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The origin and development of insular geometric letters

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THE ORIGIN AND DEVELOPMENT OF INSULAR GEOMETRIC LETTERS

Thesis submitted for the degree of Doctor of Philosophy

at the University of Wales, Bangor, 2006

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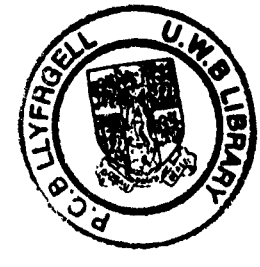
Illustrations

D. G. CHARLES-EDWARDS

UNIVERSITY OF WALES, BANGOR



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10:14. The *Tome* inscription at Port Talbot, *ECMW* no. 259.

10:15A. The *Geligui* inscription at Port Talbot, *ECMW* no. 260.

10:15B. A painted version of the *crux Christi* made with an elder-stem pen that functioned on a stone surface as well as sugar paper.

10:16A. Anglo-Saxon mixed-alphabet inscription from Dewsbury I, Okasha no. 30.

10:16B. Anglo-Saxon mixed-alphabet section from Falstone, Okasha no. 39, from a bi-alphabetic inscription in Anglo-Saxon and Runic.

10:17A. The Llanlleonfel inscription, *ECMW* no. 62.

10:17B. The St Paul's Jarrow dedication slab, Okasha no. 61.

Appendix 1

1. To show brush lettering on stone, and the effect of

A. Rolling the brush into a stroke-entry

B. Lifting off the brush, as the stroke is pulled, to achieve a thinning 'tail'

C. Brushed letters on a poor-surfaced Pennant sandstone showing rolled entry into **l** and the effect of halting the stroke with the stock in full contact with the surface, at the finish of the bow of the **e** and the **eg** ligature bar, producing the clotting of paint that gives a lobed line end.

2. Light cursive letters written with a stylus in clay, showing the effect of stylus writing in wax. Looped entries are freely made.

A. Shows the ligaturing of 'e' and the square-footed turn out of the **l** which is a feature of Rustic written with a stylus.

B. Shows the extent to which curved strokes may be thrown with ease, in the **b**, and the **ec** ligature which we find transferred to stone in the period before the establishment of a canonical half-uncial.

3. Replica votive plaques cut in clay with a chip-carving knife. Once the clay was hard, it was possible to make foil impressions from the surface of the clay.

A. The **alpha** shows a different solution from the avoidance of a straight bar joining the diagonals.

B. The common solution of angle-bar **alpha** is shown in this example.

4. Rubbings of two examples of the letter **I**, cut in seasoned oak on vertical grain

A. With a stop at each end.

B. Without stops.

On a three-inch letter such as this, if the downstroke was not provided with stops, then the stroke ripped up the grain of the wood by about half an inch in each case.

5. Line endings knife-cut in wood.

A. Well-seasoned fine-grain pine showing the kind of pyramidal stop used by woodcarvers such as that found on the Lemanaghan bog staff.

2. Poor-quality softwood showing simple angled stops with a curved cut into the downstroke from each end.

6. Chip-carving techniques.

A. Lentoid bar chip-carving knife-cut in pine.

B. Angle-bar **A** chip-carving knife-cut in softwood.

7. Letter **E** shown

A. Cut in Quarella stone, to demonstrate the advantage of isolating the serifs from the secondary strokes.

B. Cut in pine down the grain, showing the sharpness of cut across the grain, and the relative softness down it.

8. Letter **A** shown

A. Knife-cut in steatite (Shetland soapstone), showing the clean detail possible without chisel work

B. A well-defined impression from the above in clay.

9. Rubbing from an Ogham inscription in Sutton stone, showing

A. The destruction of the arris, rendering the Ogham illegible when strokes are hammered right up to the edge.

B. An X-shaped Ogham character with the diagonals intersecting on the arris, showing similar destruction.

10. Experimental Ogham characters

A. In Sutton stone made by scoring rather than chiselling, resulting in less destruction of the arris.

B. Three Ogham strokes taken to the edge of an adamantine whinstone, made by violent chiselling. It was not possible to damage the arris.

11. Letters made using the bore and score technique, replicating the Brittany *Beladore* inscription

A. Isle of Man shaley slate. The surface of this stone makes it necessary to mark the ends of the letter-form first, to prevent slipping. Boring by drill or awl is an effective method of limiting the scores.

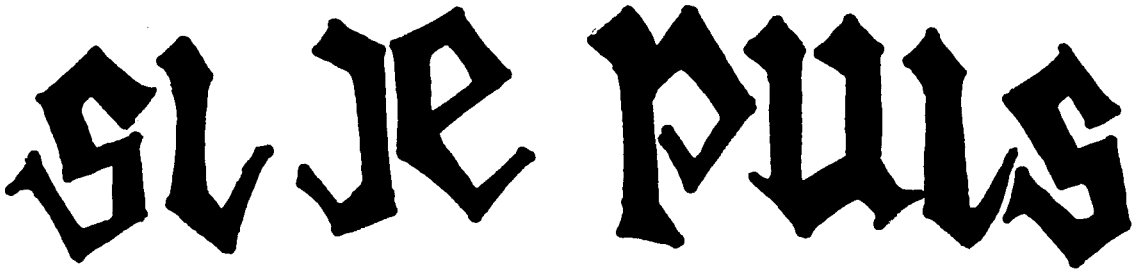
B. The same letters bored and scored in fine-quality Bethesda slate.

12. Letters cut with a round-end chisel in Bloomhill sandstone, from Clonmacnoise, showing the finish possible with a tool that is not sharp-edged.

A. Angular letters.

B. Seriffed letters.

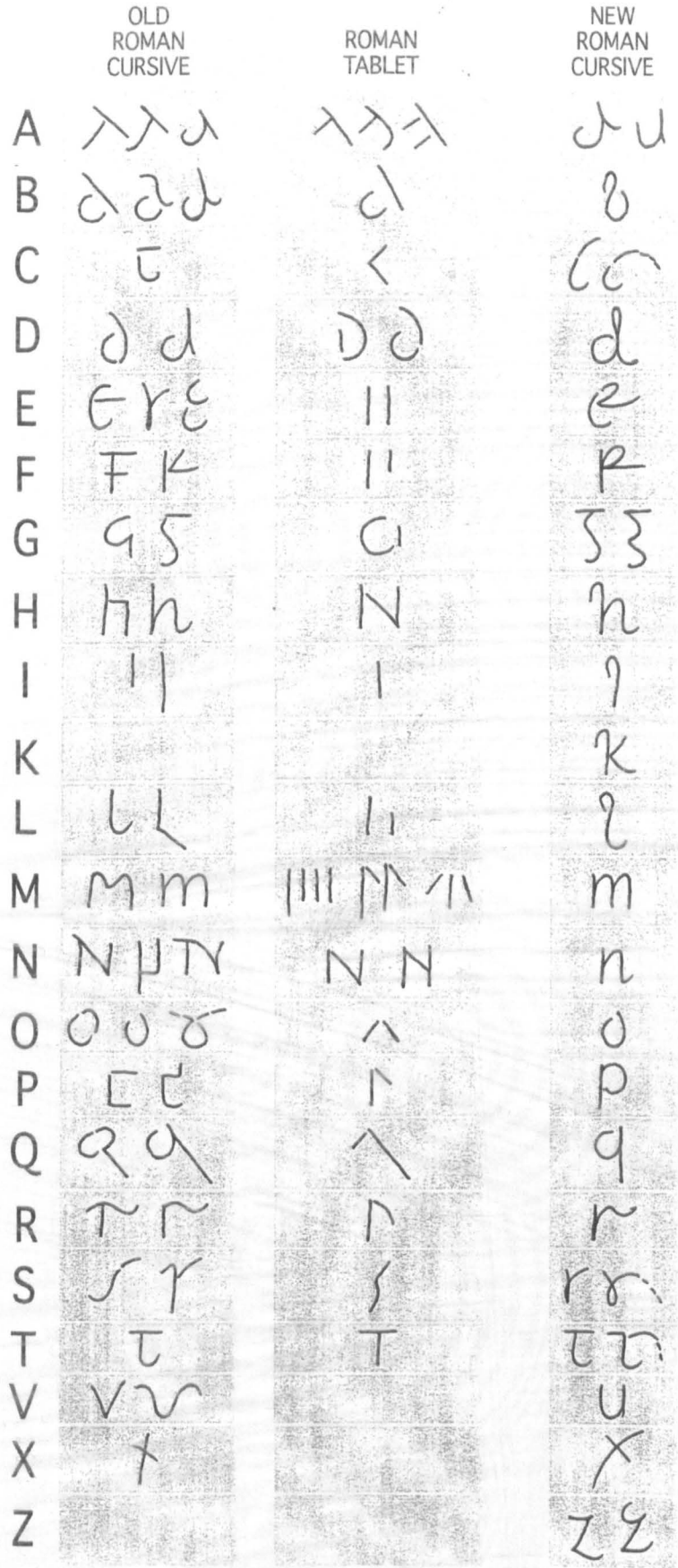
The bifurcated serif in B was made with no spalling at the junction with the bow of **h**. The angular letters of A were significantly easier and quicker to incise.



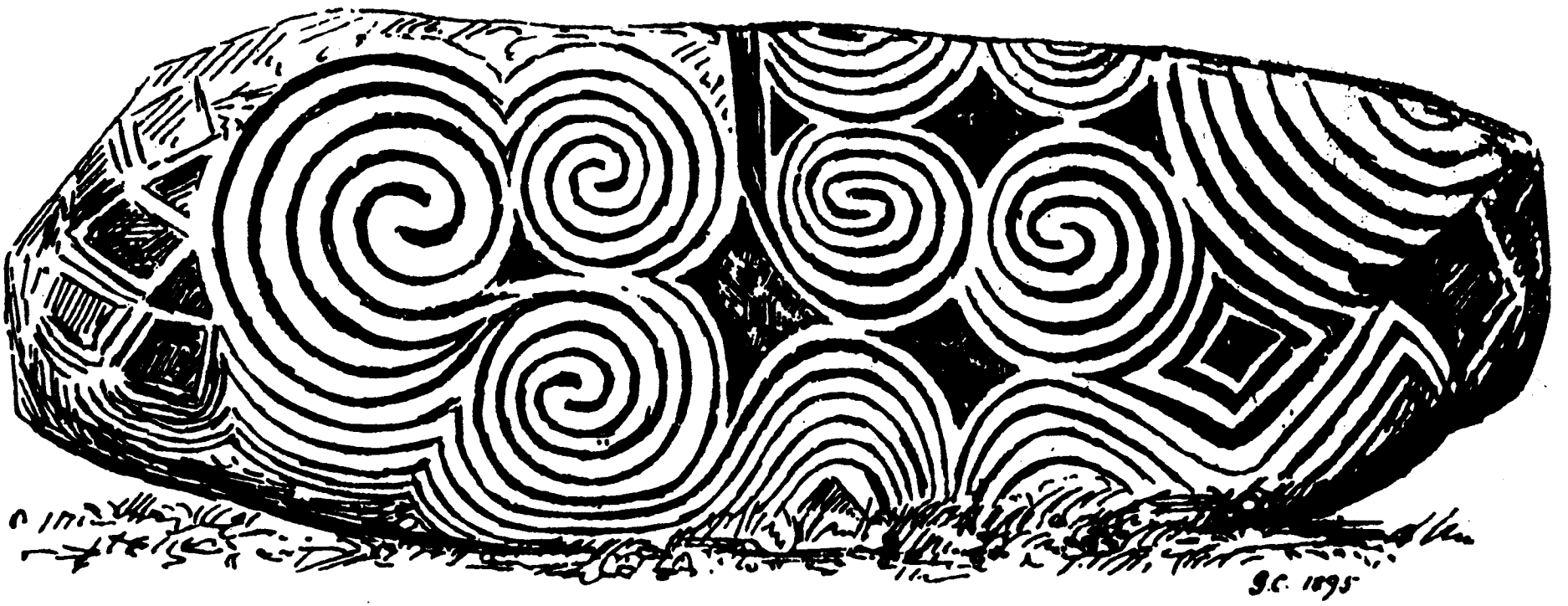
A

B

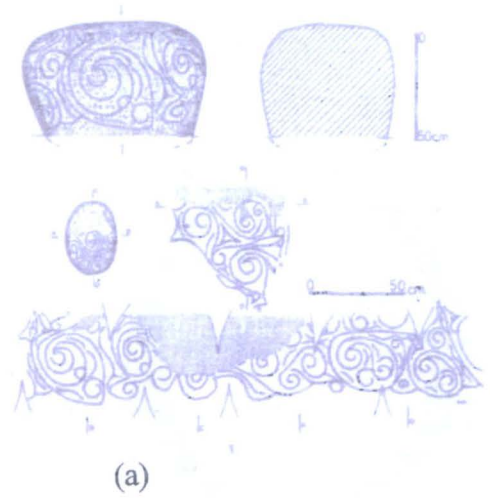
I: 1. A, Gothic-style lettering by William Morris, drawn and filled. This is the personal motto of Morris (trans.) 'If I can', it was embroidered, carved or engraved on his peronal possessions and is now used by the William Morris Society on their ephemera; B, the same letters written with a broad-edge pen, written by G. C-E.



1: 2. Diagram: Roman cursive minuscules, first to fifth centuries; by G. C-E after Bischoff.

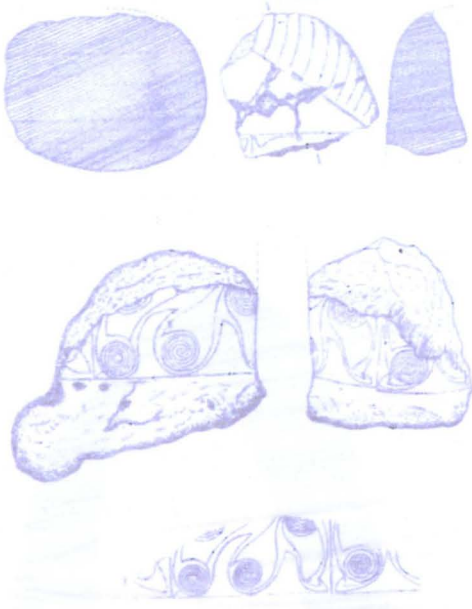


I: 3. Neolithic kerbstone decorated with spirals and lozenges at Newgrange, Co. Meath, after Coffey.



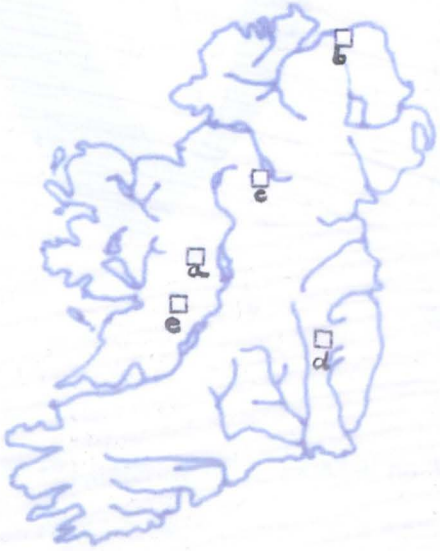
(a)

(b)



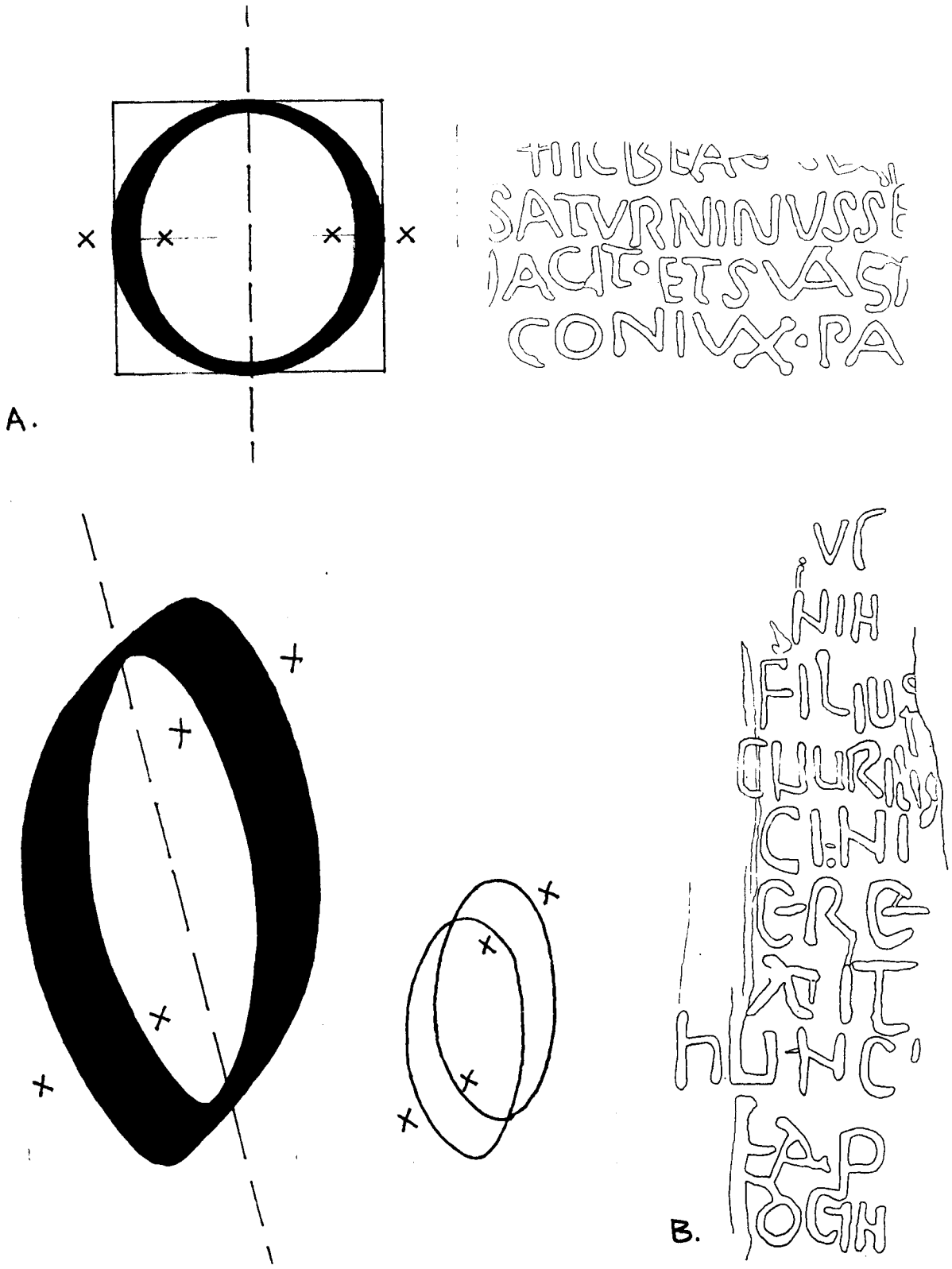
(c)

(d)



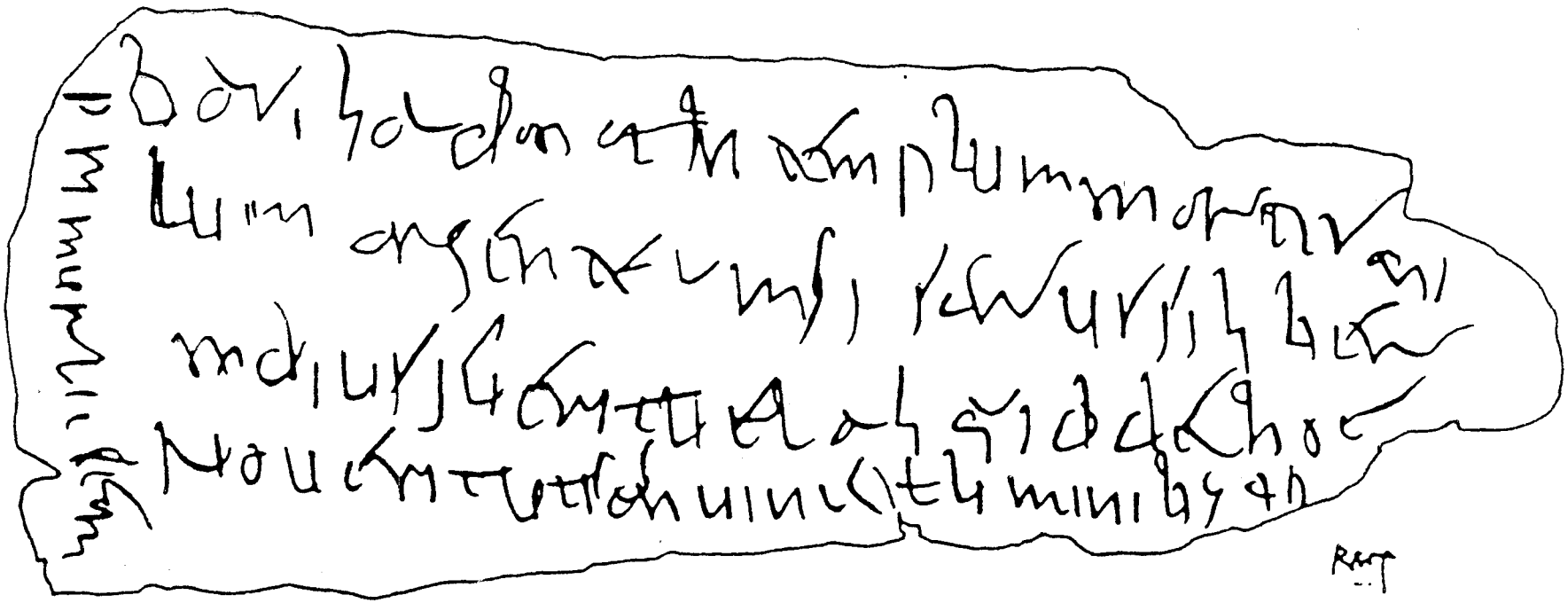
(e)

1: 4. Iron Age monoliths, a - e, with elaborate carving that has close parallels in metalwork a. Castlestrange, Co.Roscommon, b. Derrykeigan, Co. Antrim, c. Killycluggin, Co. Cavan, d. Mullaghmast, Co. Kildare, e. Turoe, Co. Galway, with distribution map after B. Raftery 1964.

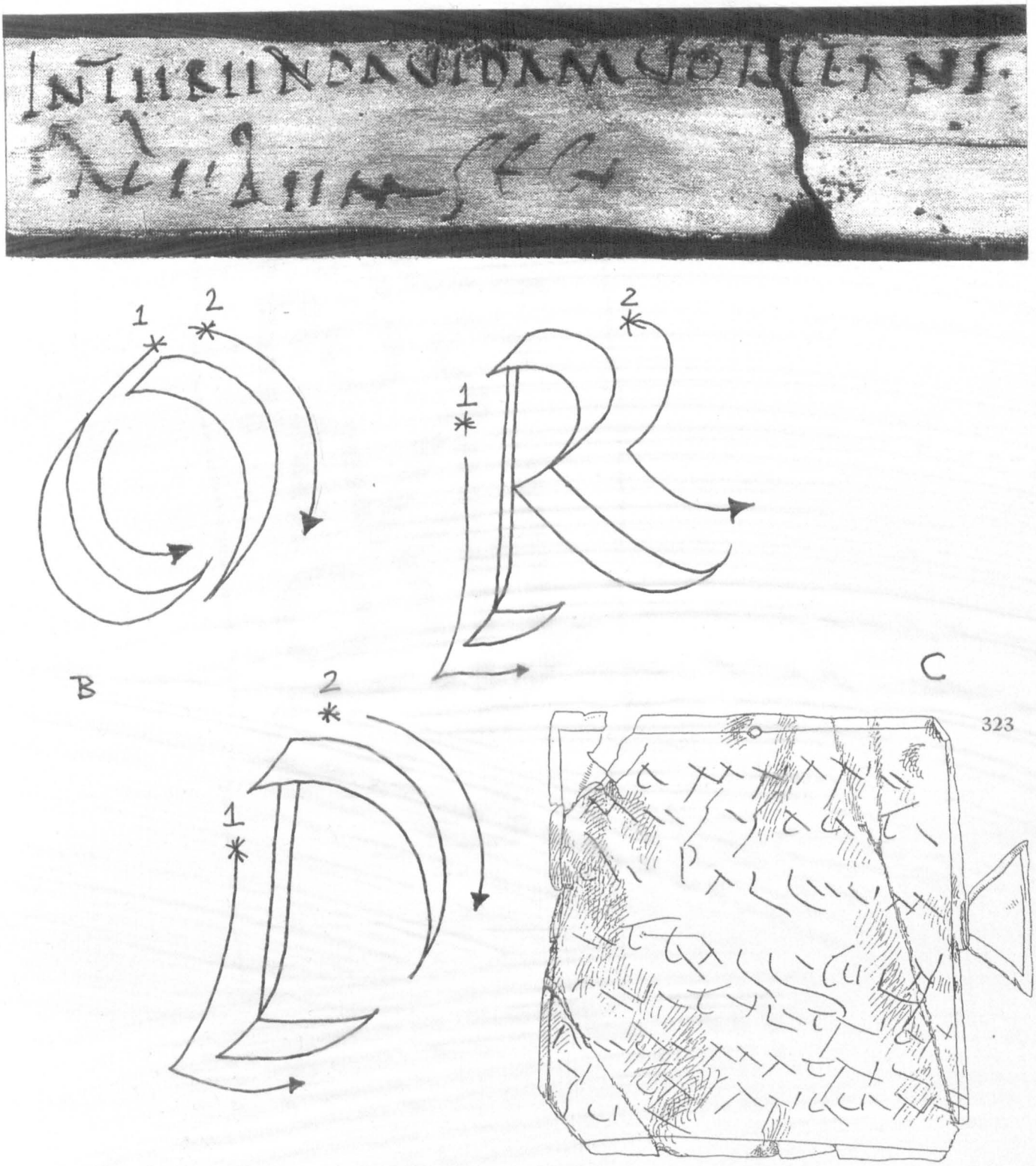


1: 5. The lettering of A, ECMW no.32 and B, no.35, from Anglesey, showing the transition from round-bowed curves, on a square plan, to the more elongated bows of Rustic capitals, on an oblong plan. This illustration shows the elongation of form in bowed strokes that is characteristic of minuscule and Rustic capitals. ECMW no.32 has bows on the square plan, but ECMW no.35 has bows on the oblong plan.

