RGL-4006, for information and photograph. Thumbnail after photo by M. Feugère available on artefacts.mom.fr.

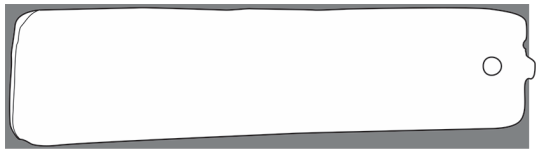
II.B.02 Vagnari necropolis Gravina, Puglia, Italy [Italia]	147	c. 20.5-25	4	Trapezoidal: right angle; 2°	Plano-convex	Funerary writing set, together with leatherworking implements	Early III CE	

II.B.02. Inv. Pl060, Sf.13a, Fondazione Ettore Pomarici Santomasi, Gravina. Small et al. 2002, 168 nr. 5 and 166 pl. 16; discussion at 171-2. Cf. Eckardt 2017, nr. 473. Burial F35 of an adult male with many grave goods at a cemetery next to industrial vicus that was probably part of an imperial estate. Found under the left knee together with an iron wax

spatula (inv. P1061), inkwell (P974), and two iron objects one of which may be a stylus (P975), the other an awl (P1062). Small et al. 2002, 171: "The iron and bone tools at the left knee must have been deposited together, and seem likely to be craft implements of the dead man," which Small thinks leatherworking implements. Eckardt rightly concludes that the wax spatula and bone rule lying next to one another with the inkwell makes it "much more likely that we are seeing both writing equipment and leatherworking tools placed by the man's side." The larger head makes this only a slight variant on the style; the V-shaped shoulders suggest influence from type III. Dated from accompanying ceramics. Thumbnail after Small et al.

II.B.03 Vindolanda, UK [Britannia]	Partial, [139+]	16-21	n/a	Trapezoidal: right angle; 2-3°	n/a	Military settlement	Roman	

II.B.03. Inv. SF5465, Vindolanda Museum. Unpublished, kindly brought to attention by Barbara Birley, personal communication, who also provided the measurements. If there were the characteristic perforated head this would be longer than the norm. Thumbnail after photograph by B. Birley.

II.B.04 Pompeii, Inn of Gabinius [Italia]	140	c. 30-34	n/a	Trapezoidal: right angle; 2-3°	n/a	Italian town	I CE	

II.B.04. Inv. OA 1868, Musée Condé, Château de Chantilly. Laugier 2002, 89, who identifies the object as a gaming piece. Found in the Inn of Gabinianus, Pompeii, Reg. VI, Insula IX 1.14. Dated by presumed proximity to Pompeii destruction date. Note the quite different head style, which makes this an uncertain example. Thumbnail after the photograph on the website of the French Ministère de la culture, where it is identified as a gaming piece. https://www.pop.culture.gouv.fr/notice/joconde/M5052000111 (accessed 9/24/21)

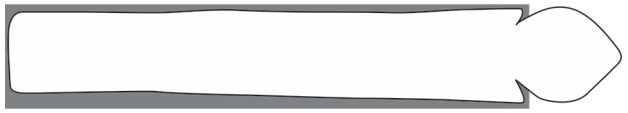
II.B.05 Pompeii, workshop of Verus [Italia]	140	20-25	n/a	Trapezoidal, apparently ("ending in a ring at the narrowest end")	n/a	Italian town – surveyor workshop with writing implements	I CE	described by della Corte 1912, but unpublished and no picture available

II.B.05. Inv. n/a. Della Corte 1912, 254 ("a strip or splint of bone, 0.02-0.025 m. wide, 0, 14 m. long, ending in a ring at the narrowest end." Found at the workshop of Verus *gromaticus* (surveyor) at Pompeii, together with surveying tools, but also items described by Božič 2002, 35 as a "writing set": a metal stylus and scraper (possibly a wax spatula), and a bone-handled small knife 9 mm long (a penknife, according to della Corte 1922, 93). Dated by presumed proximity to Pompeii destruction date.

II.B.06 Lyon, France [Gallia Lugdenensis]	75 (blade c. 70)	c. 21-25	n/a	Trapezoidal, 4°	n/a	Provincial urban	5-10 CE	

II.B.06. Inv. CYB00.H1.12, Musée Gallo-Romain de Fourvière, Lyon. From the excavations by A. Desbat at the Pseudo-sanctuary of Cybele. Artefacts.mom.fr (accessed 5/28/21), type RGL-4006 for information and photograph. Date from stratigraphy (level 3B). Thumbnail after the photograph by A. Desbat.