2: 1. Table of Roman scripts, after H. Meyer. a. Roman Lapidary characters, brush painted, of the first century. b. Square capitals, written with reed or quill, first to fourth centuries. c. ORC, majuscule Old Roman Cursive of the first and second centuries.d. NRC, minuscule New Roman Cursive from the third century. e. Rustic capitals of the fourth to fifth centuries. f. Uncial Capitals of the fourth to fifth centuries. g. Roman half-uncials of the fifth century. h. Irish half-uncial of the eighth century.

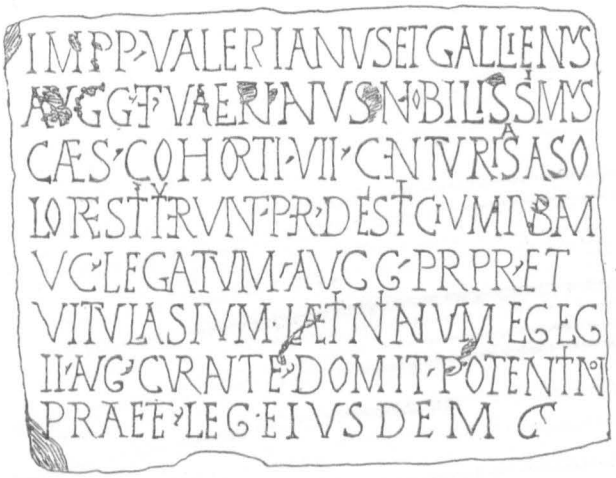


2: 2. Tabellae Sulis no.97, after Tomlin. Here we see many of the cursive ligaturing habits of NRC, in a British setting: the subscript 'i' in the 'li' ligature of 'basilia', the 'te' ligature of 'templum'and 'argenteum' that will persist into the times of the Springmount Bog Tablets, and appear on some of the more freely lettered inscriptions of the ECMW Group I period.



2: 3. A. Tab. Vindolanda. II. 118 (a line of Vergil's *Aeneid*). Showing Rustic capitals well written with a reed on wood, after Bowman; B, analytical diagram of the Rustic forms in A, showing details of pen movements; C, ansate tablet in lead from Caerleon, RIB no.323, showing cursive use of the double vertical 'e' which is unusually employed in the Rustic capitals of A, at 'Interenda', but there is a normal Rustic 'E' following in the line at 'Volens'.

2: 4 . Late Roman milestone from Glamorgan, RIB no.2255, showing low standards of letter-design and cutting, and the use of cursive forms, especially in the vertical drives of the **M** downstrokes, after RIB. Quadrangular block of sandstone H, 635mm by W, 255mm by D, 230mm (H, 25 in. by W, 10in by D, 9in.).



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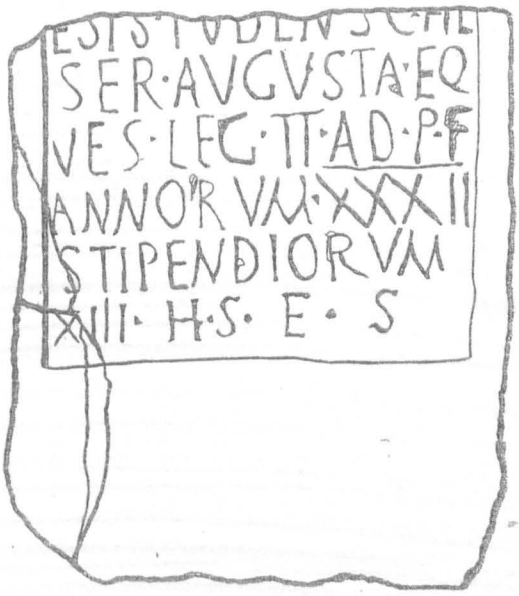
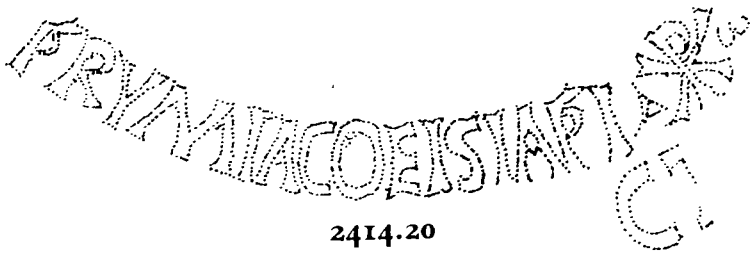
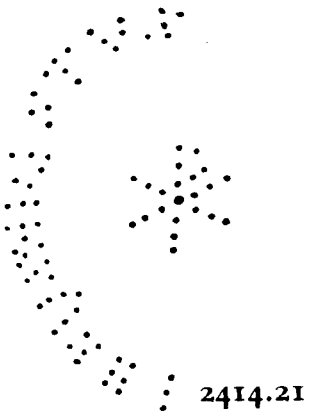


2: 5 A and B. Rustic capital style inscriptions from Caerleon and Chester, RIB nos. 334 and 482.

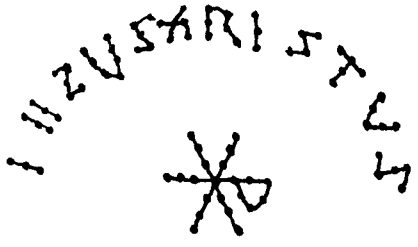
2: 6. The inscription to CUNORIX from Wroxeter, after Wright and Jackson.



2414.20

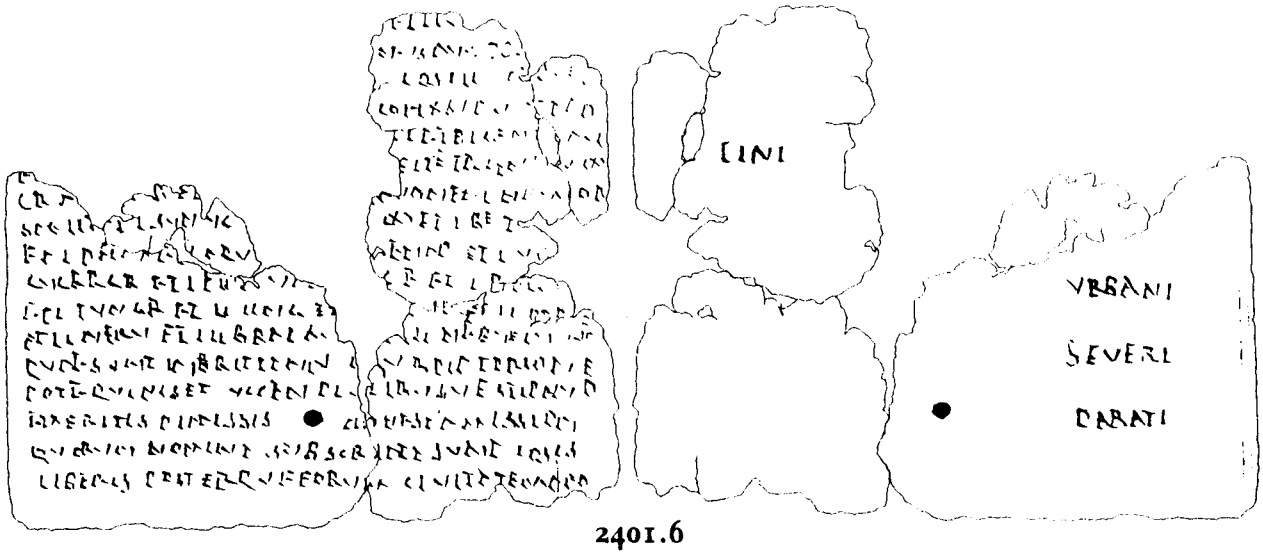


2414.21



2: 7.A, Traprain Law hoard, pointilliste inscription on a silver flagon, RIB no 2414. 20, and, from the same hoard, B, RIB no.2414.21 a hemispherical inscription punched through on the handle of a silver strainer, alos using a double vertical form of **E**. The second copy of this inscription shows the lines of its dots joined to make the letters more legible.

DIPLOMATA : STANNINGTON



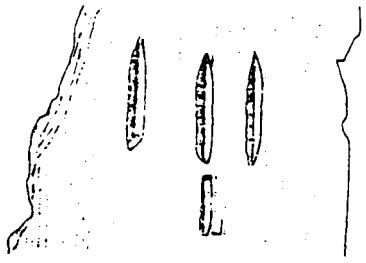
2401.6

2:8. Military diploma from Stannington, Yorks., RIB no. 2401.6. Angular letterforms executed in chased strokes with a graver. An enlargement of a detail is shown in ILLUS. 5: 9.

6. Cut on a plank, not of oak, length 840 mm, width 186 mm, thickness 26 mm, used as walling in the west tower of the South Gate of the Flavian fort; precise date uncertain.

incised: III | I

l.2 is cut with a shorter blade.



2444.6

7. On an oak plank found in demolition-debris dating to the early 80s in the west tower of the South Gate, cut with a chisel across the grain: ■■■■

Perhaps 'Four'

2444.7

8. On an oak plank lining a Flavian drain in the west tower of the South Gate.

cut with the grain: IIIIV

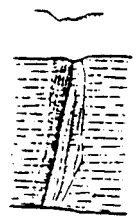
Presumably VIIII retrograde, 'Nine'.

The plank carries nails not relevant to its function in the drain and was presumably re-used there. The context dates to the late 70s, and the plank may therefore have been cut at the foundation of the fort, *c.* A.D. 72–3.

2444.8

9. On an oak post in Building [3858], height 1100 mm, width 92–115 mm, thickness 65–97 mm.

cut across the grain: I



2444.9

10. On an oak off-cut found in a post-trench of Building [3858], length 610 mm, width 175 mm, thickness 115 mm.

cut across the grain: I or (?) V

The surface may have been trimmed down, removing half a V; compare the right-hand stroke of *RIB* 2444.17.

2444.10

11. On an oak post in Building [3858], height 619 mm width 125–142 mm, thickness 73–81 mm.

cut across the grain: I or (?) V

See note to No. *RIB* 2444.10.

2444.11

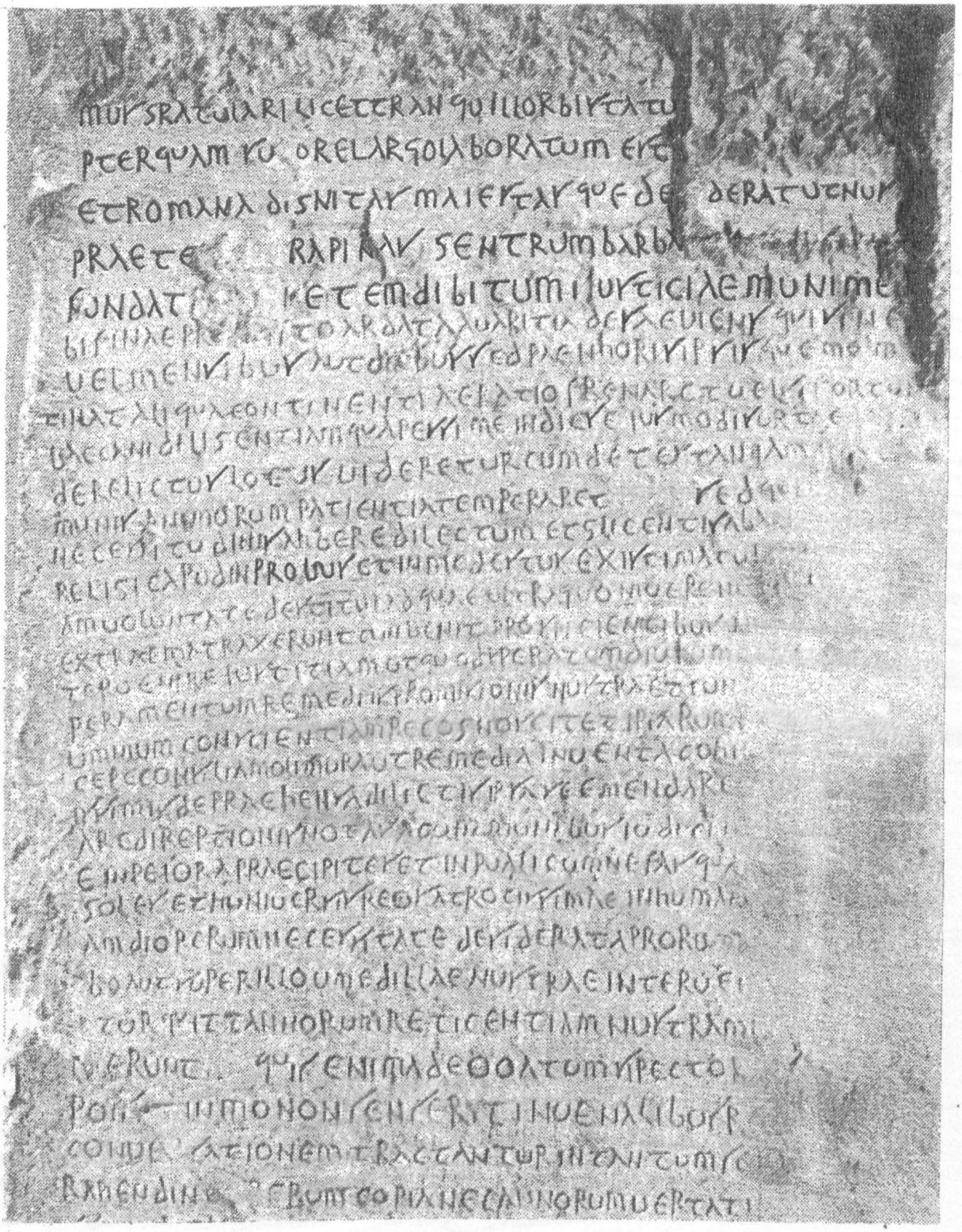
2: 9. Builder's guide marks cut in timber, from Carlisle, dated by dendrochronology to AD 83-4+. RIB 2444.18. A reconstructed fort gate with surviving cill-beam is now on display at Tullie House Museum.

1859

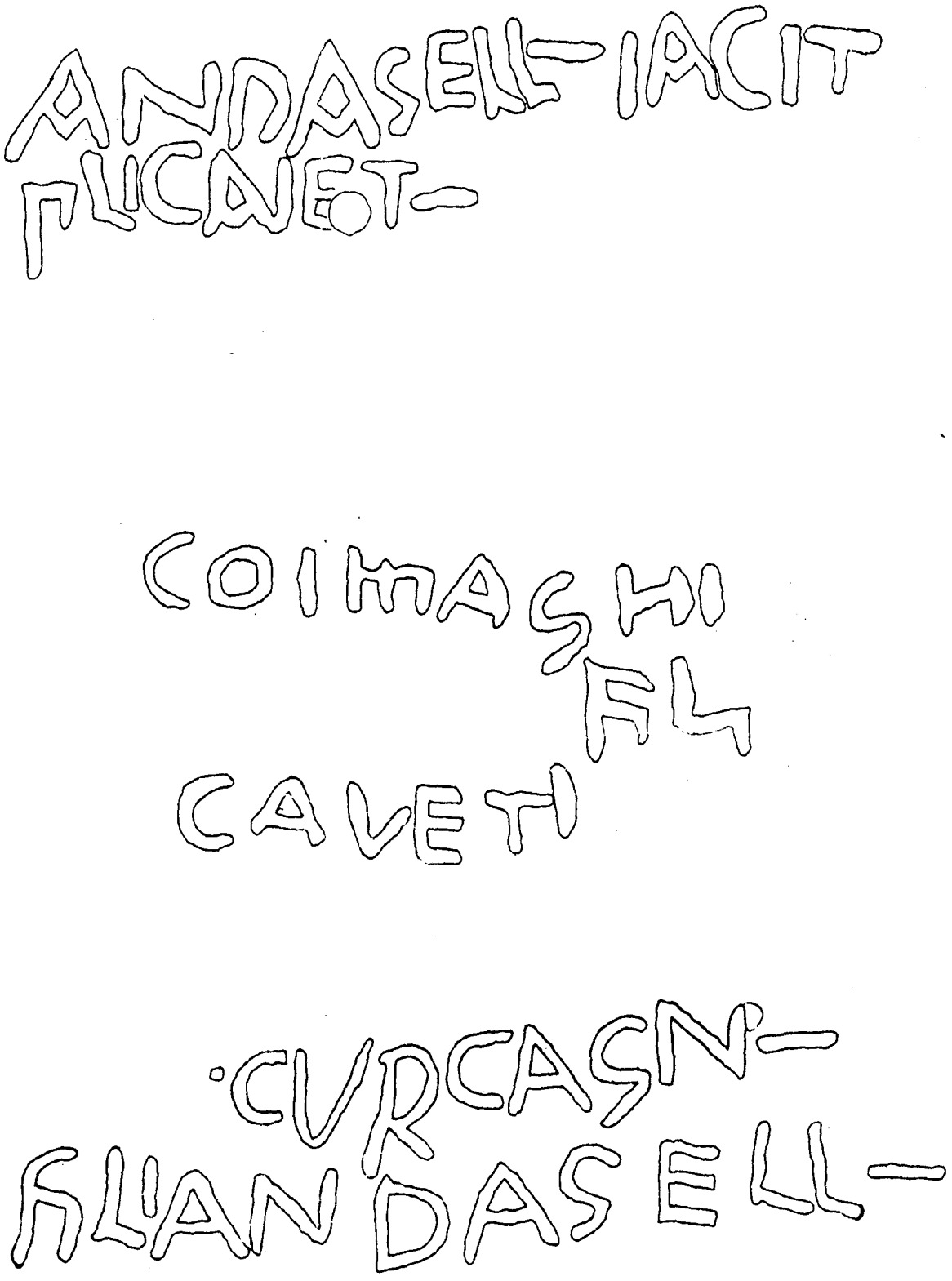
2164

2: 10. Prototype forms of angle-bar 'A' on building stones of the mid-second century from the Antonine Wall, RIB nos. 2164, 2208, and 1859.

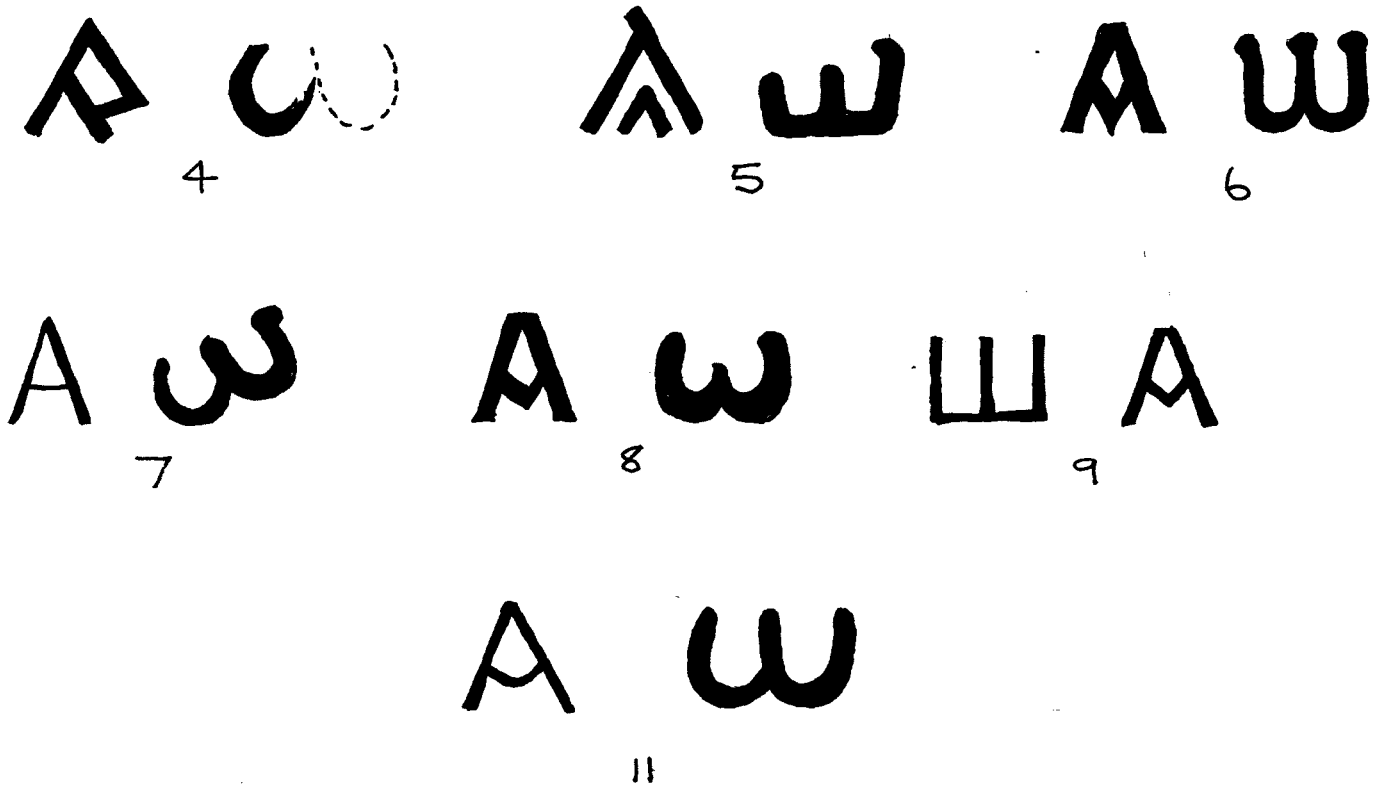
2: 11. Memorial to Calumniosus from Rome, AD 471, low-grade capitals with fish-tail serifs, CIIL no. 99.



2: 12. Part of Diocletian's edict on prices from Platea, in a documentary hand, Crete, AD 301. CIIL no.81. The relevant lettering has been emphasised.



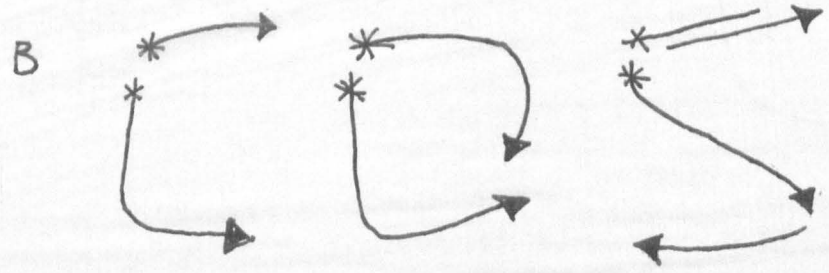
2: 13. Group I memorials with vertical inscriptions commemorating Cavetus, Andagellus and Coimagnus. ECMW nos. 313, 314 and 345, after Nash-Williams.



2: 14. Diagram of **alpha** and **omega** letterforms from the Water Newton hoard of silver votives. After RIB nos.2431. 4-9 and 11.

2: 15 A. Photograph, by Mick Sharp, of the 'Justinus' stone at Penmachno, ECMW no. 104, with B, a diagram showing the stroke sequence of the construction of C, O and S. Compare with C, the ECMW drawing.

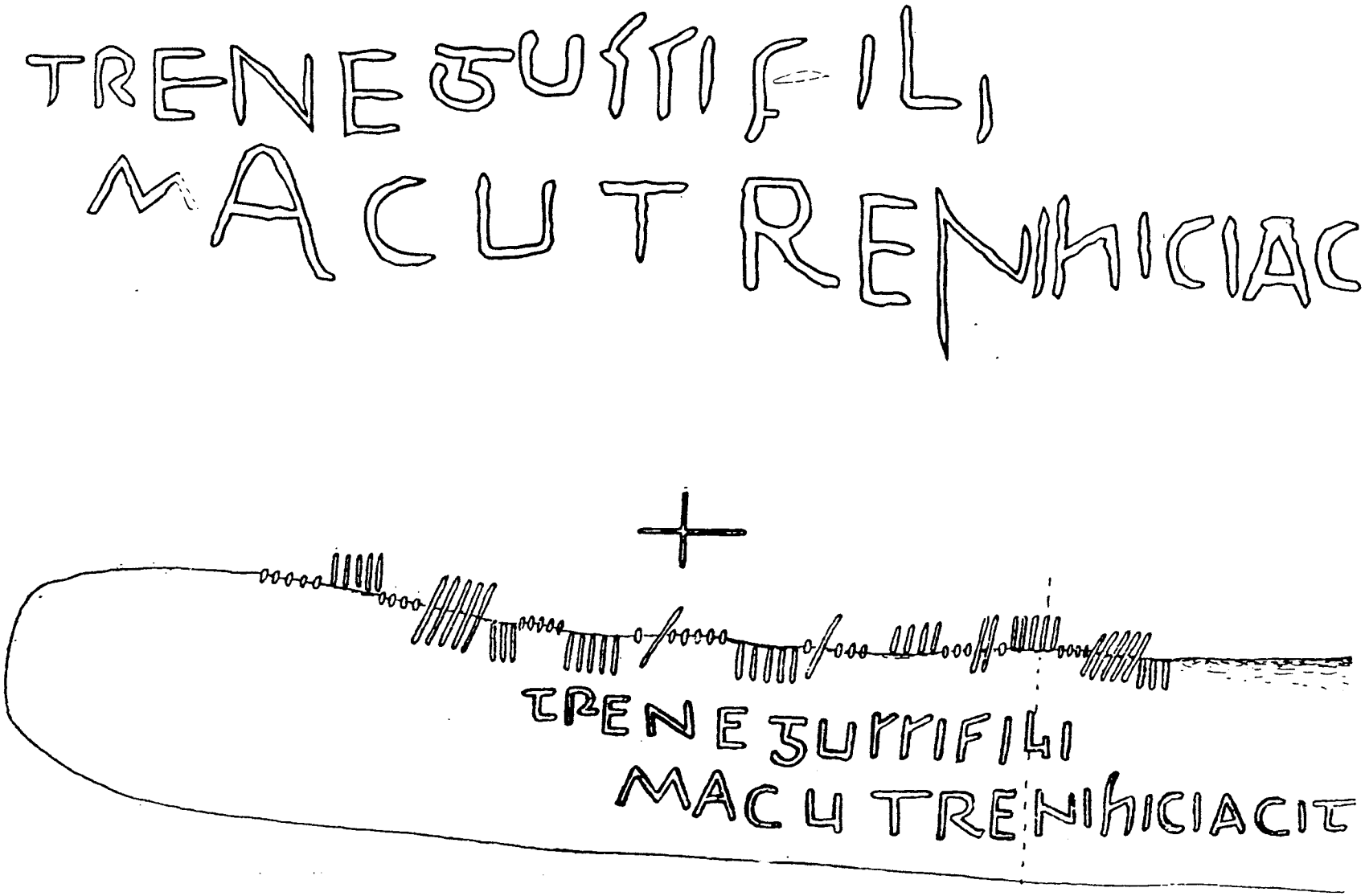
A



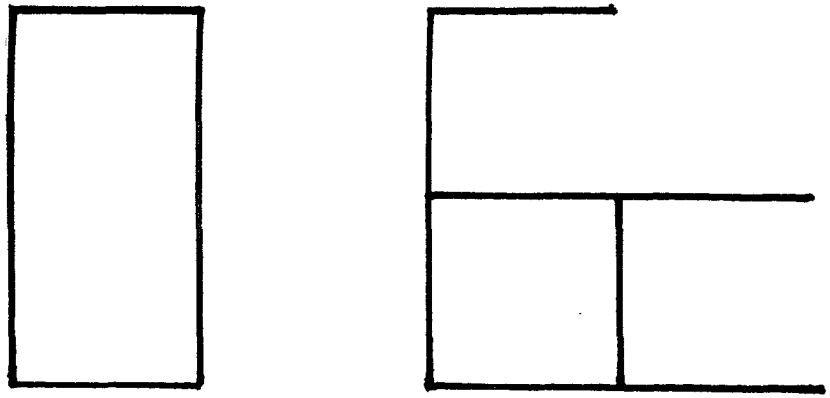
B

C

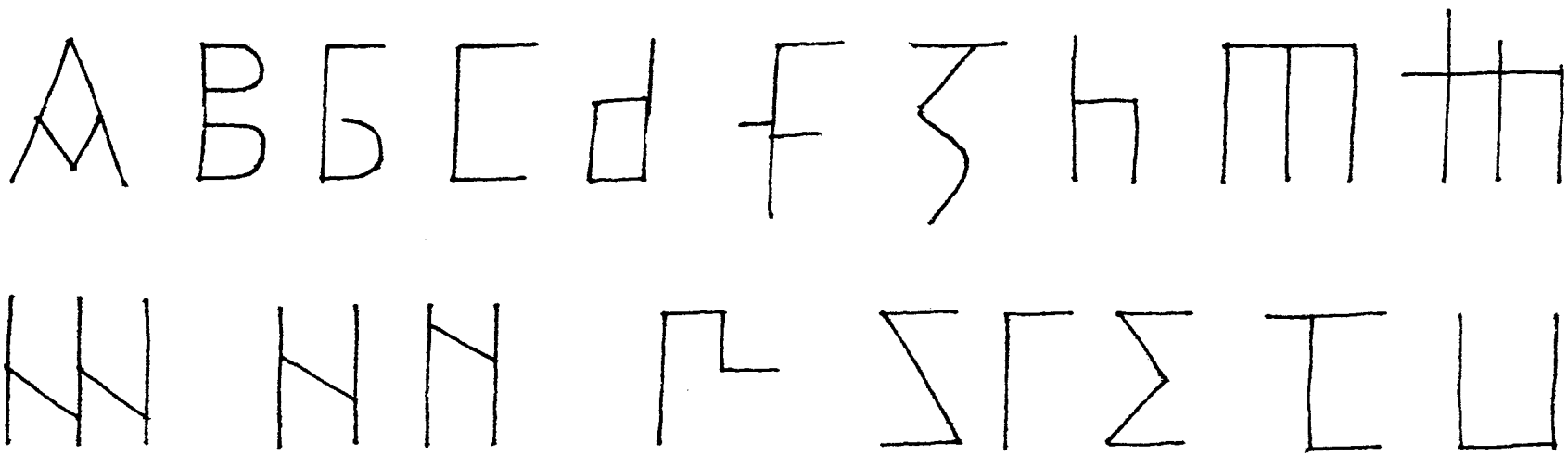
No. 104.



2: 16. The 'Trenegussus' inscription, Cilgerran, Pembs., ECMW 305; drawing by A, V. E. Nash-Williams, B, drawing by R.A.S. Macalister.

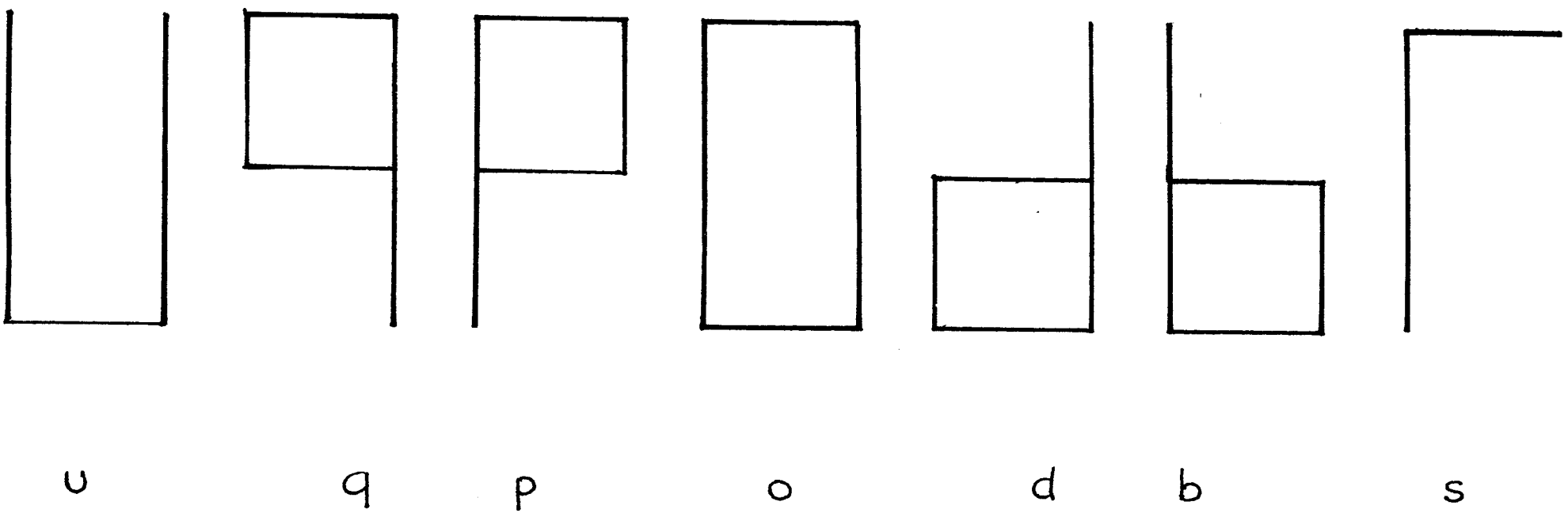


2: 17 A. The rectangular **O**, and related **ET** ligature, diagram.



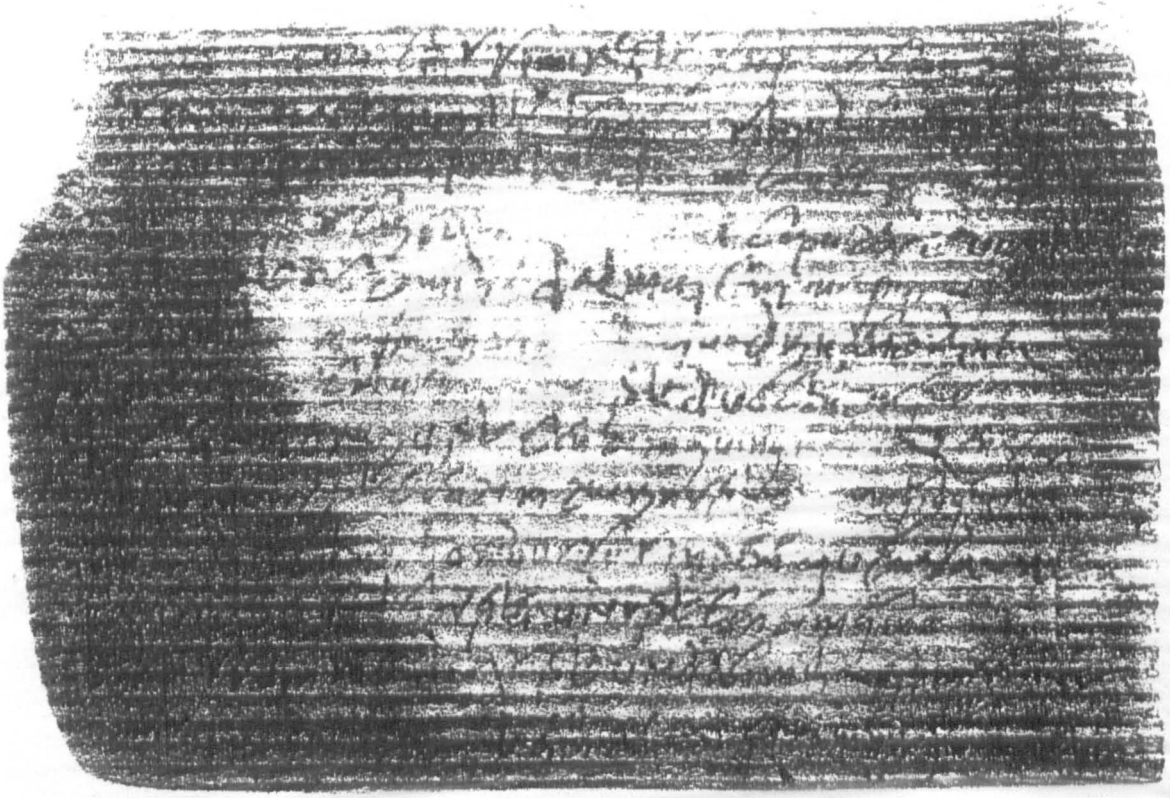
2: 17 B. Protoforms of the epigraphic angular alphabet in ECMW Group I, drawn from stones and schematised.

2: 18. Half-uncial penforms with, below, corresponding angularized forms.



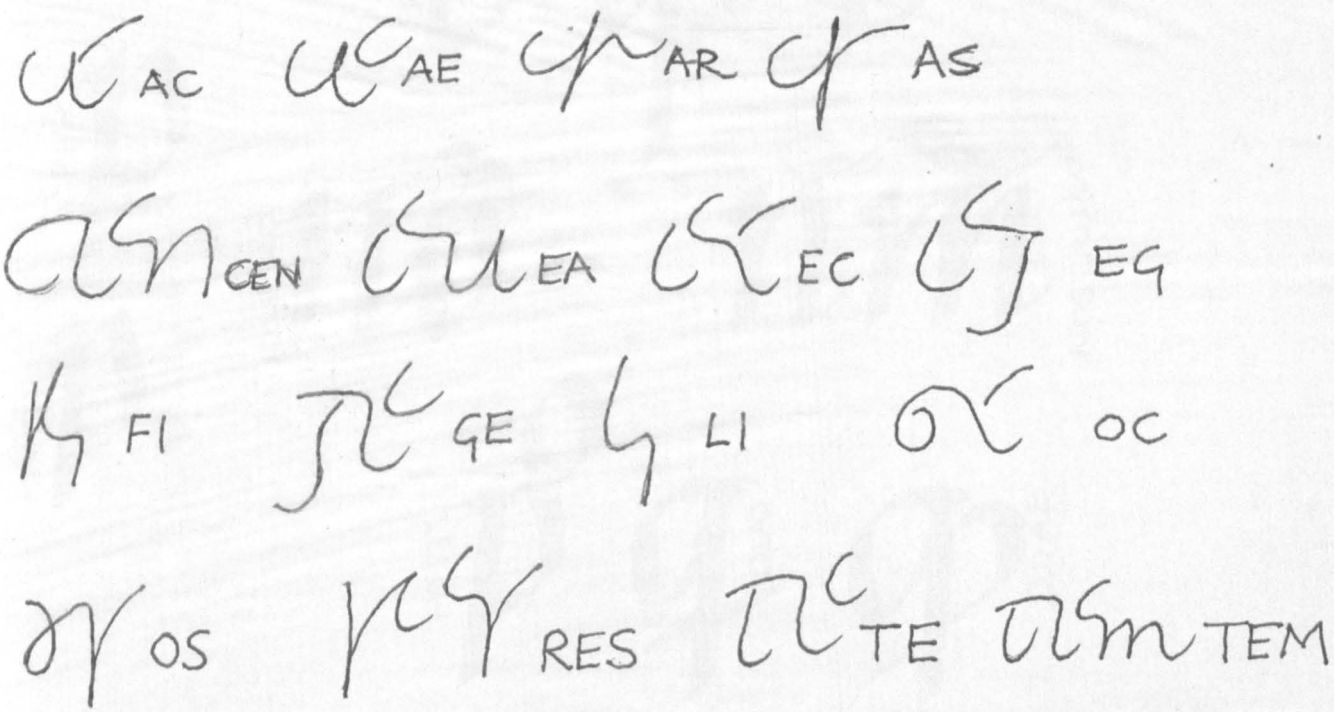
2: 19. Disposition of minuscule forms of **d / b** and **p / q** in a two-line layout with a full-sized rectangular **O**.

3: 1. Albertini tablet, late fifth-century script from Vandal Africa, reed on wood, after Courtois.

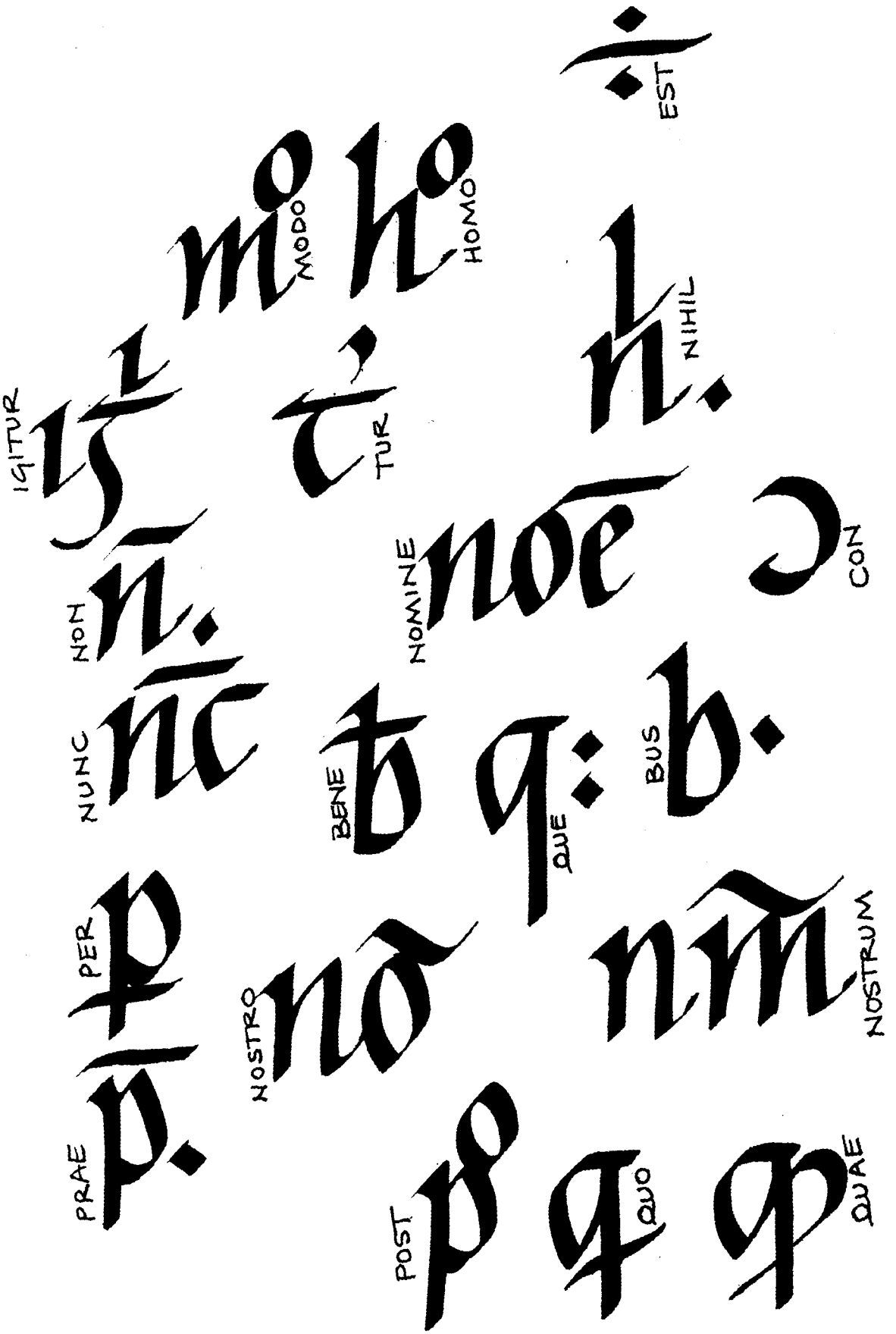


Dowry list of Geminia Januarilla – one of the *tablettes Albertini* of the Vandal period. Now in the Stéphane Gsell Museum, Algiers

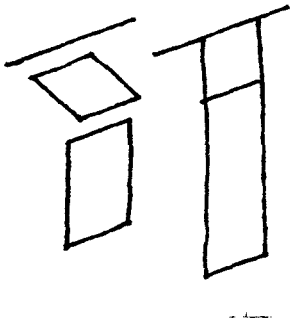
3: 2. Abbreviations from the Roman cursive of the Albertini tablets, drawn after Courtois' lists.

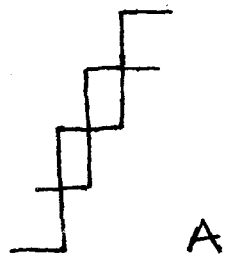


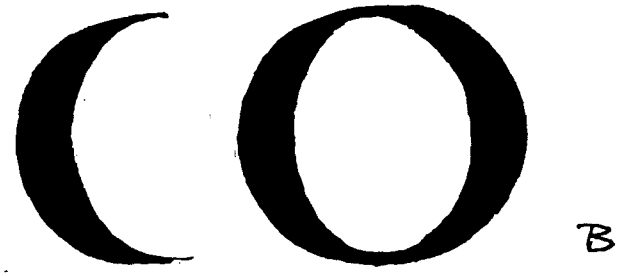
Abbreviations from the Book of Mulling, written with an o nib, G.C-E.



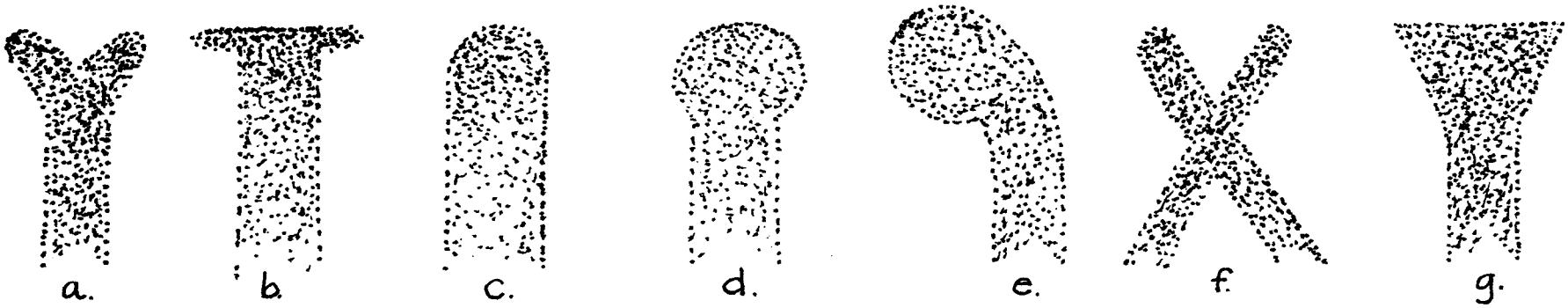
3: 4. Diagram showing inflection from thick to thin in serifs, with stroke sequence.





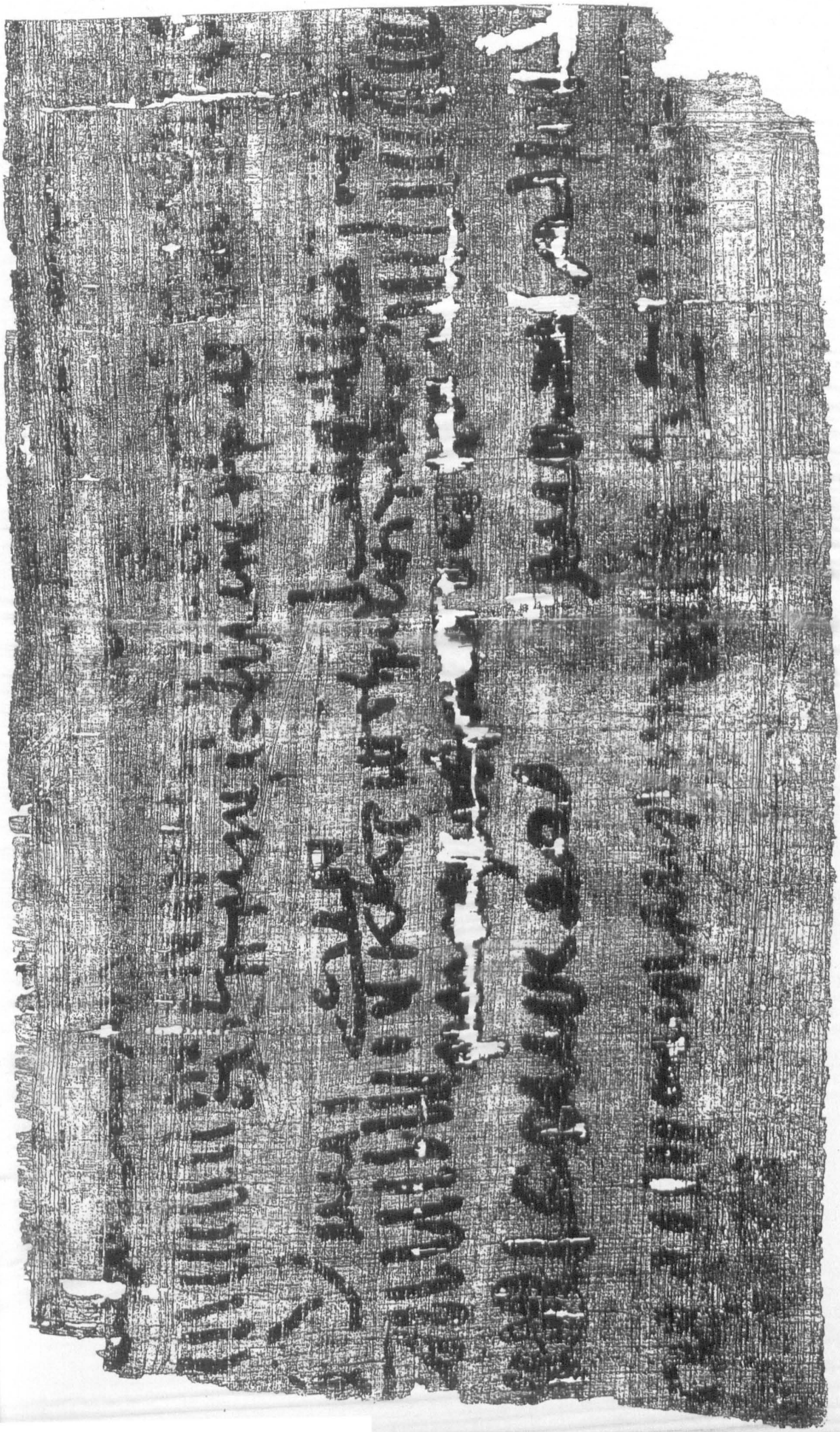


3: 5A. Construction of letter height of writing line by placing four broad nib-widths one above the other horizontally; all measures on the page layout are consequently multiples of the scribe's nib-width, which he must be able to replicate each time he re-cuts his nib. B. Inflection from thick to thin in bows within the writing line.