III.A Non-perforated type, usually tapering (Davis 2016, Type C.1-3) (distinctive head shape, usually with width narrowing from head to foot)

Item	Length (mm)	Width (mm)	Thickness (mm)	Shape and angles	Surfaces	Context	Date	Thumbnail
III.A.01 Poitiers, France [Gallia Aquitania]	c. 162 (blade 136)	c. 20-24	c. 4	Slight tapering towards foot	Plano-convex	Provincial	Roman	

III.A.01. Inv. n/a, Musée Sainte-Croix, find spot n/a, Poitiers, France. Bertrand 2008, 115-116, fig. 20, nr. 2, who identifies it as a writing implement. Bertrand dates to II/III CE, but only on the basis the chronological typology advanced in Božič-Feugère 2004, 40. Thumbnail after the figure in Bertrand.

III.A.02 Brescia, Italy [Italia]	159 (blade 136)	15	c. 2	Rectangular	n/a	Funerary – writing set	Late II CE	

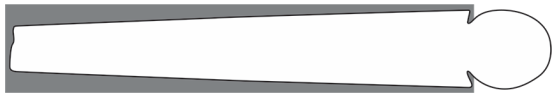
III.A.02. Inv. 19044. Bezzi Martini 1987, 28-30, Fig. 5 (photo) and 7 (drawing). From the necropolis, tomb 18, a child's burial in a small sarcophagus. "On one wall were leaning a stylus, the bone rule and a small knife." The other objects in the grave were an alabaster crater, small gaming tiles and six coins, one of which can be dated to Antoninus Pius. Thumbnail after the drawing in Bezzi Martini.

III.A.03 Duklja, Montenegro [Dalmatia]	c. 146 (blade c. 125)	c. 20	c. 2	Rectangular, or slight tapering?	n/a	Funerary – writing set	III CE	

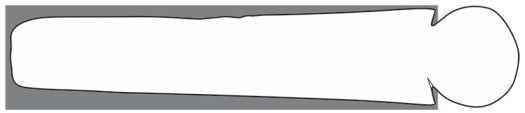
III.A.03. Inv. 67 or 68. Cermanović-Kuzmanović et al. 1975, 58, 325, burial 21 nr. 5. Cremation burial in a deep pit; found with an inkwell, two iron spatulas, and a silver-handled iron knife (along with a glass cup). Dated from a coin of Caracalla also found in the grave. The publication assumes that another, headless rectangular bone piece is an extension of this rule and thus gives a length of 298 mm; more likely the other bone piece is itself a second bone rule or other bone implement, and the estimates here rely on that assumption. Thumbnail after Cermanović-Kuzmanović.

III.A.04 Sinj, Croatia [Dalmatia]	146 (blade c. 125)	25	c. 3.5	Rectangular	Convex on both sides	Funerary – possible writing set	I CE	

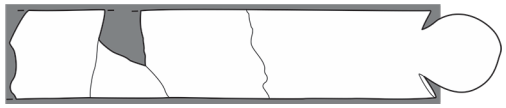
III.A.04. Inv.br. 147. Gabričevič 1983, 21 and 22, fig. 11. Found in grave 17 of the Ruduša necropolis together with what appears to be a bronze inkwell (not in the catalogue by Eckardt), a bowl, and two iron "nails" which may be styli. Dated from the tomb monuments and artefacts (see Gabričevič 1983, 67-69). Thumbnail after drawing in Gabričevič.

III.A.05 Dura-Europos, Syria [Syria]	144 (blade 122)	c. 13-22	3	Tapering towards foot, broken at bottom but apparently squared	Plano-convex	Military settlement	Roman (pre-256 CE)	

III.A.05. Inv. 1933.420, Yale University Art Gallery. Excavated from block M7 W6 in Dura-Europos. Unpublished; dimensions kindly supplied by Yale University Art Gallery. Thumbnail extrapolated from photograph, shot at a slight angle, on the Yale University Art Gallery web site, which identifies the object as a "flat bone cutting instrument" (https://artgallery.yale.edu/collections/objects/5892, accessed 7/14/21).

III.A.06 Niederbieber, Neuwied, Germany [Limes - Germania Superior]	c. 134 (blade c. 111)	c. 19-26	3	Tapering towards foot	n/a	Military settlement	190-260 CE	

III.A.06. Inv. 32267, Rheinisches Landesmuseum Bonn. Von Carnap-Bornheim 1968, 350-1, 372, 373 pl. 9 nr. 9. Identified hesitantly as a "Sack label." Dated by the life of Fort Niederbieber. Thumbnail after the drawing in von Carnap-Bornheim.