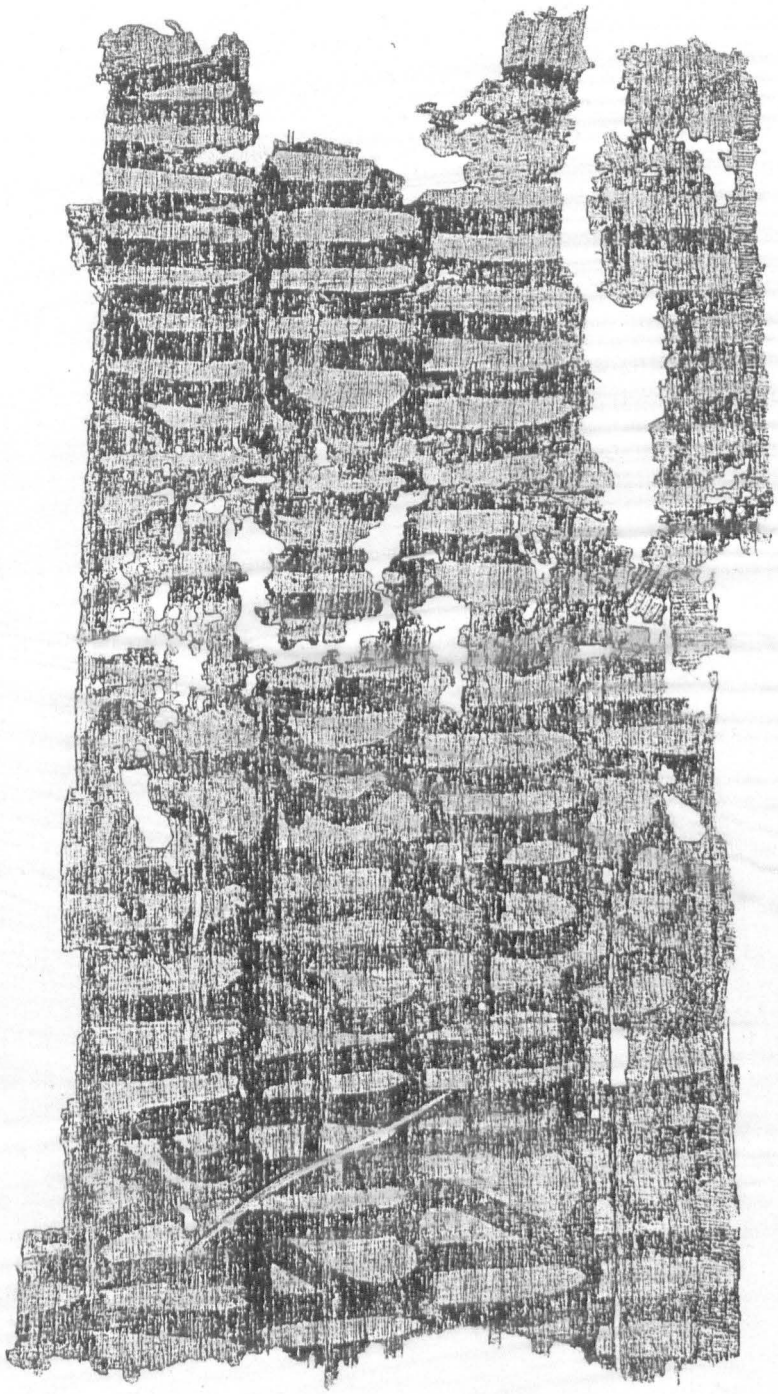
3: 6. The line-ends of ECMW Group I inscriptions: a. fishtail. b.bar. c. rounded-end. d. clubbed. e. looped. f. wigwam or cross-over. g. symmetrical.

3: 7. Papyrus protocol, Arab period.



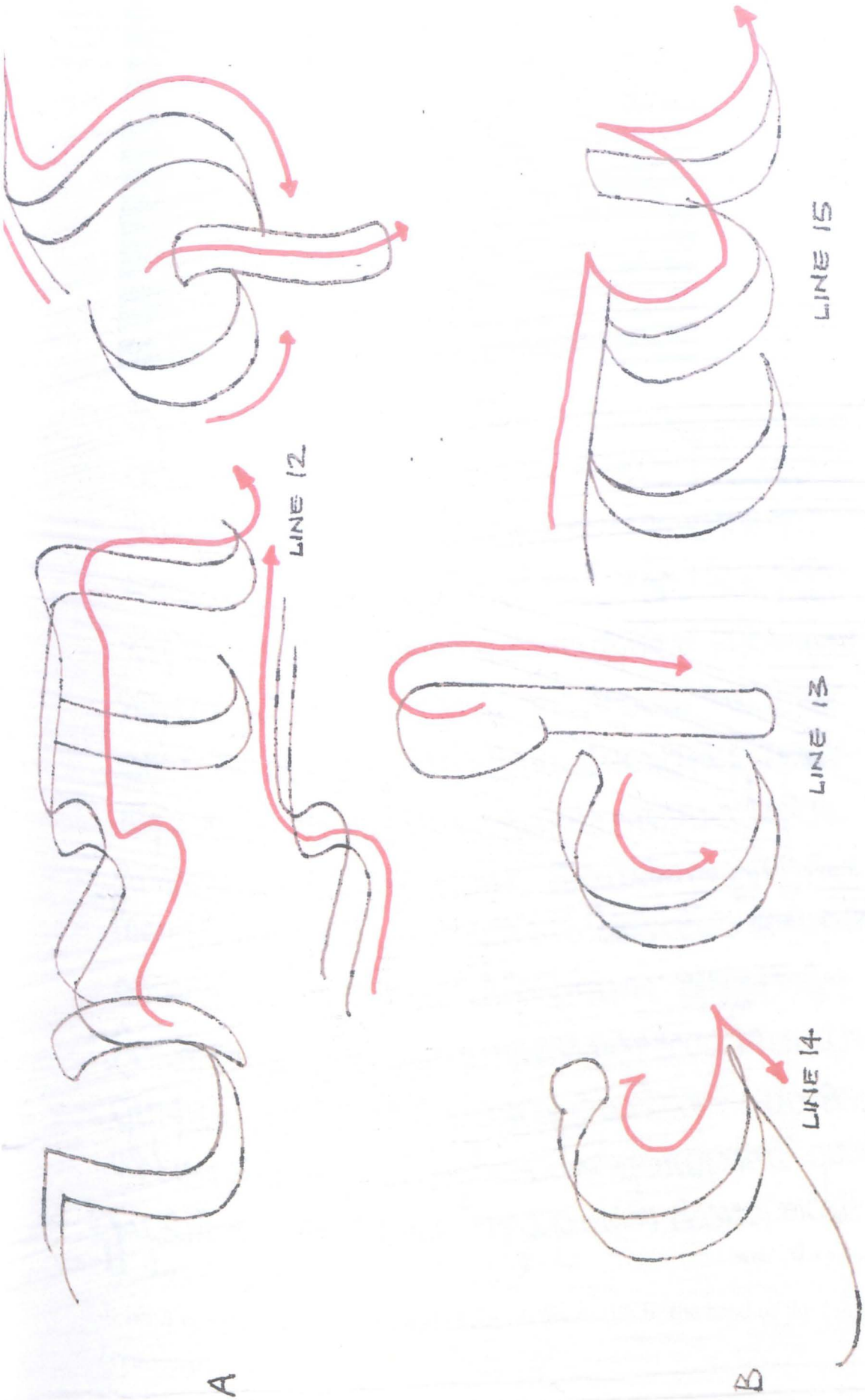
Führer durch die Ausstellung, Nr. 77.
(Verkleinert.)

3: 8. Papyrus protocol. Coptic.



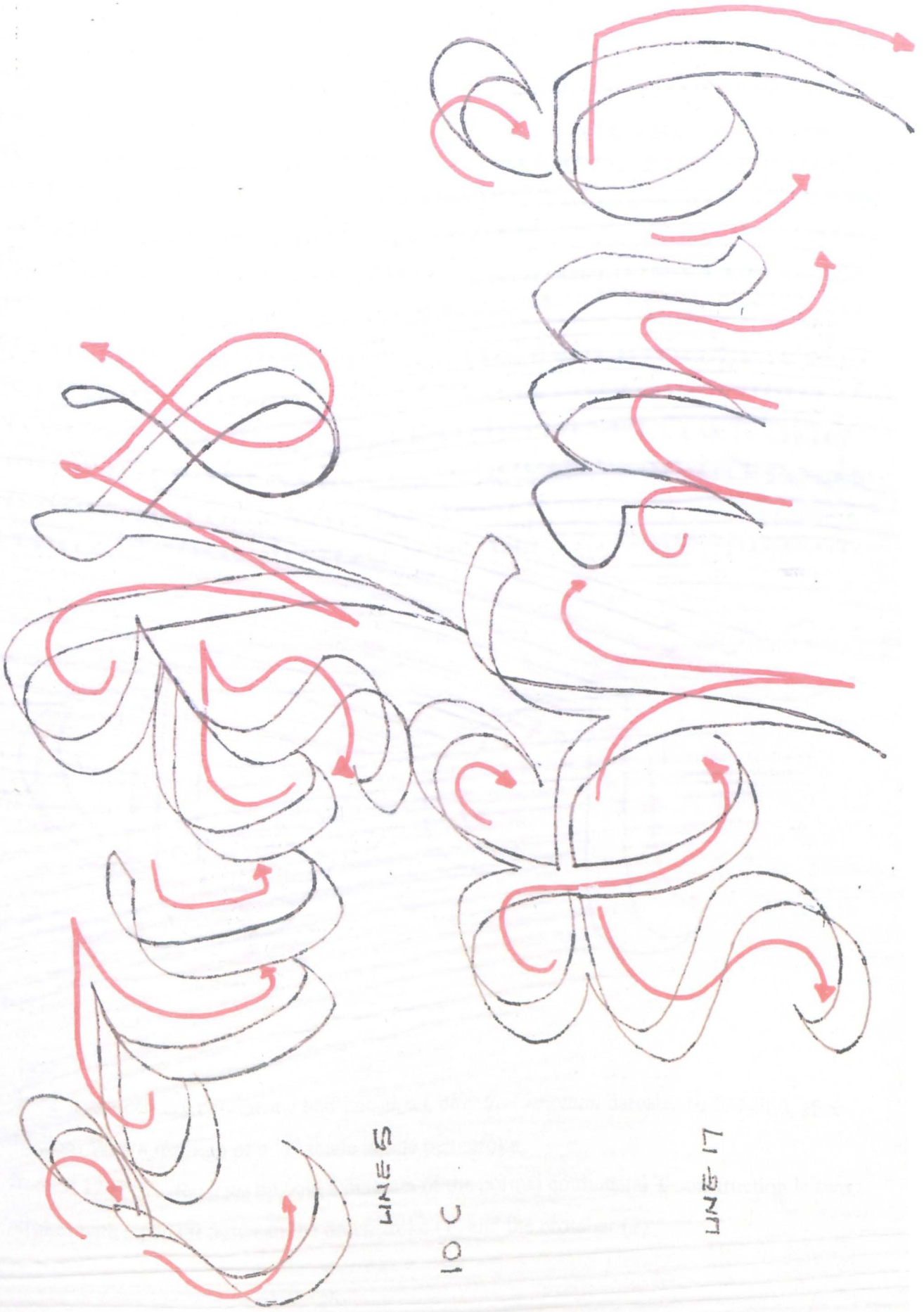
3: 9. To show the advanced pen manipulation possible on continental writing surfaces:

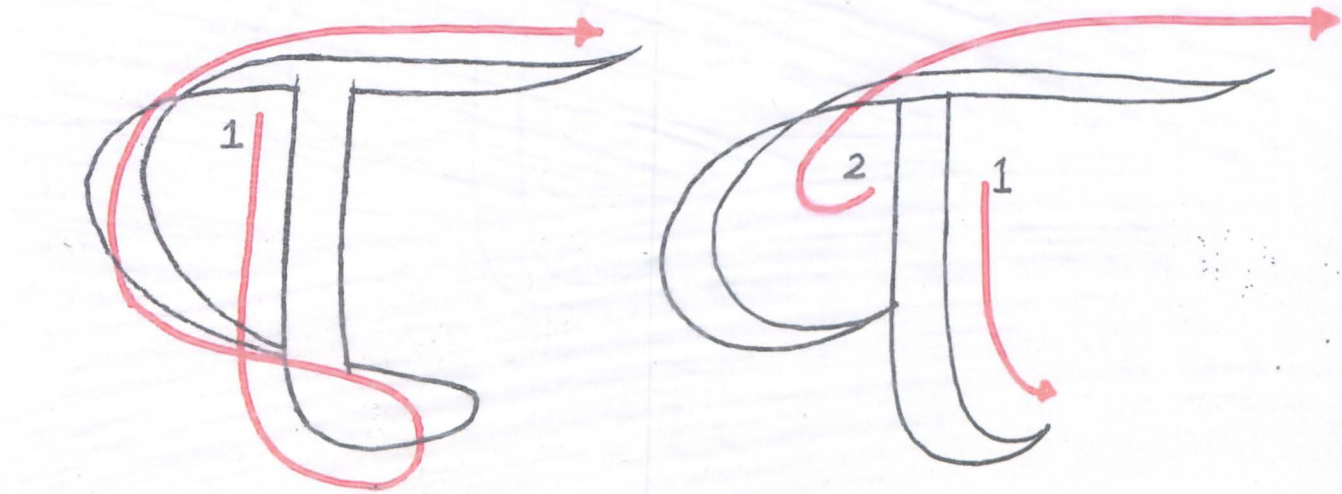
A. Triple ligature from BN *Collectio Canonum*, and B. St Hilary *De Trinitate* on papyrus, sixth century.



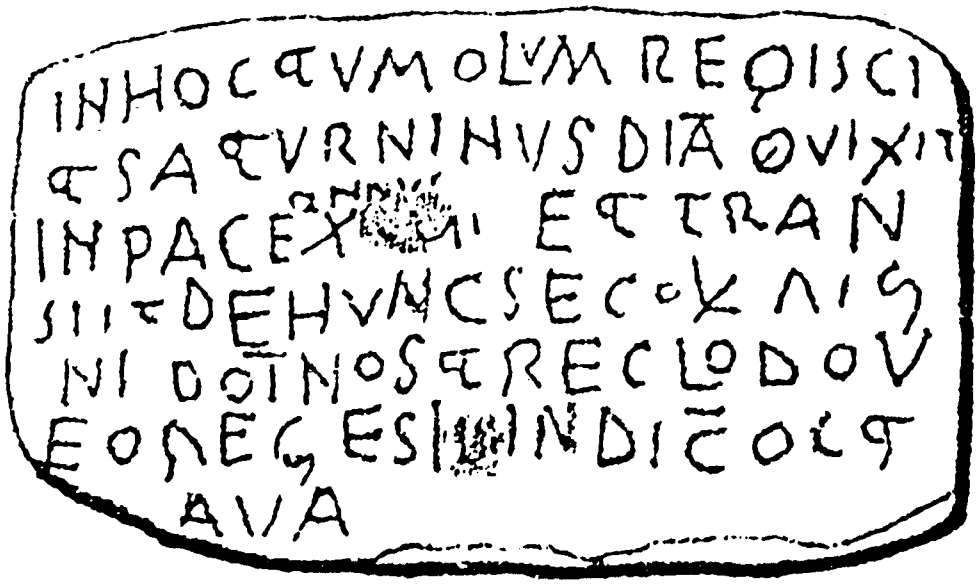
3: 10. A comparison of A. the hand of the *Cathach* with B, the hand of the *Luxeuil Lectionary*.

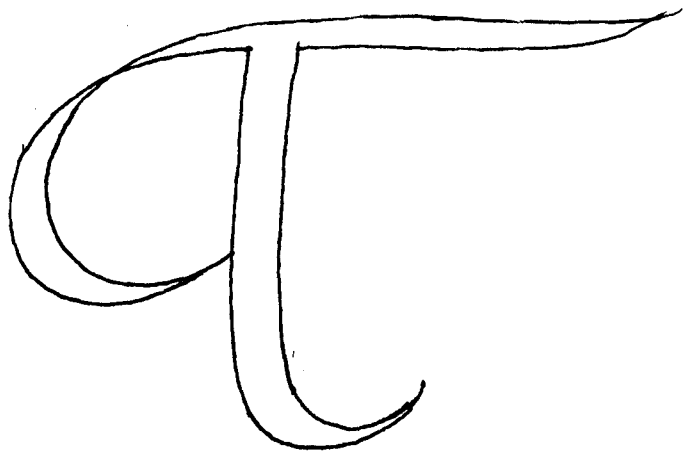
3: 11. Diagrams showing the free ligaturing, in all directions, of the hand of the *Luxeuil Lectionary*.





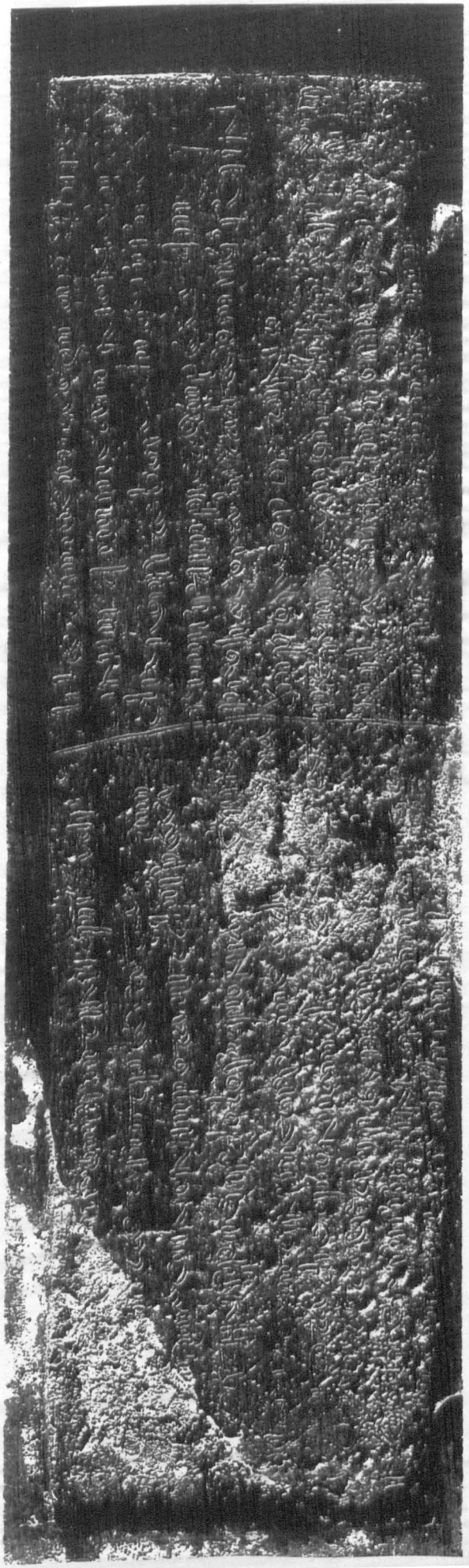
3: 12. Sixth-century continental half-uncial, a *Collectio Canonum* dateable to 537-560, after Mallon. With a diagram of a 'T' made in one pen-stroke,
from 3: 12 above, ten lines up, and a diagram of the normal continental T construction in two strokes with a pen lift between the downstroke (1) and the crossbar (2).

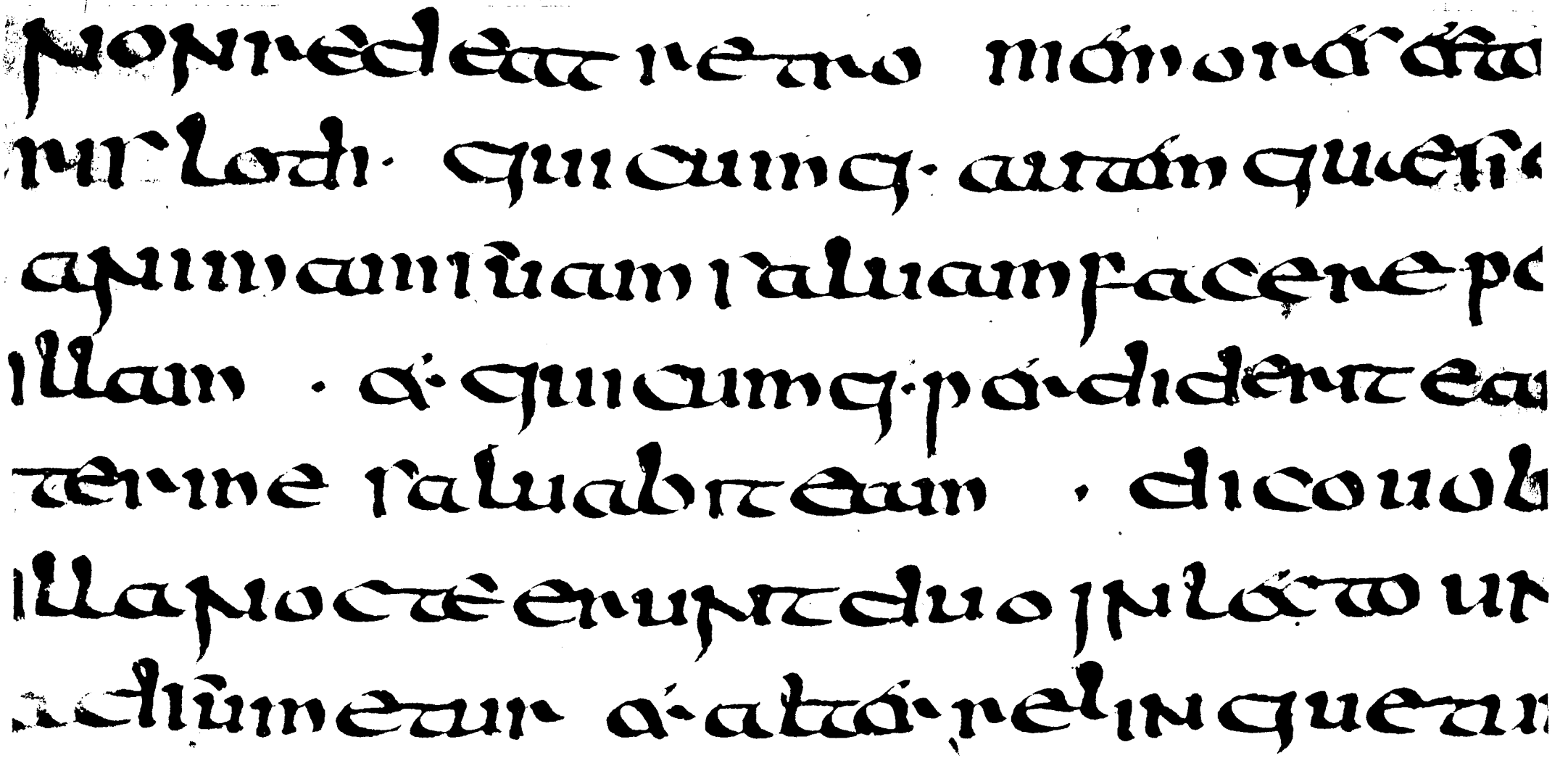




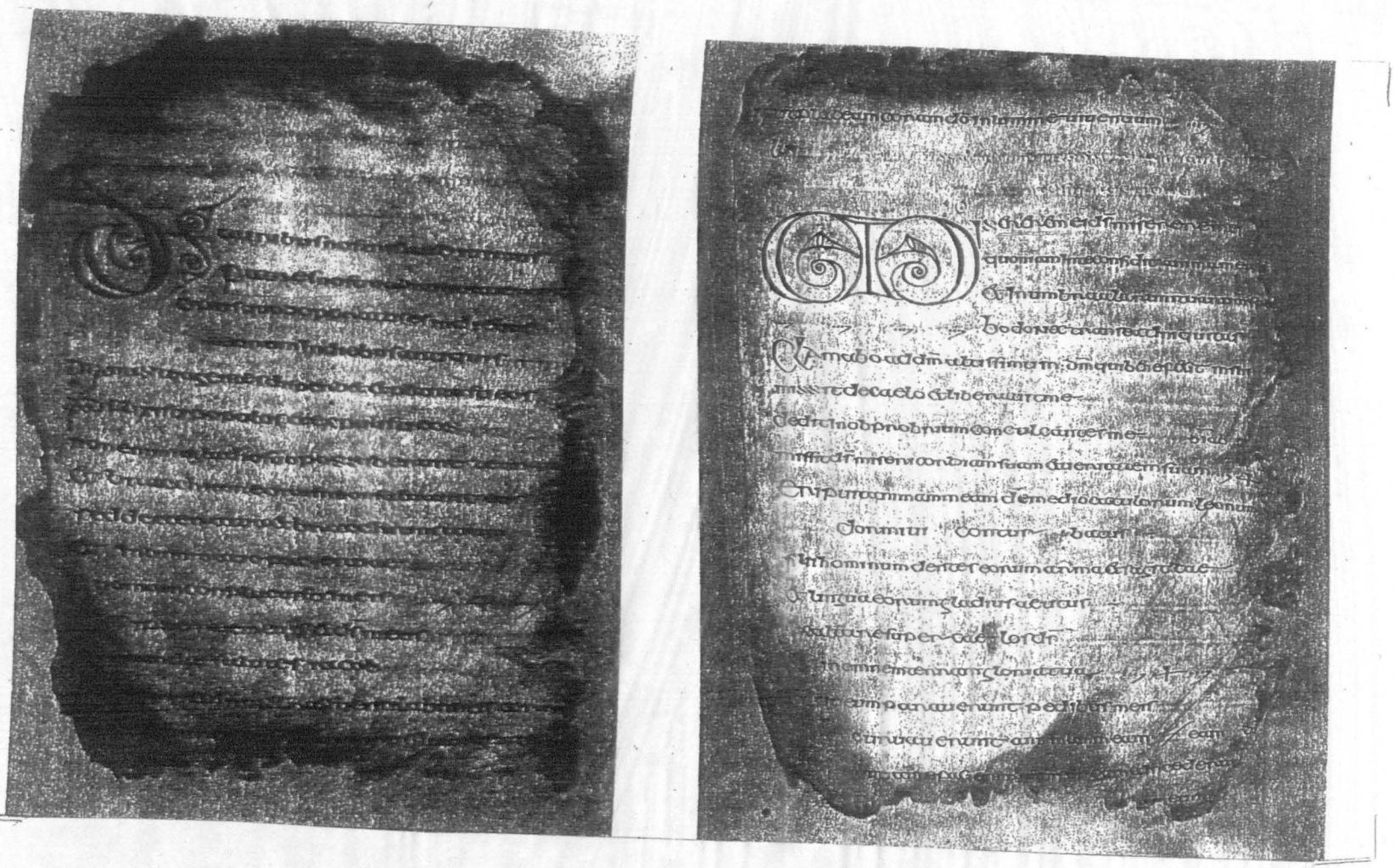
3: 13. An example of the continental T cross-bar cut in stone, RICG, XV, 17, here we see a calligraphic letter rendered by a lettercutter.