III.A.07 Place Tolozan, Lyon France [Gallia Lugdenensis]	partial [130+]	23.5	3.7	Rectangular? (broken and warped)	n/a (distorted)	Provincial town	Late II-early III CE	

III.A.07. Inv. 79.3.6.40, Lugdunum Musée (Musée Gallo-Romain de Fourvière), Lyon. Beal 1983, p. 374, nr. 1329, pl. 61. Scratches reported on both sides. Nr. 1328 is a similarly tapering bone object, but with a different head type. From a 1979 rescue operation in Place Tolozan, found among materials dating to c. 150-250 (Beal 1983, p. 9). Thumbnail after plate in Beal.

III.A.08 Heddernheim, Frankfurt am Main, Germany [Germania Superior]	130	c. 12-19	c. 3	Tapering towards foot	Convex on both sides	Provincial town	I-III CE	

III.A.08. Inv. X 3199, Archäologisches Museum, Frankfurt am Main. Obmann 1997, nr. 1478, p. 127, and 251, Taf. 39. Identified as a label by Obmann. Dating comes from the history of the site of Nida, which came into being in the 1st, and fell into disuse in the 3rd century. Thumbnail after the drawing in Obmann.

III.A.09 London [Britannia]	120.8	20.9-19.5	3.9	Rectangular	Plano-convex	Provincial town	Roman (?)	

III.A.09. Inv. BAX95[903]<141>, Museum of London. Wardle 2002, P.89 nr. A<141>, who hesitantly identifies as "?label"; Davis 2016 nr. 11 identifies it as a writing implement. "Post-Roman context, but possibly Roman residual" says Wardle about the date. Thumbnail after the drawing in Davis.

III.A.10 Szóny, Hungary [Pannonia]	102	18	2	n/a	Plano-convex	Funerary – writing set	Roman	Described by Bilkei, but unpublished and no image available

III.A.10. Inv. K 372/d. Bilkei 1980, 73 and 79, nr. 68; cf. Eckardt 2018, 185 and her catalogue nr. 135. From a grave in the Járóka cemetery, reportedly that of a child, and listed by Bilkei as a "smoothing tool"; found alongside a bronze inkwell and two bronze styli. Claimed as an example by Božič 2002, 34, but the piece is unpublished and there is no image or drawing. Bilkei's rubric and description does match that of another item she lists, from Budapest (our III.A.11), which is our admittedly thin basis for listing this unimaged example with type III examples. The object had traces of iron and bronze on it, which (speculatively) could be remnants from a carrying case like the one made from a copper alloy found at Szóny (Bilkei nr. 72; cf. drawing in Eckardt 2018, 39, fig. 28a).

III.A.11 Óbuda, Budapest, Hungary [Pannonia]	Partial [c. 115+]	c. 16-20	n/a	Tapering towards foot	n/a	Funerary – possible writing set (?) in a military settlement	Late III-IV CE	

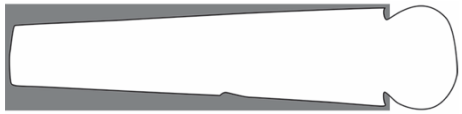
III.A.11. Inv. n/a.; cf. Bilkei 1980, 73 and kat. nr. 95 and Fünfschilling 2012, 172. First pictured in Nagy 1935, p. 4 plate 1. Part of a grave assembly including inkwell, stylus, flat knife with bone handle, penknife with bone handle, and remains of a wax tablet. For doubts on whether the grave was, as reported in Bilkei, a child's grave, and the general confusion in the records for these objects, see Eckardt 2018, 185 and cat. nrr. 272 and 297. Zsidi 1995, 55 nr. 233, a bone "smoother," is a different object 191 mm long. Measurements here are estimated from the drawing in Fünfschilling. Dated by coins found in the grave. Thumbnail after the plate in Nagy.

III.A.12 Neiderbieber, Neuwied, Germany [Limes - Germania Superior]	Partial [71+]	22	3	Tapering towards foot	n/a	Military settlement	190-260 CE	

III.A.12. Inv. E 1193 Rheinisches Landesmuseum Bonn. Von Carnap-Bornheim 1968, 350-1, 372, 373 pl. 9 nr. 10. Identified hesitantly as a "Sack label"; cf. also nrr. 11 and 12, of similar look but with a different head. Dated by the life of Fort Niederbieber. Thumbnail after the drawing in von Carnap-Bornheim.