3: 14. Springmount Bog wax tablet, NMI SA 1914: 2. NMI photograph.



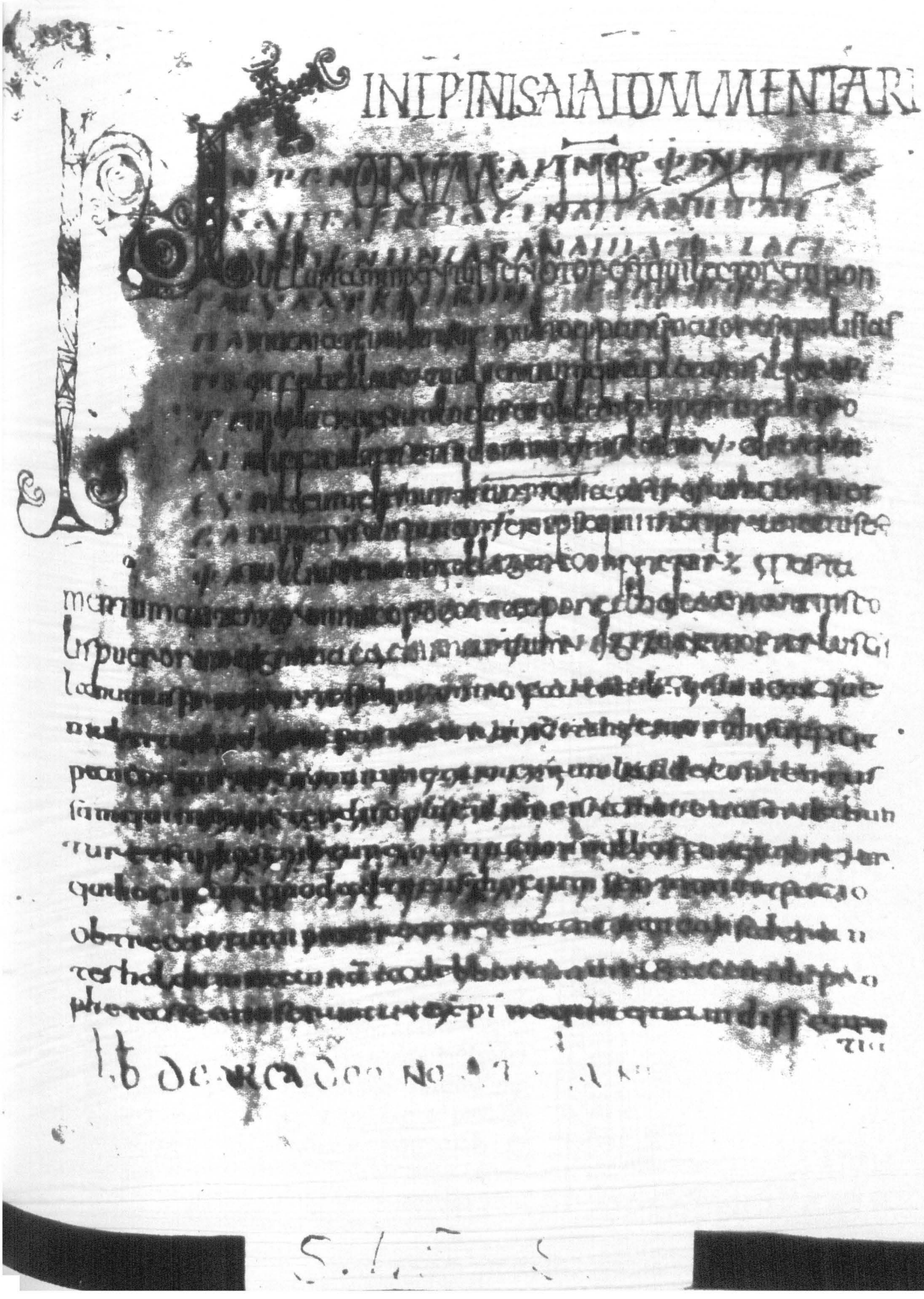


3: 15. TCD MS Ussher I, detail f.129r.

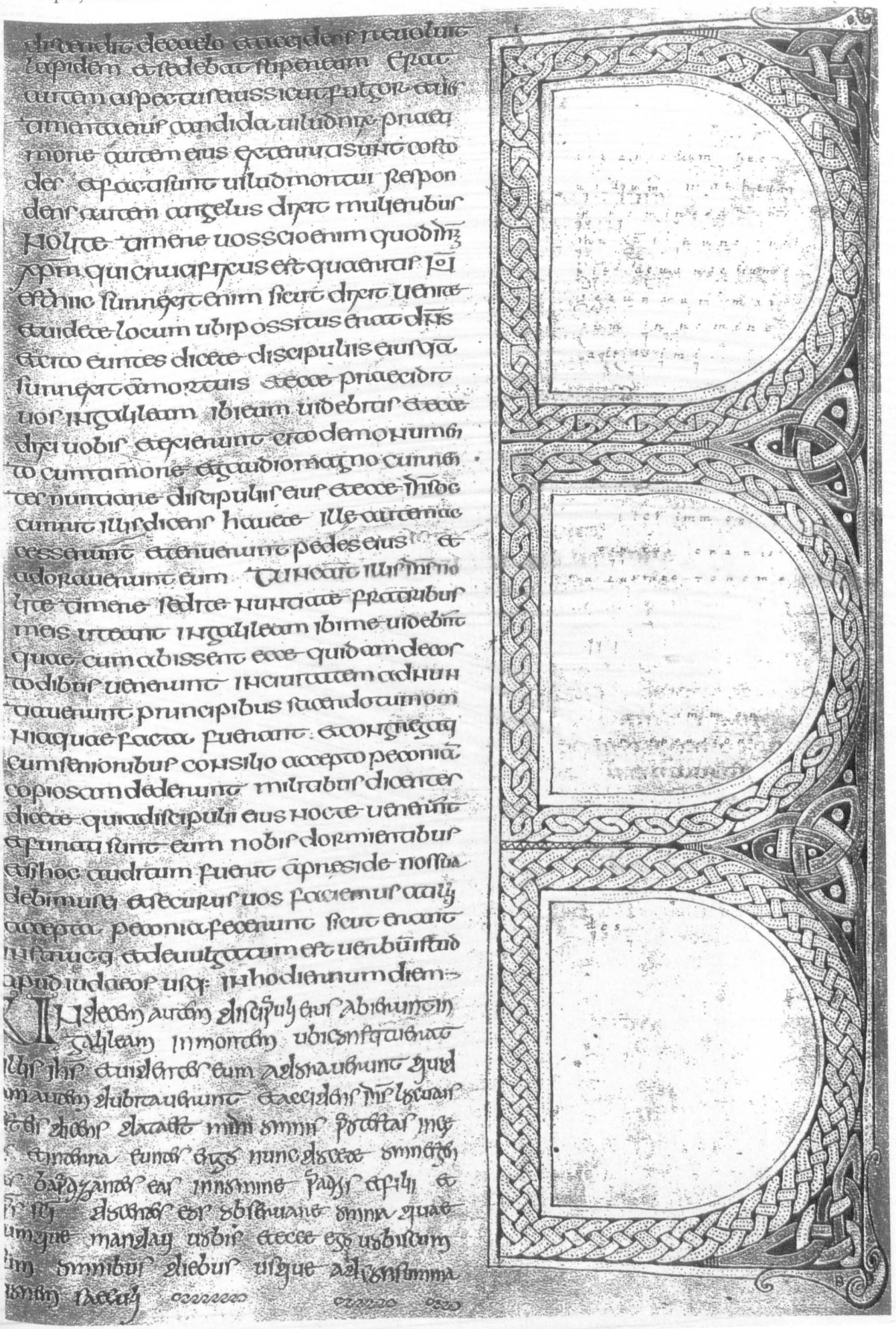


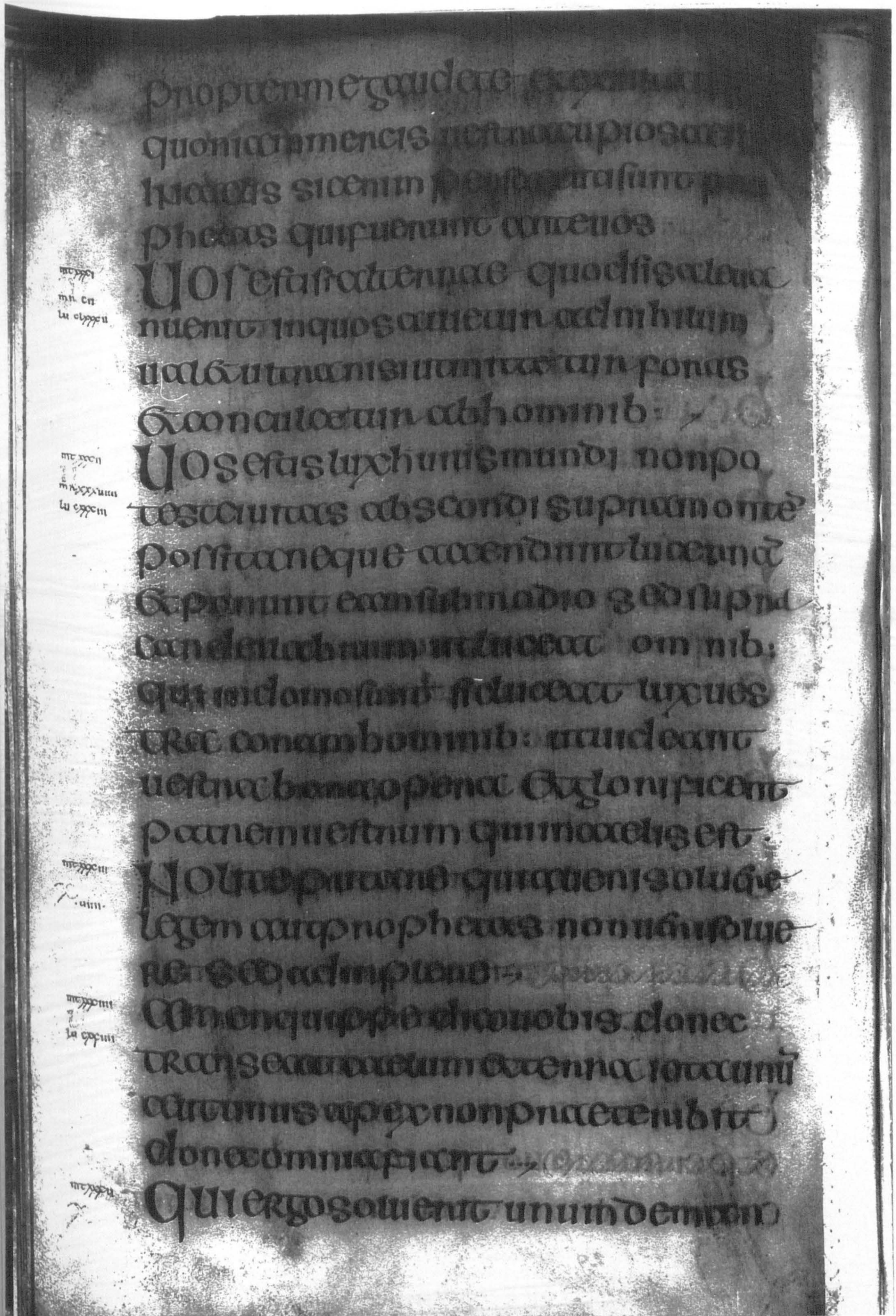
3: 16. The Psalter of St Columba, the *Cathach*, A. f.12r and B, f.21r..

3: 17. The *Atalan Codex*. Ambrosian MS S,45.sup. As this palimpsest codex is now too frail to be photographed, palaeographers unable to consult it in Milan have to rely on this photograph made for Françoise Henry, now in the collection of the RIA.

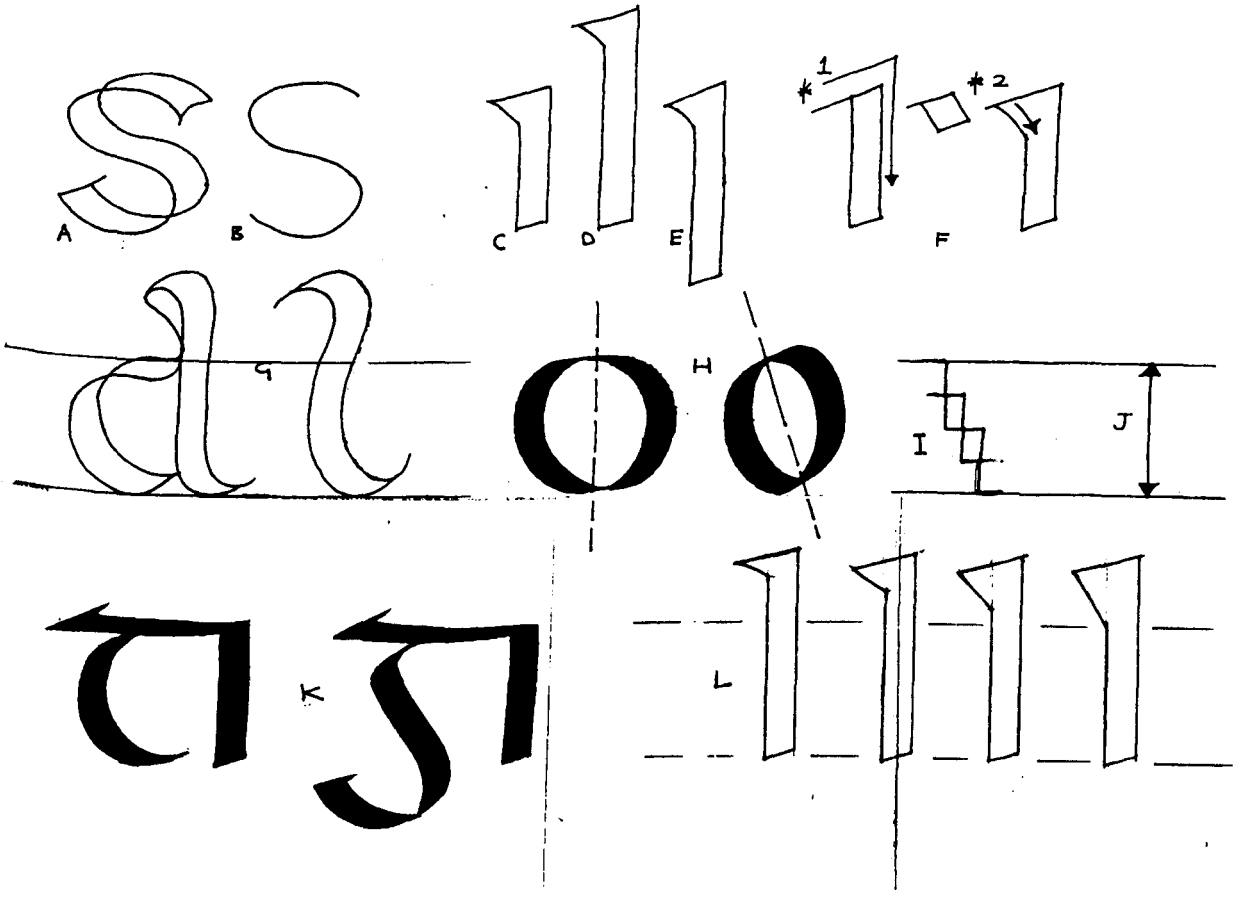


3: 18 Gospel MS Durham A. II 10, f.3v, showing the minuscule *explicit* to St Matthew's Gospel, after Nordenfalk.

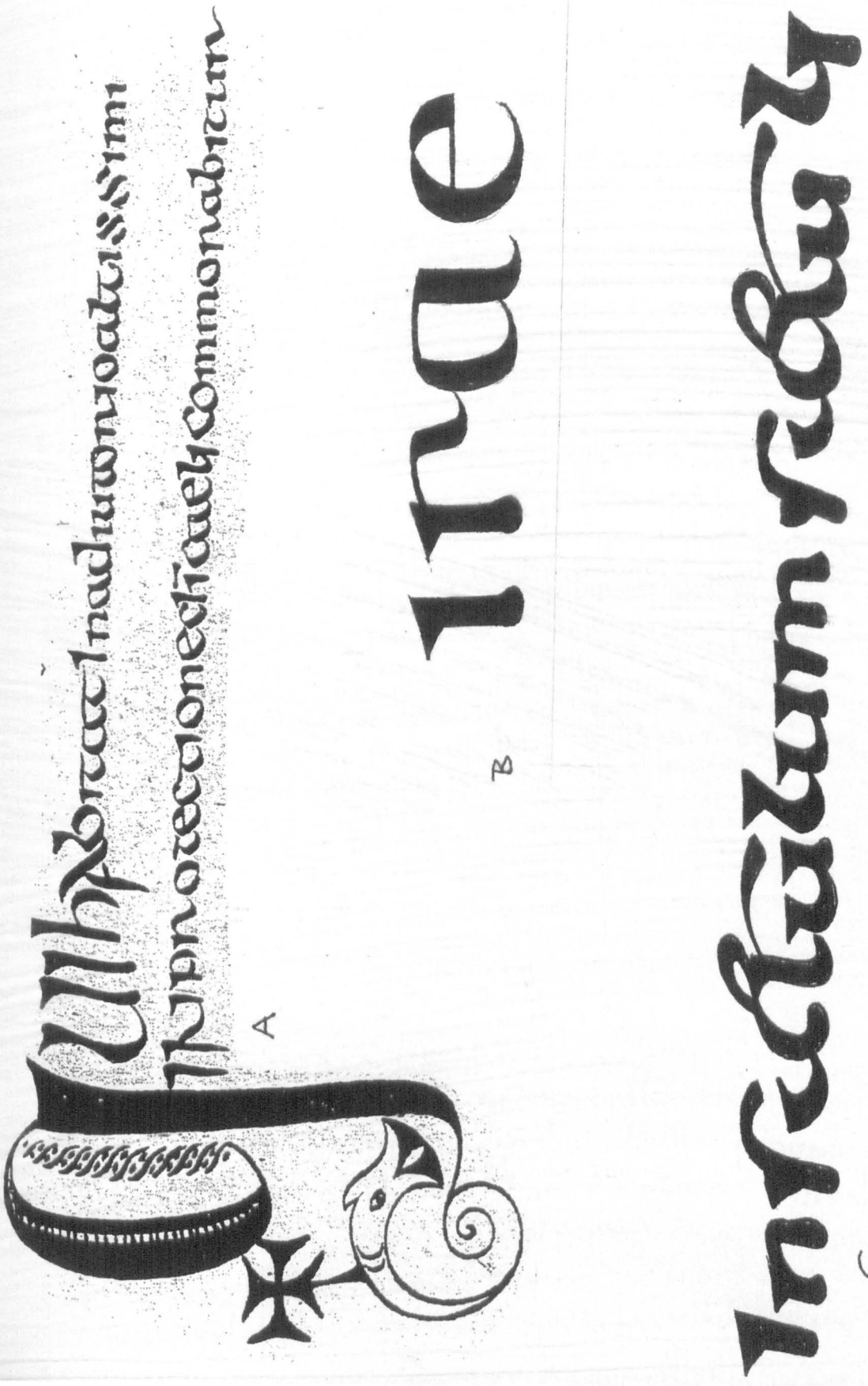




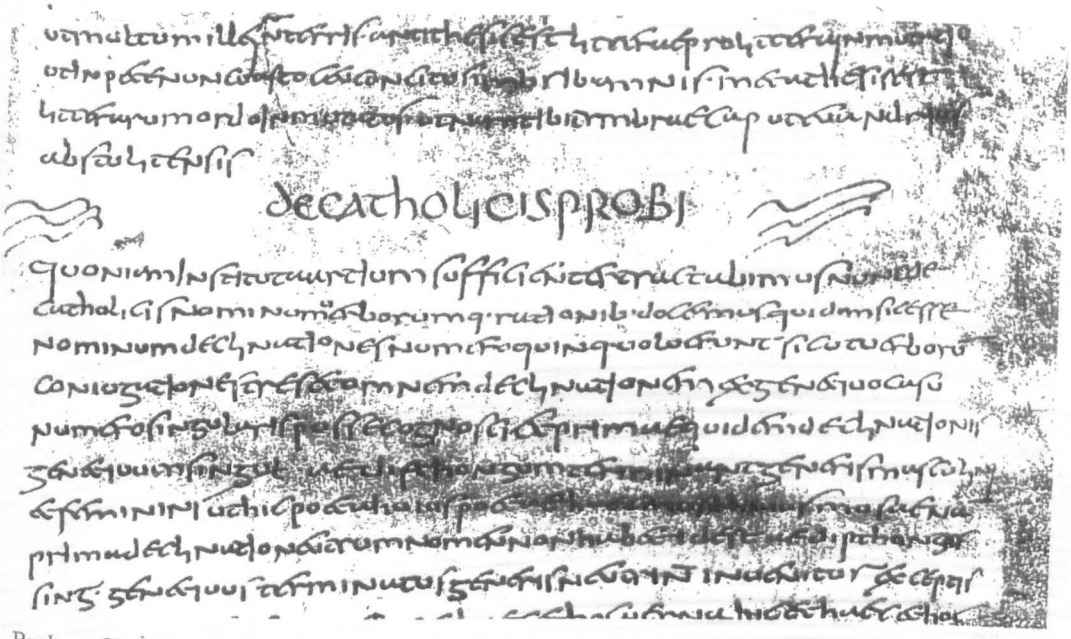
3:20 Diagram to illustrate calligraphic terminology. A.Inflected line. B. Uninflected line. C. minims. D. ascenders. E. descenders. F. wedge serifs and the method of making one. G. the looped entry into an ascender of **d** and the downstroke of **l**. H. the difference between a vertical axis **o** and a sloping axis **o**. I. Four nibwidths making a J.writing line. K. Ligatures of **ti** and **gi**. L. The varying angles of serif-joins to the downstroke.



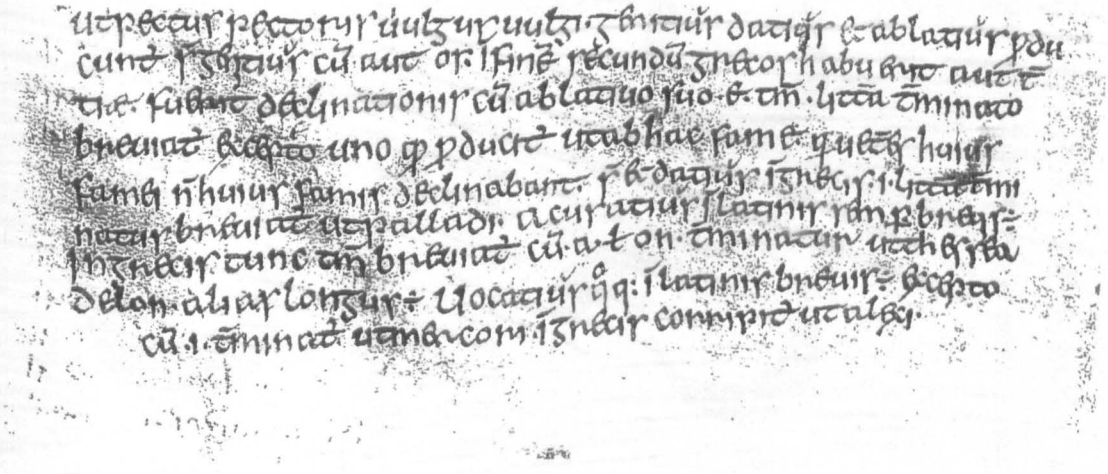
3: 21. Diagram showing the variation of hand within the *Cathach.* A shows the formal main hand with a typical *diminuendo* entry on f.48r, B and C show enlarged details where the peculiarities of this hand may be appreciated.B shows the clogging effect of the sometimes over-thick ink used by this scribe (here at the base of **i** and **r**) whose eyesight was failing to the extent that he could not see heavily scored drypoint ruling.C shows the relapse into ligatured cursive forms at places with familiar repetitions of phrase, here *saeculum saeculi*.



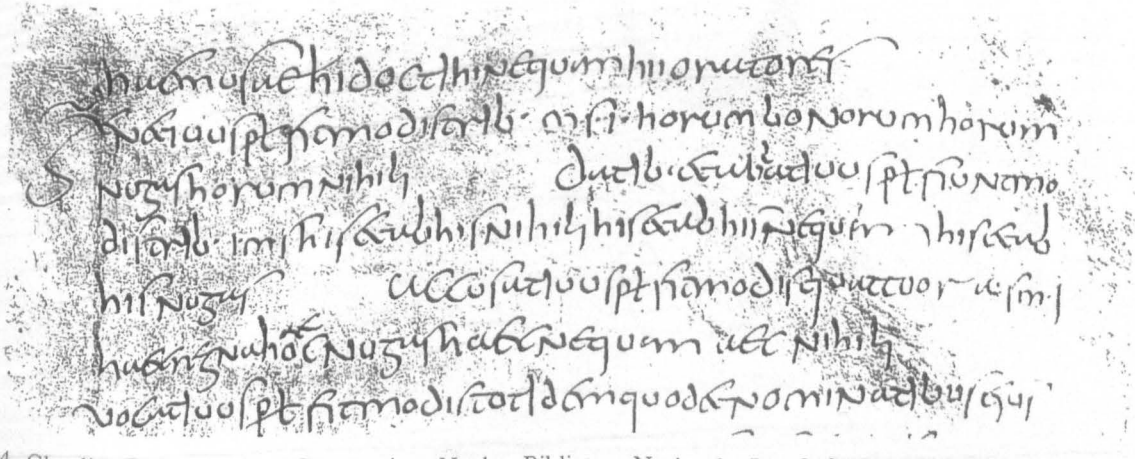
3: 22. MS Naples BN Lat.2. A shows f.95, B shows f.140v. and C shows f.131v. It is rewarding to compare the cursive ligaturing of these hands with the ligaturing of the hand of the *Cathach* in 3: 20C above. After J. Brown.



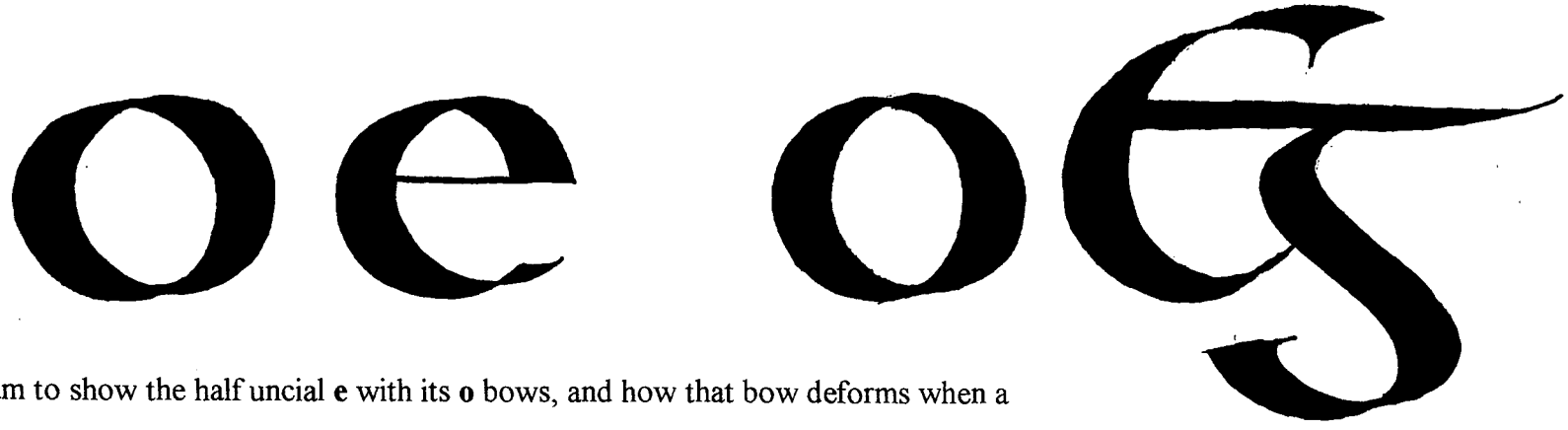
2. Probus, Charisius, Lactantius, etc. Naples, Biblioteca Nazionale, Lat. 2, f. 95. *CLA* 3,397a



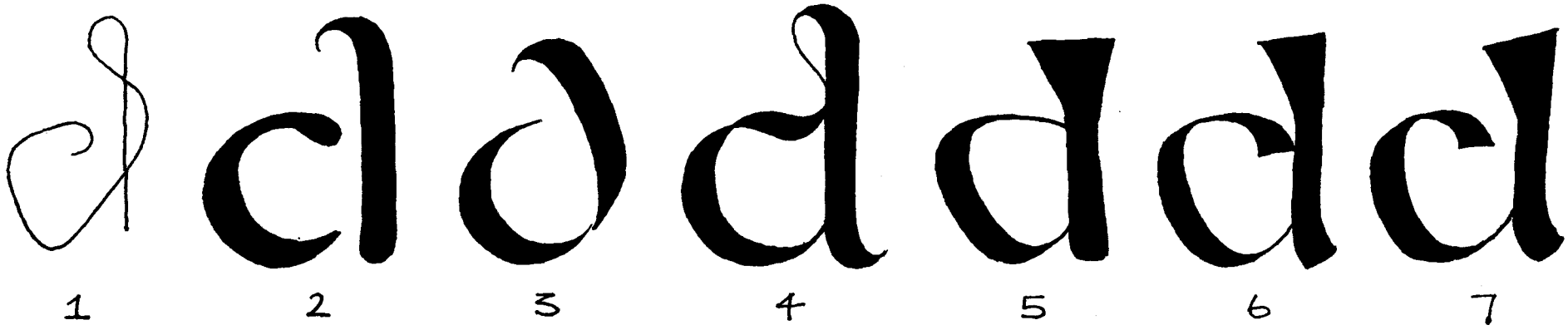
3. Probus, Charisius, Lactantius, etc. Naples, Biblioteca Nazionale, Lat. 2, f. 140v. *CLA* 3,397a



4. Claudius Sacerdos, *Artes Grammaticae*. Naples, Biblioteca Nazionale, Lat. 2, f. 131v. *CLA* 3,398



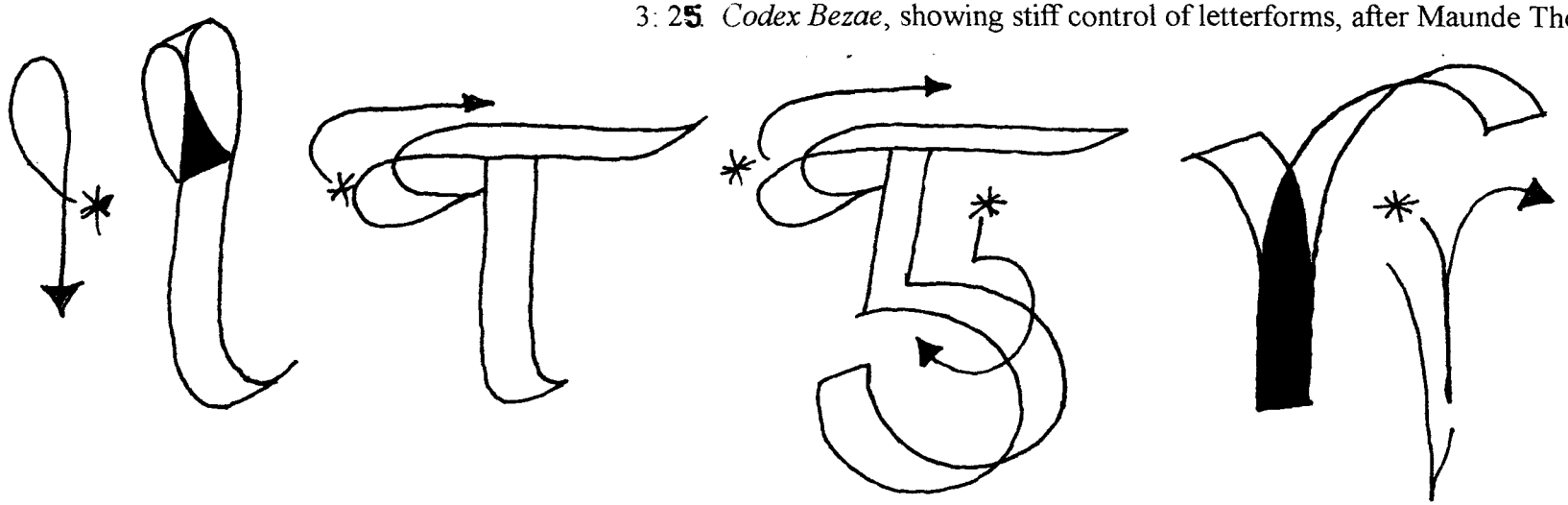
3: 23. Diagram to show the half uncial **e** with its **o** bows, and how that bow deforms when a cursive ligaturing letter **e** is made.



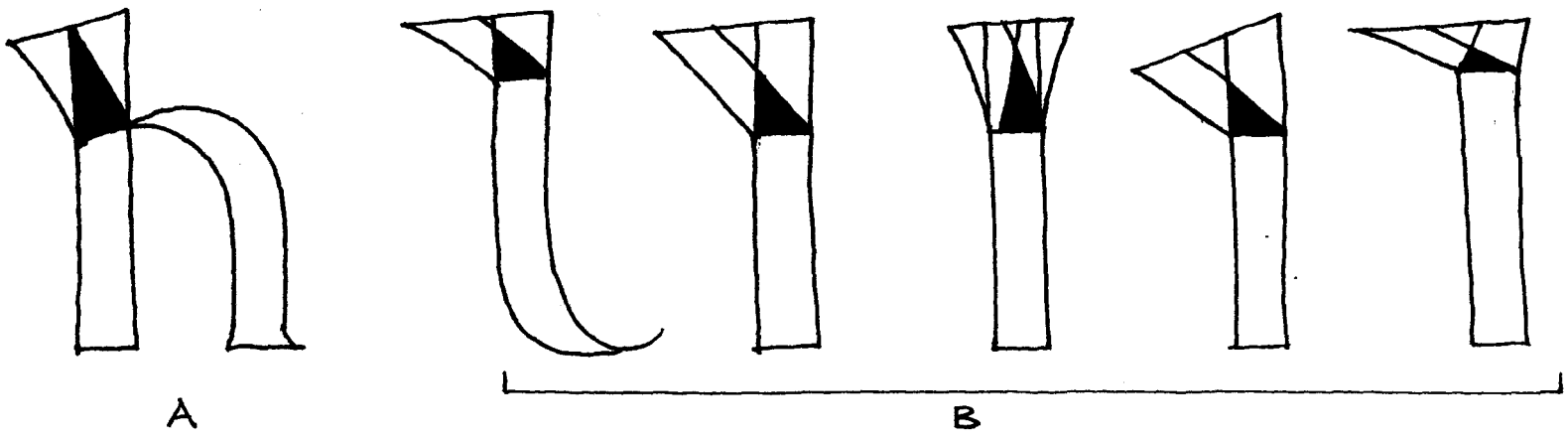
3: 24. The entry into the ascender head in various Insular scripts. 1. Tabellae Sulis, No. 97, no pen-lifts. 2.Springmount Bog Tablet ,3v, one pen-lift. 3. Naples Lat 2, f 131, one pen-lift. 4. Ussher I, no pen-lift = one stroke. 5.The Cathach, variants, up to three strokes. 6.Durham A. II. 10, variants, up to three strokes. 7. Book of Durrow, three strokes.

EXITTIBIS ICUTETHNICUS ETSICUT]
AMENDICOUOBIS QUAECUMQUELIÇAU
INTERRAM ERUNTSOLUTAINCAELIS
ITERUMDICOUOBIS QUIASIDUOCONUE
EXUOBIS SUPERTERRAM
DEOMNIRE QUAMCUMQUEPETIERIN

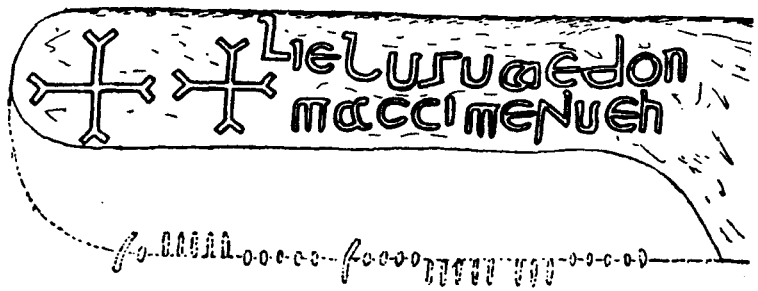
3: 25. *Codex Bezae*, showing stiff control of letterforms, after Maunde Thompson.



3: 26. Manipulation in continental hands.



3: 27. A. Regular serif control in the Lindisfarne Gospels, compared to B. irregular in the *Cathach*.

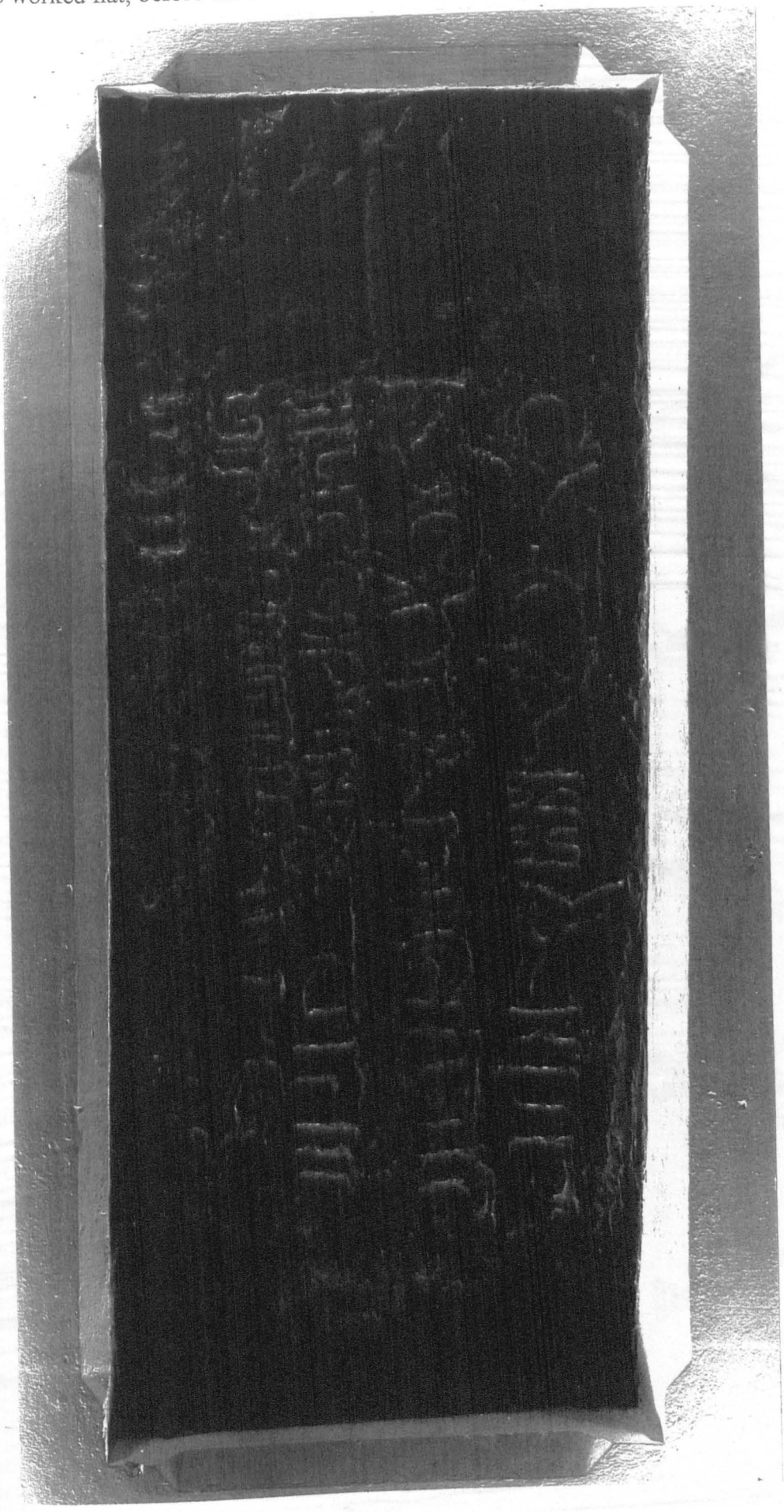


A

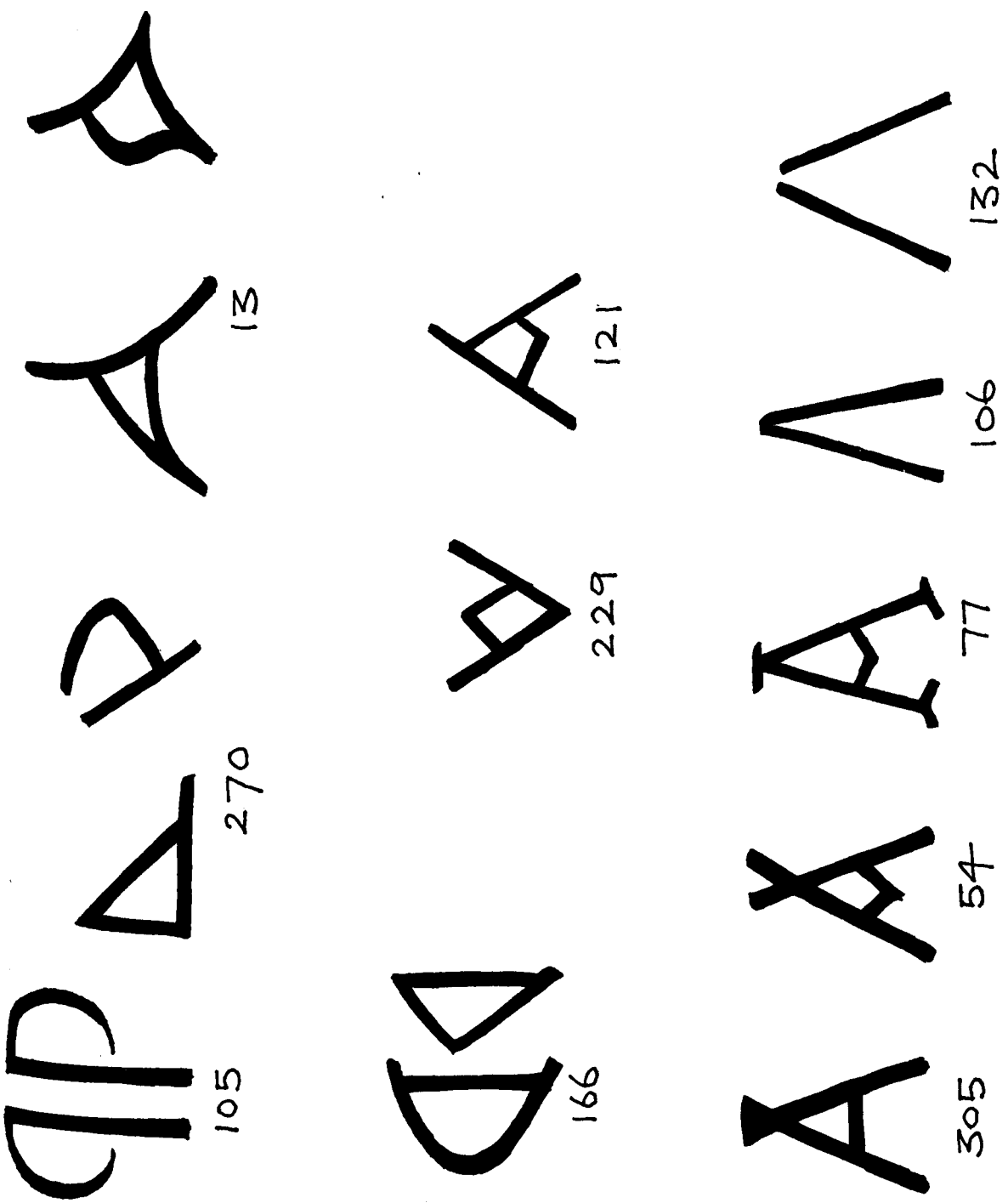
B

4: 1.A CIIC no.1, Inchagoill, Co. Galway, vertical mixed-alphabet inscription with angularised letter-forms; illustration after Macalister, who assumed a destroyed ogham inscription to have existed alongside the surviving one. Shown in comparison with ECMW no.305, Cilgerran, Pembrokeshire, a vertical mixed-alphabet inscription with angularised letter-forms, after Nash-Williams 1B.

4: 2. The Catamanus inscription, ECMW no.13, Llangadwaladr, Anglesey. A vertical mixed-alphabet inscription with a cross at the top. Photography RCAHMW. Note that this inscription was worked flat, before the stone was raised up.

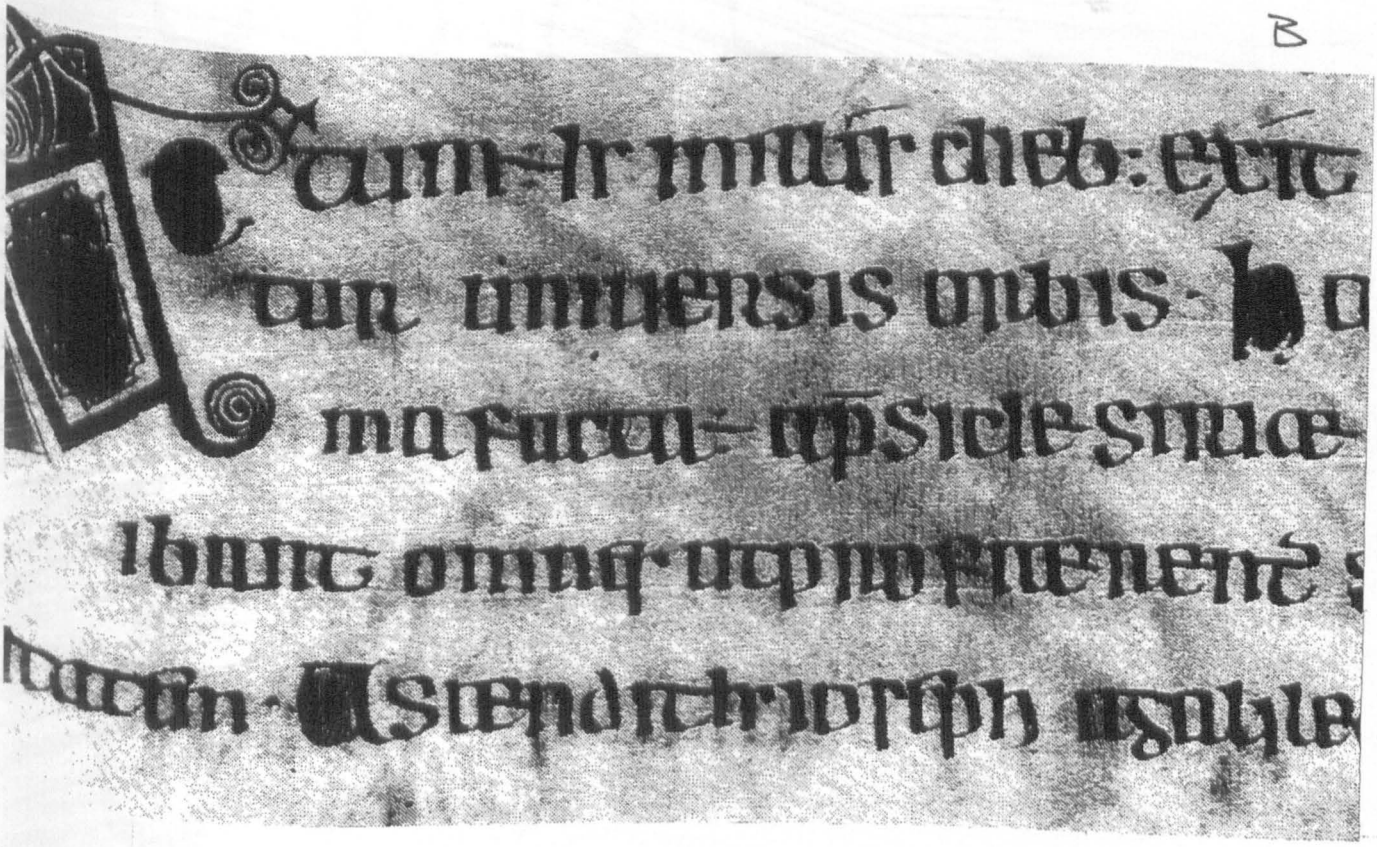


4: 3. Diagram of various 'A' forms in ECMW Group I. Schematised after Nash-Williams, no. 270 from Tirphil, Glamorganshire, no. 13 from Llangadwaladr, Anglesey, no.166 from Llansadyrnin, Anglesey, no. 229 from Margam, Glamorganshire, no. 121 from Llandysul, Cardiganshire, no. 305 from Cilgerran,Pembrokeshire, no. 54 from Llanfihangel-Cwmdu, Brecknockshire, no. 77 from Aberdaron, Caernarvonshire, no. 103 from Penmachno, Caernarvonshire, and no. 132 from Tregaron, Cardiganshire.