III.A.13 Alba Iulia, Romania [Dacia]	Partial [74+]	c. 22	n/a	Rectangular?	n/a	Military settlement	II-III CE	

III.A.13. Inv. 3847, Muzeul National al Unirii Alba Iulia. Ciugudean 1997, pp. 36, 139, nr. 458; pl. 28, nr. 9 (the text refers mistakenly to plate XXIX). Dated to the Roman occupation of the fort, founded 107-8 and with the latest coin evidence from the late 3rd c. Thumbnail after Ciugudean.

III.A.14 Kastell Weißenburg, Bavaria, Germany [Limes - Germania Superior]	n/a	n/a	n/a	Tapering towards foot	n/a	Military settlement	90-250 CE	

III.A.14. Inv. and location unknown. Found among the remains of the Roman fort at Weißenburg along the Upper Germanic-Rhaetian Limes (section 14), published in Kohl et al. 1906, p. 56, nr. 10.4 (plate 7 nr. 64). No information on size or exact findspot. Date from Roman occupation of the fort. Thumbnail after the plate in Kohl et al.

III.A.15 Dura-Europos, Syria [Syria]	c. 145 (blade 125)	c. 13-19	4	Tapering towards foot, bottom squared	Plano-convex (? – from photo)	Military settlement	Roman (pre-256 CE)	

III.A.15. Inv. 1938.726, Yale University Art Gallery. From the 1938 Dura-Europos. Unpublished; dimensions kindly supplied by Yale University Art Gallery. Thumbnail extrapolated from photograph, shot at a slight angle, on the Yale University Art Gallery web site, which identifies the object as a "bone knife" (https://artgallery.yale.edu/collections/objects/71040, accessed 7/14/21).

III.A.16 Aquileia, Italy [Italia]	Partial; n/a	n/a	n/a	Tapering towards foot	n/a	Funerary (?)	III CE	

III.A.16. Inv. n/a. Buora 1995, 133, pl. 64, from the materials donated in the 19th c. by Francesco di Toppo from his collection, most of which came from the cemetery in Aquileia. No measurements or discussion. Claimed as our writing implement by Božič 2001a, 23-24, who points to the remains of the V-shaped notches on either side of where the head has broken away. The funerary context cannot be certain. Thumbnail after the plate in Buora.

III.B Possible variants for Type III.A

Item	Length (mm)	Width (mm)	Thickness (mm)	Shape and angles	Surfaces	Context	Date	Thumbnail
III.B.01 Mainz, Germany [Germania Superior]	182	20	4	Rectangular	Plano-convex	Provincial town	Roman	

III.B.01. Inv. 71 | 43a, Landesmuseum Mainz. Mikler 1997, 27, 127, and fig. 18 nr. 1, who identifies the object as a label; Božič 2001a identifies this as a writing implement. Note that the object lacks the distinctive V-shaped cut at the shoulder, has two pierced holes, and is aberrantly long; thus a doubtful example. Thumbnail after Mikler.

III.B.02 Lyon, France [Gallia Lugdenensis]	131	20.9-23.4	2.7	Rectangular or slight tapering	Convex on both sides	Provincial town	Late I CE	

III.B.02. Inv. 77.1.6.60, Lugdunum Musée (Musée Gallo-Romain de Fourvière), Lyon. Beal 1983, 374, nr. 1328, pl. 61; cf. Feugère 1978, 55 nr. 5, pl. 1. Both sides polished, with multiple transverse scratches. From the excavations at Verbe Incarné, which was densely inhabited from the Augustan period to the beginning of the 3rd c. (Beal 1983, 9). Date from Beal (p. 374), on uncertain grounds (left undated by Feugère). Thumbnail after plate in Beal. Uncertain, but possibly a rough example intended to mimic type III.A.

IV. Other possible or claimed examples

I list here items in the literature that are dubious or without sufficient information to include in the catalogue.

Possible examples that are roughed out works-in-progress from an ancient workshop:

- II-IV CE. "La Perte" Cuperly, Marne, France. Prevot 2010; cf. Prevot 2009. Seven examples with lengths ranging from 101 to 142 mm, with an average of 123; widths ranging from 18 to 26 mm with five of the seven under 20 mm. Unfinished but rectilinear or slightly tapering.

Mentioned in the literature but too fragmentary to be evidential:

- Davis 2016, 9, nr. 7 is claimed as an example but is too chipped and fragmentary to know.
- The partial possible bone rules found alongside II.A.02 and III.A.03 (q.v.) are too fragmentary to ascertain whether a bone rule.