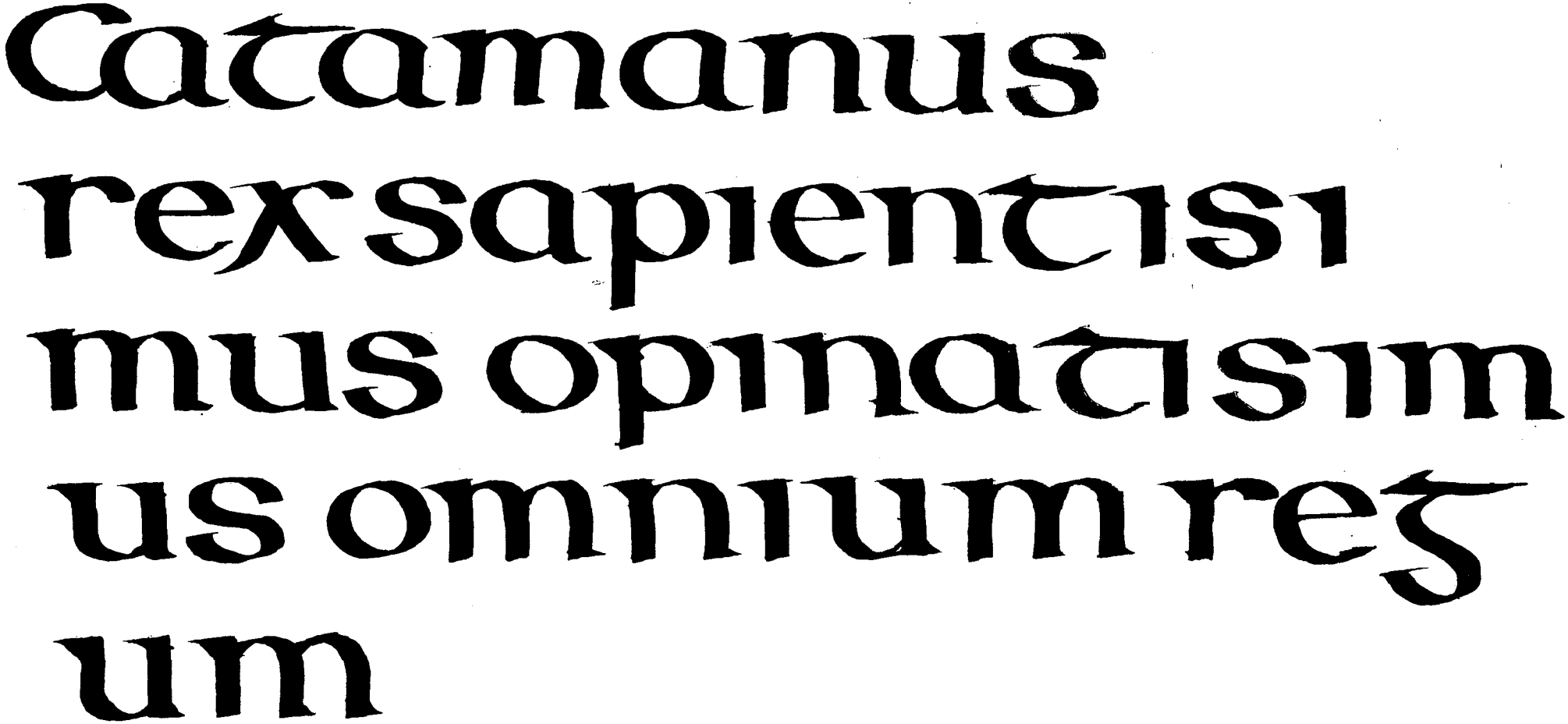


4: 4. Irish angular minuscules upgraded for formal 'majuscule' use in A. The Stowe Missal, f. 12r, and B.the St Gall Gospels, p (sic).134.

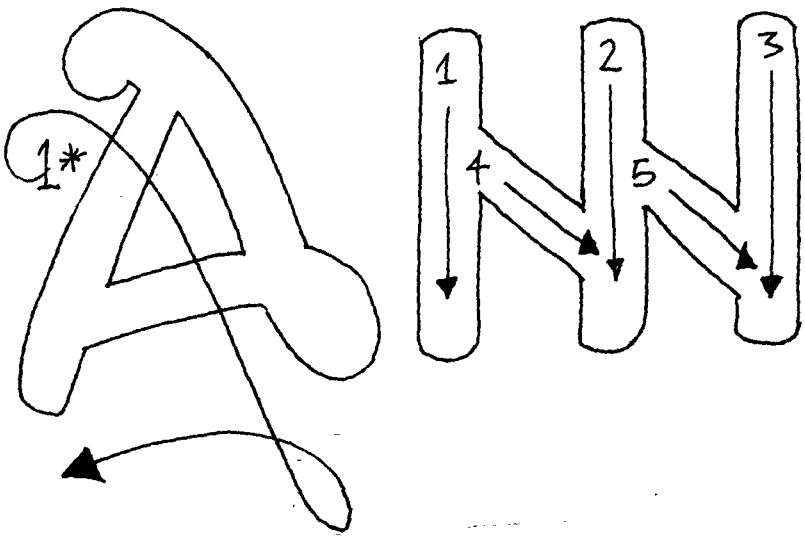
A



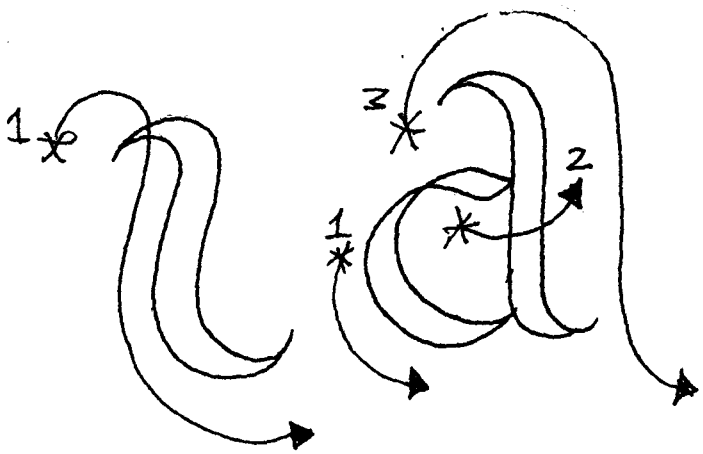
B



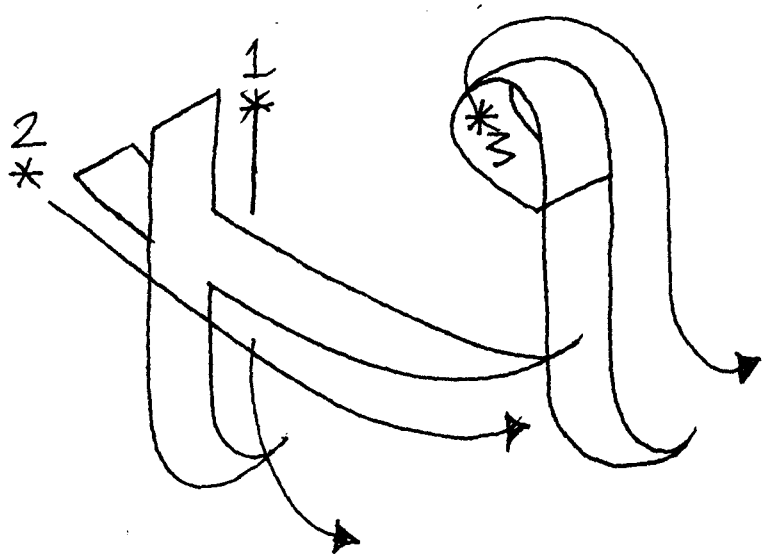
4: 5. The Catamanus inscription written in half-uncial with an 'o' nib, written by G. C-E.



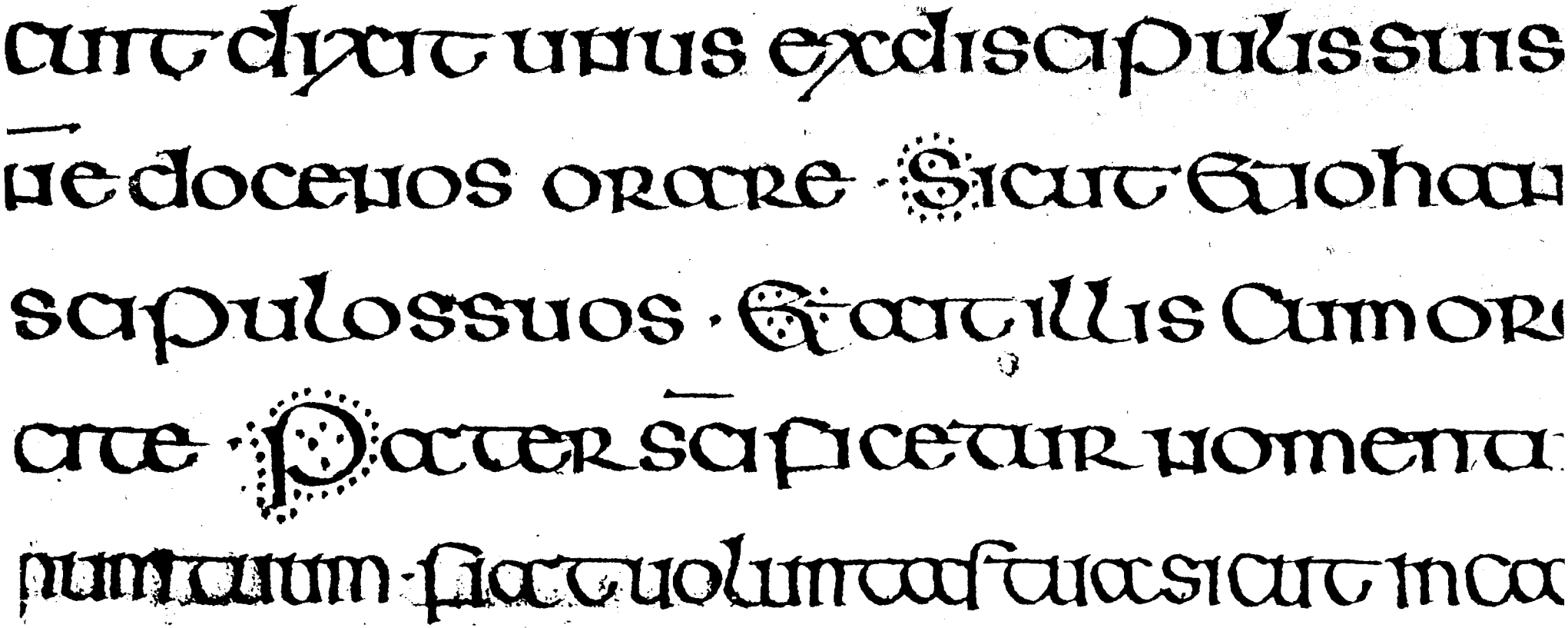
4: 6. The movement from curvilinear to angular form.



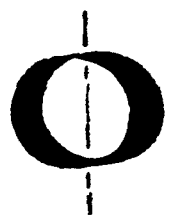
4: 7. Curved entry stroke, or loop, by stylus, from the Springmount Bog tablets.



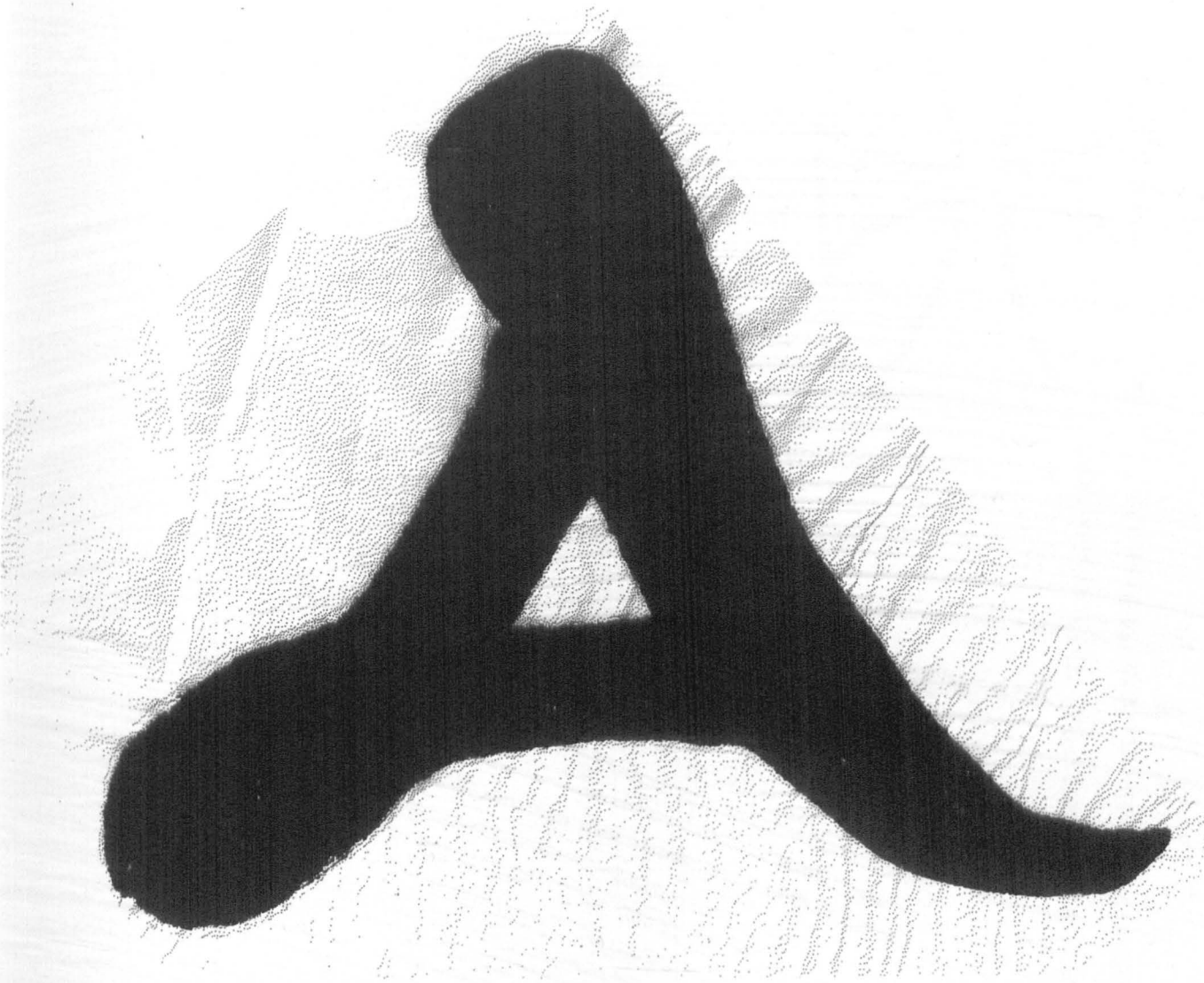
4: 8. Diagram. Looped entry, by a broad pen, in the MS Ussher I.

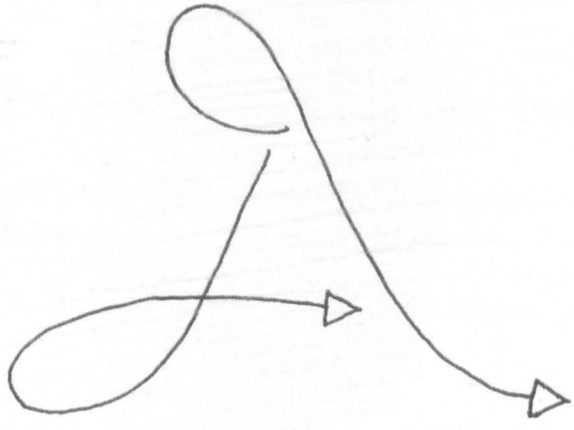


4: 9. Insular half-uncial, from CLA ii. 138, enlarged to show four-square **O** and triangular serifs; with diagram showing the vertical axis of the **O**.

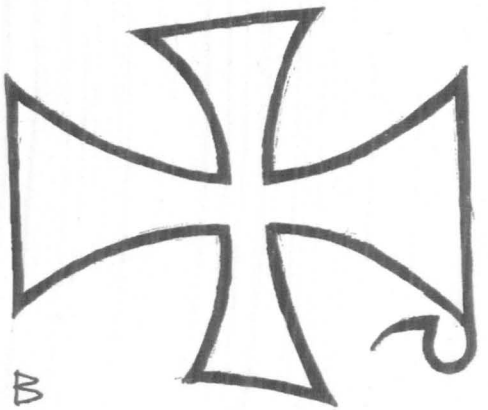


4: 10. Brushed looped entry such as followed by the cutter of the Catamanus inscription.



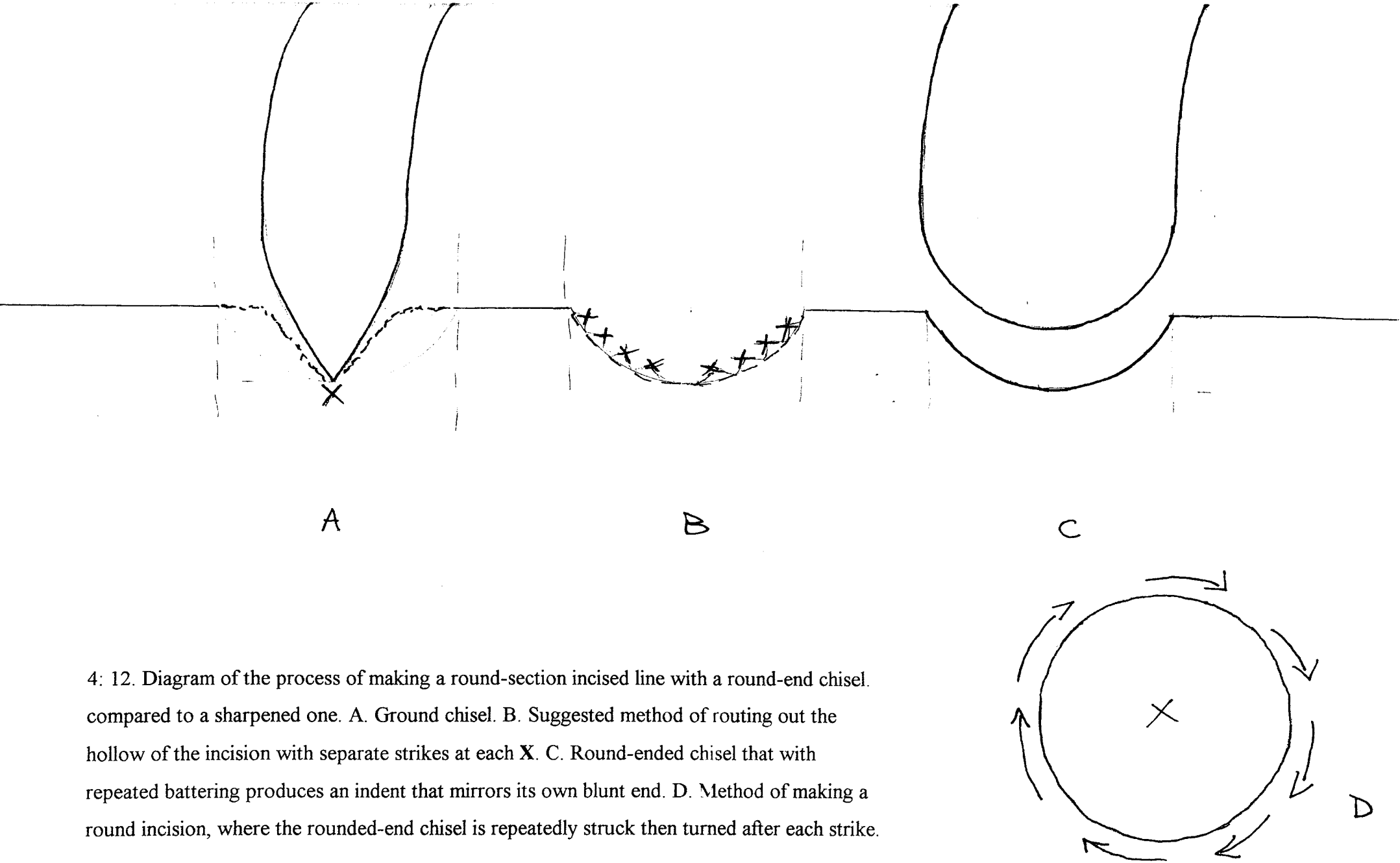


A

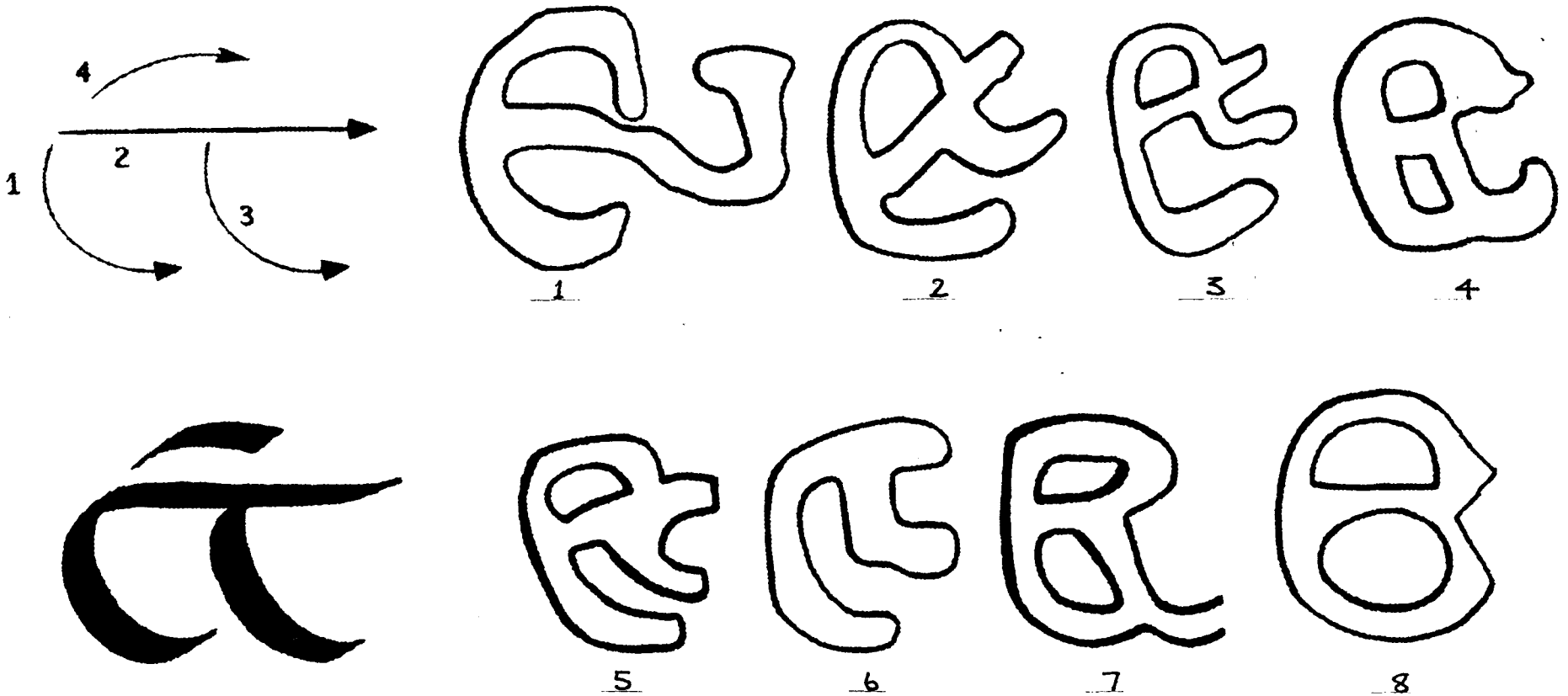


B

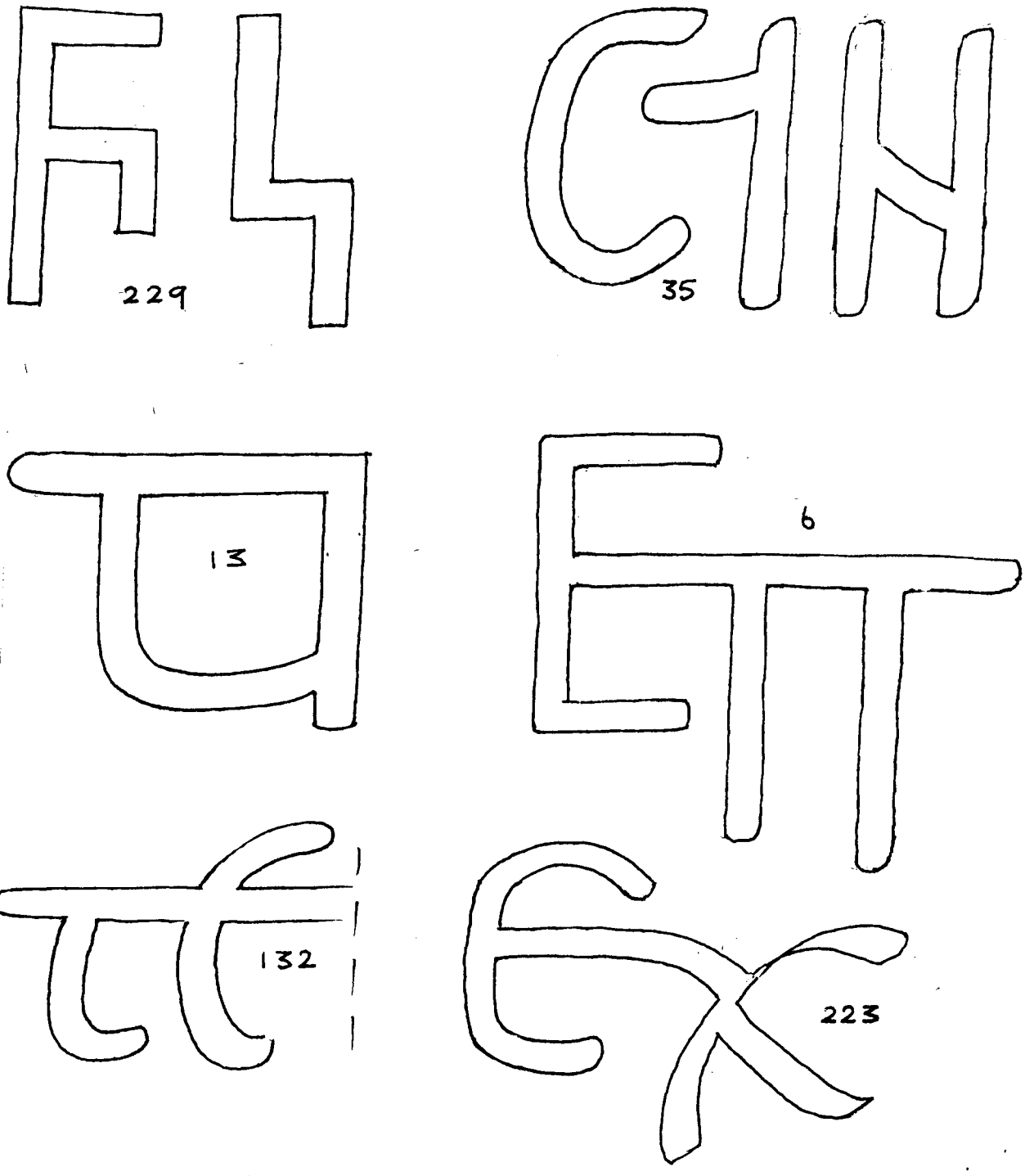
4: 11A. The 'Lapis Echodi' inscription from Iona, photograph RCAHMS. The inscription lies along the top edge of the slab, on the front face of which is a well-cut *chi rho* Maltese cross, illustration 4: 11B.