Objects claimed as examples, or closely associated with items in the catalogue, that may not or do not accommodate to the three basic styles catalogued here:

- Künzl 1982, 114-115, n. 7, pl. 90 nr. 7 from the Museum Carolino-Augusteum Salzburg; cf. Fünfschilling 2012, 174 and fig. 10. Found in the grave of an adult male in a cemetery in the Bürglstein district, along with a ceramic beaker, a glass bottle, a rubbing stone, spoon probe, a possible wax spatula (identified by Künzl as a knife), and an inkwell. Catalogued as probable medical instruments by Künzl; Fünfschilling identifies this as a writing set. The irregularities of lines and shape make this a dubious example in my view; Eckardt also expresses doubt (see remarks in Eckardt 2017, nr. 133). Dated to III CE from the shape of the glass bottle among the grave goods.
- Obmann 1997, p. 127, and 251, fig. 39 nrr. 1479-1480 (inv. X 17573 and X 3200 Archäologisches Museum, Frankfurt am Main) are both c. 5 to 5.5 mm thick and thus not likely bone rules; Obmann identifies as a label. Dated to I-III CE. from the history of the site of Nida.
- Associated by Obmann 1997, 127 nr. 1478 with Type III are: (1) Biro 1987, 39 Abb. 17,136 .137, from Gorsium, but the serrated head is differently styled; and in any case very partial. (2) Chirila 1972, 87 and pl. 126 nr. 2, from Buciumi (Dacia); the head while unperforated is styled like the perforated types but the whole is very small (length 57 mm, width 15-17 mm).
- Associated by Obmann 1997, 127 nr. 1481 with the rectangular type, from Numantia, is Paulsen 1930, 271, pl. 43B but there is no perforated hole and, though no dimensions are given, it appears very small. Not enough data to know.
- Beal 1983, p. 375, nr. 1332, pl. 63 (inv. 448, Lugdunum Musée [Musée Gallo-Romain de Fourvière], Lyon) is a rectangular, polished, double-convex object 77.2 mm long, 15.2 mm wide, and 3.5 mm thick. The thickness and roundedness on all edges and corners suggests some other implement. From the necropolis at Trion, but unknown whether from a grave context (see Beal 1983, p. 9).
- Greep 1998 under nr. 190 claims that the polished bone fragment is "probably from an object similar to" nr. 189, included here, but it has less straight and well-defined edges.
- Deschler-Erb 1998 cat. nr. 1969 is claimed as a writing implement by Bertrand 2008, 116, but that fragment tapers on both sides towards the head.
- Claimed at Artefacts.mom.fr (accessed 5/18/21) under type RGL-4006, is inv. D.2011.1.66.123 Musée Gallo-Romain, Biesheim, France (Roman site of Oedenburg), but that has a very different look to the blade, with a rounded foot and only roughly linear sides.
- The V -shaped groove on the side indicates a different object for items like Trumm et al. 2013 and Davis 2016, nr. 13, as Davis recognizes (p. 6); cf. discussion at Božič-Feugère 2004, 40.
- Claimed as a "bone 'ruler'" in Eckardt (Eckardt 2017, nr. 85) and published in Mercando 1974, nr. 12 and 120 pl. 41c is an object with parallel sides that at first looks like a rough form of our type III; but it is 55 mm long and only 7 mm width and 5 mm thick with a hole pierced through the thickness side of the head. Excepting the lack of inscription, these dimensions and features match exactly the *tesserae nummulariae* from Magdalensberg (see Gostenčnik 2001, 385 and fig. 5, 20-21).

Mentioned but unpublished and without further information:

- Von Boeselager 1989, 227 and n. 29 mentions an oral communication in 1988 by H.U. Nuber of an example excavated at Hofheim.
- An additional example of the tapering type is mentioned by Obmann 1997, 127 nr. 1478, from Kongen, Streufund Vicus, unpublished; and another in Aime, citing Gimard 1968, 21 Taf. 15.6, which however Obmann's bibliography notes as a typed manuscript—I have not been able to locate a publication of this work. (Obmann identifies these objects as labels.)
- Greep 1998, 283 lists without further detail possible unpublished British examples from London (Museum of London), Watts Wells (Ashmolean Museum, Oxford), and Silchester (Reading Museum), the latter two at least not captured in the catalogue here.

Bibliography

Bakker 1988. L. Bakker. “Ausgrabungen in Augusta Vindelicum an der ‘Langen Gasse’, Stadt Augsburg, Schwaben.” *Das Arch. Jahr in Bayern* (1988) 120-125.

Béal 1983. J.-C. Béal. *Catalogue des objets de tabletterie du Musée de la Civilisation Gallo-Romaine de Lyon* [*Centre d'Et. Rom. et Gallo-Rom., Lyon III, n.s. nr. 1*]. Lyon, 1983.

Bertrand 2008. Isabelle Bertrand. “Le travail de l’os et du bois de cerf à Lemonum (Poitiers, F): lieux de production et objets finis. Un état des données.” In I. Bertrand, ed., *Le travail de l’os, du bois de cerf et de la corne à l’époque romaine: un artisanat en marge? Actes de la table ronde instrumentum, Chauvigny (Vienne, F), 8-9 décembre 2005*. Chauvigny, 2008. 101-144.

Bezzi Martini 1987. Luisa Bezzi Martini. *Necropoli e tombe romane di Brescia e dintorni*. Brescia, 1987.

Bilkei 1980. I. Bilkei. “Römische Schreibgeräte aus Pannonien.” *Alba Regia* 18 (1980) 61–90.

Biró 1987. M. T. Bíró. “Bone carvings from Brigetio in the Collection of the Hungarian National Museum.” *Acta archaeologica Academiae Scientiarum Hungaricae* 39 (1987) 153-192.

Biró 1994. M. T. Bíró. *The bone objects of the Roman collection* [*Catal. Musei Nat. Hungarici, ser. arch. II*]. Budapest, 1994.

von Boeselager 1989. D. von Boeselager. “Funde und Darstellungen römischer Schreibzeugfutterale zur Deutung einer Beigabe in Kölner Gräbern.” *Kölner Jahrbuch für Vor- und Frühgeschichte* 22 (1989) 221-239.Bowman 1994.

Božič 2001a. Dragan Božič. “Su un bastoncello appiattito in osso da Aquileia.” *Instrumentum* 14 (2001) 23–24.

Božič 2001b. Dragan Božič. “A rare variant of Roman wax-spatulae.” *Instrumentum* 13 (2001) 32-33.

Božič 2001c. Dragan. Božič. “Doppelskalpell oder Zirkel?” *Instrumentum* 13 (2001) 18.

Božič 2002. Dragan Božič. “A Roman grave with writing implements from Llubljana (SI).” *Instrumentum* 16 (2002) 33-36.

Božič-Feugère 2004. D. Božič and M. Feugère. “Les instruments de l'écriture.” *Gallia* 61 (2004) 21-41.

von Carnap-Bornheim 1994. C. von Carnap-Bornheim. “Die beinernen Gegenstände aus Kastell und Vicus in Niederbieber.” *Bonner Jahrbücher* 194 (1994) 341-395.

Buora 1995. Maurizio Buora. *Aquileia romana nella collezione di Francesco di Toppo.* Milan, 1995.

Cermanović-Kuzmanović et al. 1975. A. Cermanović-Kuzmanović, O. Velimirović-Žižić, and D. Srejović. *Antička Duklja: Nekropole. [The Roman Cementary at Doclea.]* Obod, 1975.

Chirila 1972. E. Chirila. *Das Römerlager von Buciumi.* Klausenburg, 1972.

Ciugudean 1997. Daniela Ciugudean. *Obiectele din os, corn și fildeș de la Apulum*. Alba Iulia, 1997.

Cocchiaro-Andreassi 1988. Assunta Cocchiaro and Guiseppe Andreassi, *La Necropoli di via Cappucini a Brindisi*. Brindisi, 1988.

Cornago 2016. I.S. Cornago, "Los objectos de hueso de la tumba 150 de la necrópolis bérica de Túrugi (Galera, Granada): ¿instrumentos de escritura?" *Lucentum* 35 (2016) 91-97.

della Corte 1912. M. della Corte. "III. Pompei." *Notizie degli scavi di antichità* 9 (1912) 246-259.

della Corte 1922. M. della Corte. "Groma." *Monumenti Antichi* 28 (1922) 5-100.

Davis 2016. G.J.C. Davis. "Bone spatulae strips from Roman London." *Lucerna* 51 (2016) 6-12.

Deimel 1987. M. Deimel. *Die Bronzekleinfunde vom Magdalensberg*. Klagenfurt, 1987.

Deschler-Erb 1998. S. Deschler-Erb, *Römische Beinartefakte aus Augusta Raurica. Rohmaterial, Technologie, Typologie und Chronologie. Forschungen in Augst* 27/1-2. Vol. 1 Katalog; vol. 2 Text und Tafeln. Augst, 2005.

Duvauchelle 2012. Anika Duvauchelle. "Le mobilier métallique." In Daniel Castella, ed., *Le cimetière gallo-romain de Lully (Fribourg, Suisse).* Fribourg, 2012. 67-81.

Eckardt 2017. Hella Eckardt. *Literacies and material culture: metal inkwells in the Roman world* [data-set]. York: Archaeology Data Service, 2017 [distributor]. https://doi.org/10.5284/1039969

Eckardt 2018. Hella Eckardt. *Writing and power in the Roman world: literacies and material culture*. Cambridge, 2018.

Feugère 1978. M. Feugère "Les fouilles du Verbe Incarné, à Lyon: objets de parure et de toilette." *Direction des antiquités historiques Rhône-Alpes* 8 (1978) 54-63.

la Fragola 2015. A. la Fragola, "Instrumenta Scriptoria da sepoltura di età romana a cremazione." *Studi di Antichità* 13 n.s.(2015) 247-256.

Fünfschilling 2012. S. Fünfschilling. "Schreibgeräte und Schreibzubehör aus Augusta Raurica." *Jahresberichte aus Augst und Kaiseraugst* 33 (2012) 163–236.

Gabričevič 1983. B. Gabričevič. "Antička nekropola u Sinju." *Vjesnik za arheologiju i historiju dalmatinsku* [=*Bulletin d'archeologie et d'histoire dalmate*] 76 (1983) 5-101.

Gimard 1968. Georges Gimard. "Un habitat et une nécropole au lieu-dit 'Saint-Sigismond' à Aime." *Bulletin - Société d'histoire et d'archéologie d'Aime*. [Volume and page numbers unknown. Cited by Obmann 1997. *Non vidi*.]

Giunio 2010. Kornelija Giunio. *Ars medica et pharmaceutica. Rimski medicinsko-farmaceutski instrumenti iz fundusa Arheološkog Muzeja Zadar* [*Kat. i Monografije* 8]. Zadar, 2010.

Gostenčnik 2000. Kordula Gostenčnik, "Die Geräte zur Textilerzeugung und Textilverarbeitung vom Magdalensberg in Kärnten," *Instrumentum* 11 (2000) 18-19.

Gostenčnik 2001. Kordula Gostenčnik, "Pre- and Early Roman Bone and Antler Manufacturing in Kärnten, Austria." On *Crafting Bone: Skeletal Technologies through Time and Space*, edd. A. M. Choyke and László Bartosiewicz [BAR International Series 937]. Oxford, 2001.

Gostenčnik 2005. Kordula Gostenčnik, *Die Beinfunde vom Magdalensberg*. Klagenfurt, 2005.

Greep 1983. S. Greep. *Objects of animal bone, antler, ivory and teeth from Roman Britain*. Unpublished PhD thesis, University of Cardiff, 1983.

Greep 1998. Stephen Greep. "The bone, antler and ivory artefacts." In H.E.M. Cool & C. Philo (eds.), *Roman Castleford: excavations 1974-85. Vol. 1, The small finds.* Wakefield, West Yorkshire Archaeology Service (1998) 267-285.

Guyan 1985. Walter Ulrich Guyan. "Iuliomagus: das antike Schleitheim." In J. E. Schneider, A. Zürcher, and W. U. Guyan, edd., *Turicum, Vitudurum, Iuliomagus: Zürich, Winterthur und Schleitheim - 3 römische Siedlungen in der Ostschweiz*. Zürich, 1985. 235ff.

Hauser 1904. Otto Hauser, Vindonissa. *Das Standquartier römischer Legionen*. Zurich, 1904.

Keily 2006. J. Keily. "The accessioned finds." In S. Watson and K. Heard, edd. *Development on Roman London's western hill: excavations at Paternoster Square, City of London.* London, 2006. 92-107.

Klee 1986. Margot Klee. *Der Nordvicus von Arae Flaviae : neue Untersuchungen am nördlichen Stadtrand des römischen Rottweil* [*Arae Flavia* 3]. Stuttgart, 1986.

Kohl et al. 1906. W. Kohl, J. Tröltsch, J. Jacobs, W. Barthel and Ernst Fabricius: *Der obergermanisch-raetische Limes des Roemerreiches. Abt. B, Bd. 7, Nr. 72: Kastell Weißenburg.* Berlin, 1906.

Koster 2013. Annelies Koster. *The cemetery of Noviomagus and the wealthy burials of the municipal elite*. Nijmegen, 2013.

Künzl 1982. E. Künzl. "Medizinische Instrumente aus Sepulkralfunden der römischen Kaiserzeit." *Bonner Jahrbücher* 182 (1982) 3–133.

Lehner 1904. Hans Lehner, Die Einzelfunde von Novaesium. *Bonner Jahrbücher* 111/112 (1904) 243-418 with separate Tafelband.

Laugier 2002. Ludovic Laugier and Anne-Marie Guimier-Sorbets. *De l'Egypte à Pompéi : le cabinet d'antiques du duc d'Aumale: [exposition présentée au] Musée Condé, Château de Chantilly [5 juin au 9 septembre 2002].* Chantilly, 2002.

Martin-Kilcher 1991. Stephanie Martin-Kilcher. “Geräte und Geräteteile aus Knochen und Hirschhorn aus dem Vicus Vitudurum-Oberwinterthur.” *Beiträge zum römischen Oberwinterthur* [*Vitudurum* 5] (1991) 9-14; 61-75.

Mercando 1974. L. Mercando. “Regione V (Picenum).” *Notizie degli scavi di antichità* 28 (1974) 88-141.

Mikler 1997. H. Mikler. *Die römischen Funde aus Bein im Landesmuseum Mainz* [*Monogr. Instrum*. I]. Montagnac, 1997.

Nagy 1935. L. Nagy. *Mumienbegräbnisse in Aquincum*. Budapest, 1935.

Obmann 1997. Jurgen Obmann. *Die romischen Funde aus Bein von Nida-Heddernheim*. Bonn, 1997.

Öllerer 2001. Ch. Öllerer. “Die Darstellung von Schreibgerät auf norischen Librarierreliefs.” *Carinthia Romana* (2001) 249–262.

Paulsen 1930. R. Paulsen. *Die Funde von Numantia*. In A. Schulten, ed. *Die Ausgrabungen von Numantia, Bd 2. Die Stadt Numantia.* Munich, 1930. 225-281.

Pfahl 2012. S.F. Pfahl. *Instrumenta Latina et Graeca inscripta des Limesgebietes von 200 v. Chr. bis 600 n. Chr.* Weinstadt, 2012.

Plesničar 1980. Ljudmtla Plesničar, “Rimski grob z Dolenjske ceste [Ein Römergrab an der Autostraße Ljubljana-Zagreb]” *Situla* 20-21 (1980) 459-465.

Praschniker 1947. C. Praschniker. *Der Bäderbezirk von Virunum*. Vienna, 1947.

Prévot 2009. Philippe Prévot. “Le mobilier en os du site de Cuperly La Perte (Marne): éléments de culture matérielle d'une villa gallo-romaine.” *Bulletin de la Société archéologique champenoise* 102.2 (2009) 283-294.

Prévot 2010. Philippe Prévot. "Un atelier de fabrication de règles en os dans une villa gallo-romaine de Cuperly (Marne)? étude technologique d’ébauches de règles réalisées en série." *Revue archéologique de l’Est* 59.2 (2010) 539-565.

Roosens-Lux 1973. H. Roosens and G. Lux. “Grafveld met gallo-romeinse tumulus te Berlingen.” *Archaeologia Belgica* 147 (1973) 5–61.

Šaranović-Svetek 1981. Šaranović-Svetek, V., "Tipologija koštanih predmeta iz Sirmijuma [Typologie der Bein- und Knochen-gegenstände aus Syrmium]." *Rad vojvodjanskih muzeja* 27 (1981) 149-179.

Schaltenbrand Obrecht 2012. Verena Schaltenbrand Obrecht. *Stilus: kulturhistorische, typologisch-chronologische und technologische Untersuchungen an römischen Schreibgriffeln von Augusta Raurica und weiteren Fundorten* (2 vols.) [*Forschungen in Augst*, Bd. 45.1-2]. Augst, 2012.

Small et al. 2007. A. Small, C. Small et al. “Excavation in the Roman Cemetery at Vagnari, in the Territory of Gravina in Puglia, 2002.” *Papers of the British School at Rome* 75 (2007) 123-229.

Steiner 1911. Paul Steiner. *Xanten: Sammlung des Niederrheinischen Altertums-Vereins*. Frankfurt: J. Baer, 1911.

Trumm et al. 2013. J. Trumm, M. Flück et al. *Am Südtor von Vindonissa* [*Ver. Ges. Pro Vindonissa* 22]. Brugg, 2013.

Wardle 2002. A. Wardle. “The Roman finds.” In E. Howe, ed., *Roman defenses and medieval industry: excavations at Baltic House, City of London*. London, 2002. 85-89.

Zsidi 1995. P. Zsidi. *Gods, soldiers and citizens in Aquincum*. Budapest, 1995.