4: 12. Diagram of the process of making a round-section incised line with a round-end chisel. compared to a sharpened one. A. Ground chisel. B. Suggested method of routing out the hollow of the incision with separate strikes at each **X**. C. Round-ended chisel that with repeated battering produces an indent that mirrors its own blunt end. D. Method of making a round incision, where the rounded-end chisel is repeatedly struck then turned after each strike.



4: 13. Forms of the pen-made 'et' ligature transferred to stone. Epigraphic examples to the right of the calligraphic: 1 Llantwit Major 3; 2, 3 and 5 are from St . Brides 1; 4 and 7, from Merthyr Mawr 1; 6 Merthyr Mawr 2; 8 Llantwit Major 1. Taken from G. Charles-Edwards 'The Palaeography of the Inscriptions', Chapter 6 in *Corpus of Early Medieval Inscribed Stones and Stone Sculpture in Wales* (Cardiff, 2006).



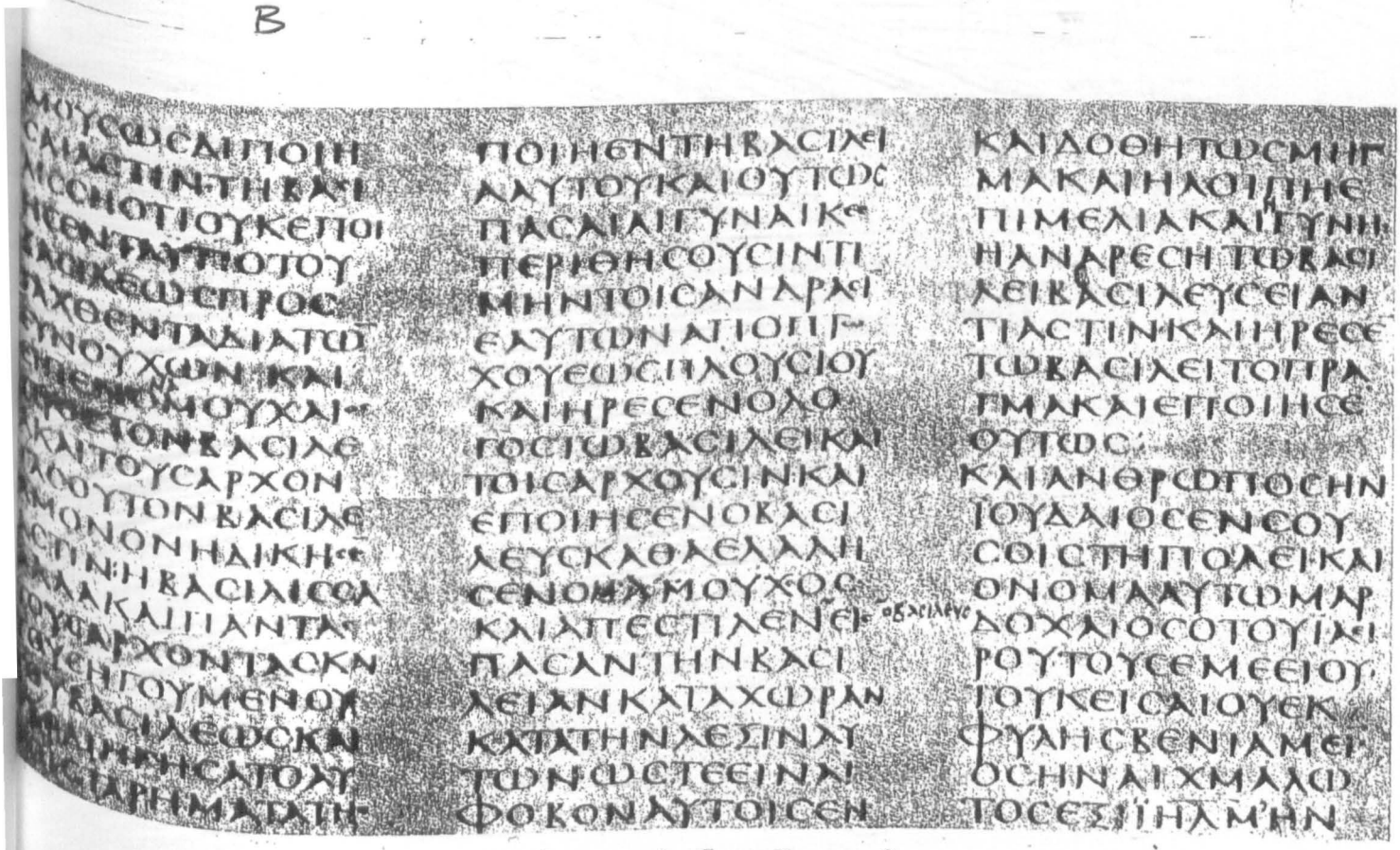
4: 14. Some other cursive-style ligatures in stone from ECMW. After the common FI / LI ligature, examples are given from ECMW 35, Newborough, Aglesey, ECMW no. 13 from Llangadwaladr, Anglesey, ECMW no 6 from Llanbabo, Anglesey, ECMW no 132 from Tregaron, Cardiganshire and ECMW 223 fom Llantwit Major, Glamorganshire.

4: 15A. Fifth-century pen-formed Rustic script, from a Vergil, Codex Palatinus (Cod. Ms. Pal. Lat. 1631), in comparison with, B, late fourth-century pen-formed Greek uncials from Codex Siniaticus (BM Add. Ms. 43725).

A

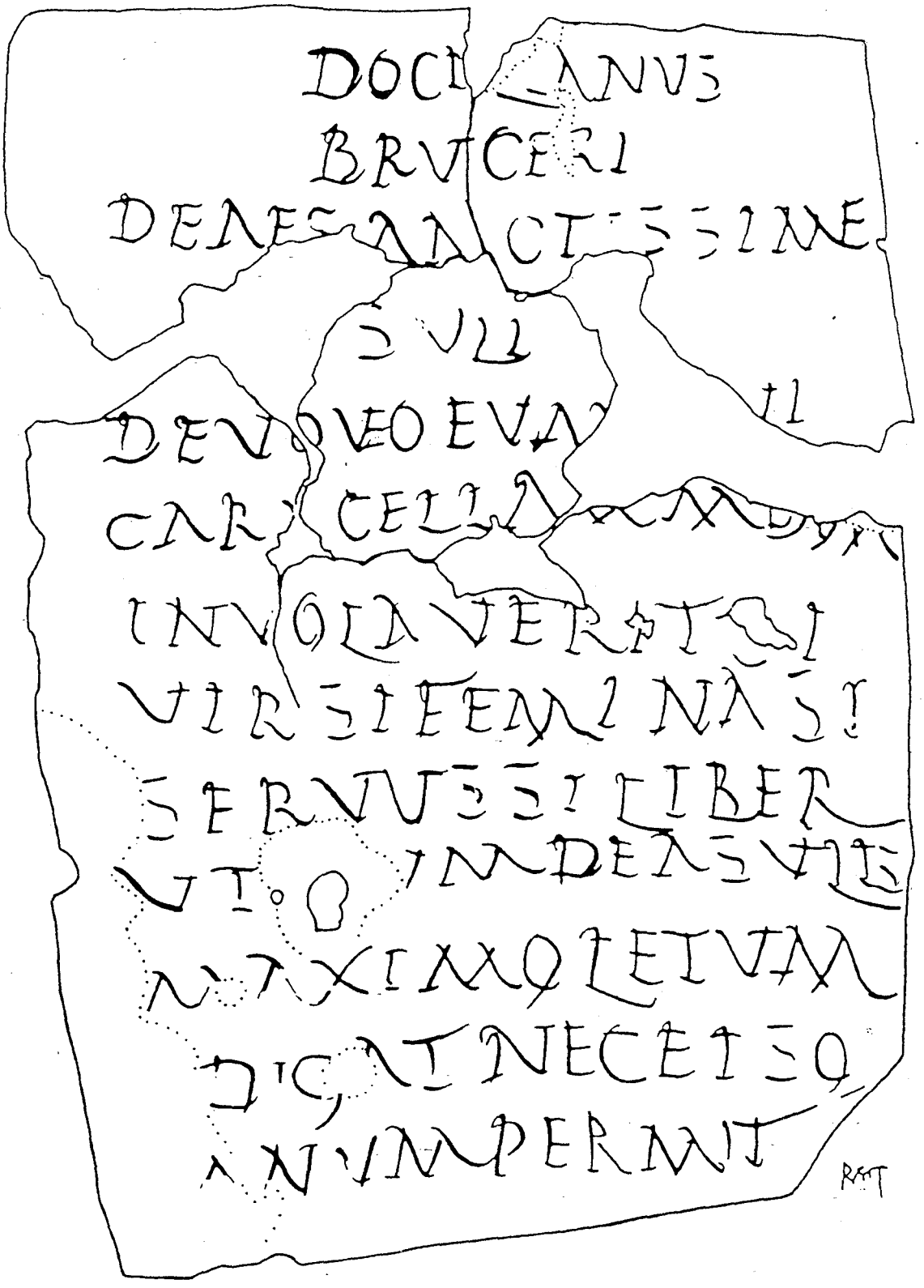
Virgil (Cod. Palat.).—Fifth Century

B



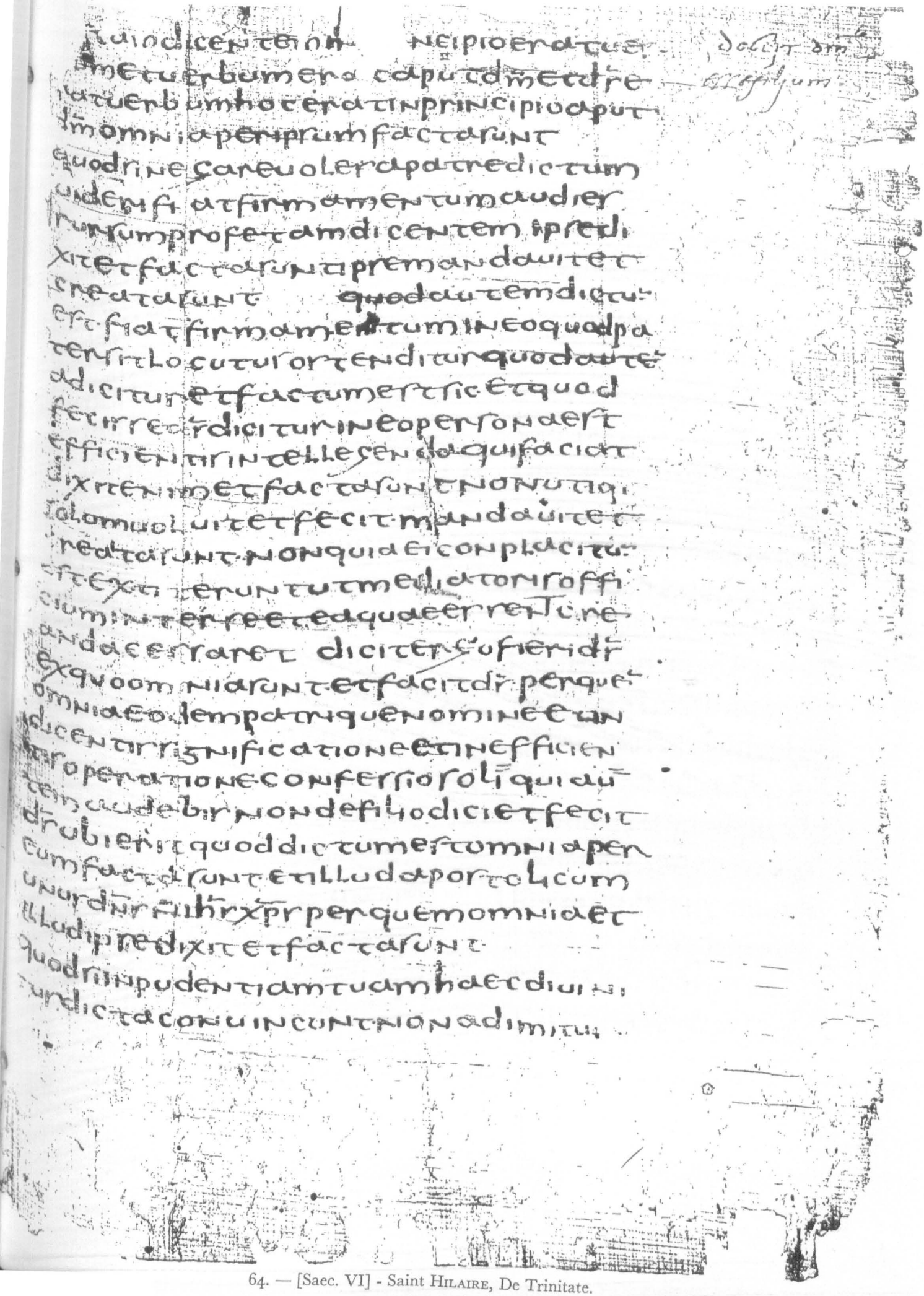
Bible (Codex Sinaiticus).—Late Fourth Century

4: 16. Tabellae Sulis no. 10..



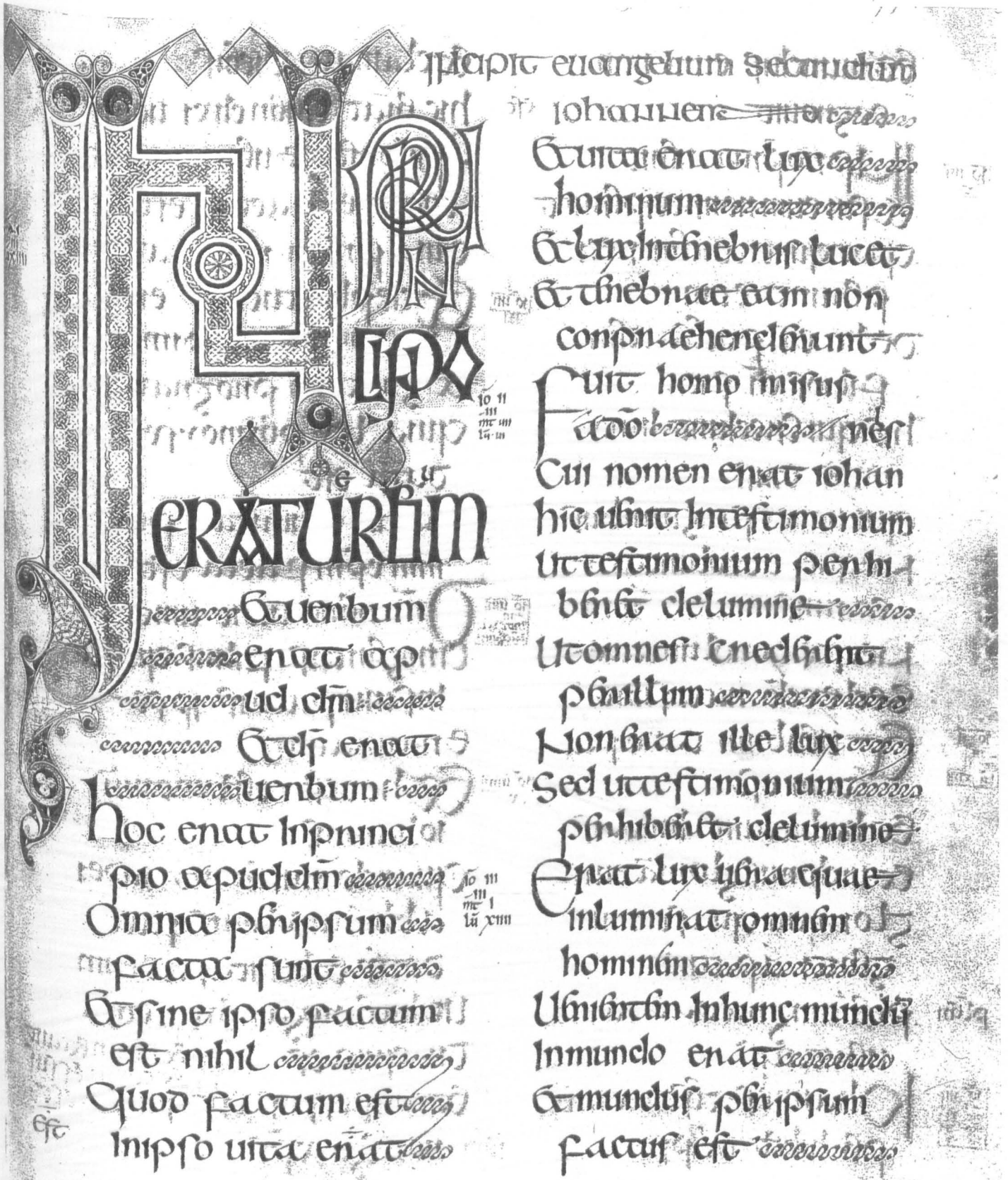
4: 17. A page of eighth-century Insular half-uncial. The Book of Kells, f.145v.

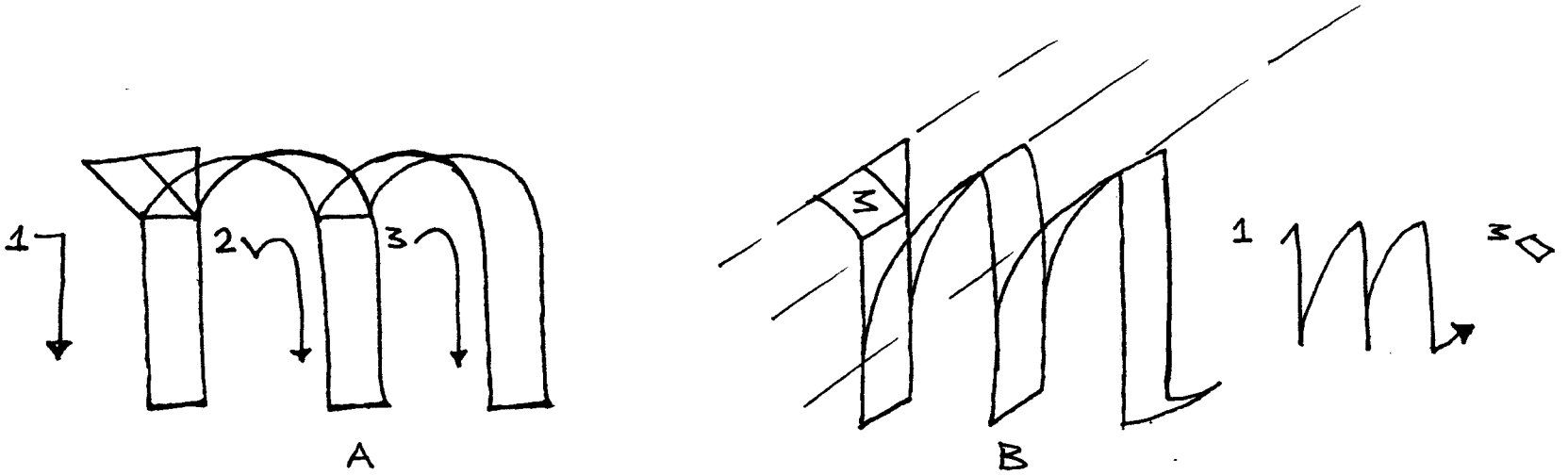
4: 18. A sixth-century *De Trinitate*, continental half-uncial written on papyrus.



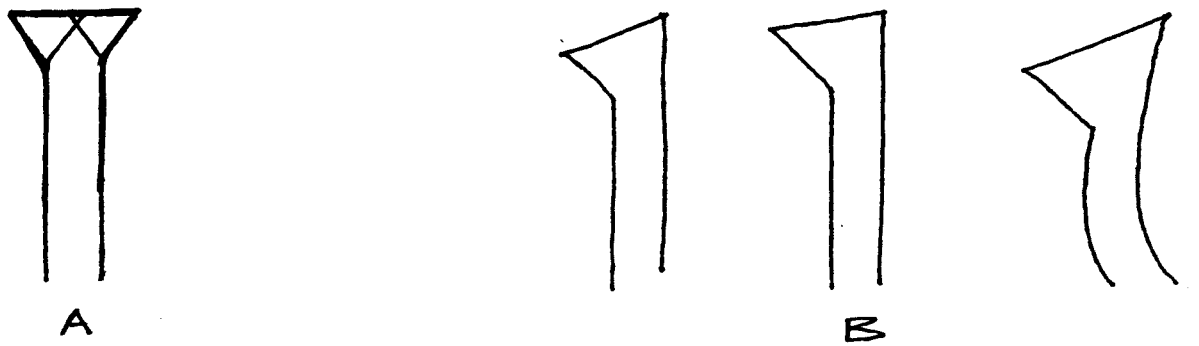
64. — [Saec. VI] - Saint Hilaire, De Trinitate.

4: 19. A page of Insular minuscule, the Echternach Gospels, f. 177, showing the minuscule links between e/r, e/m, e/n, e/t, s/t. Another minuscule upgraded for a grand purpose.



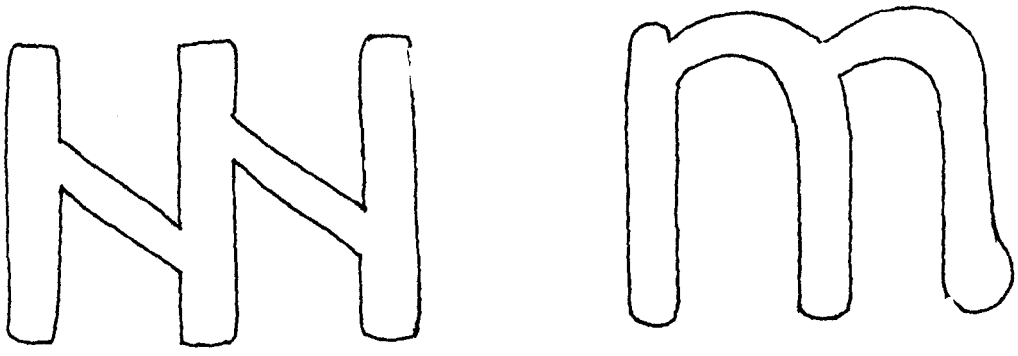


4: 20. Diagrams. A. The springs of a penned half-uncial 'm', B. a penned minuscule 'm'.

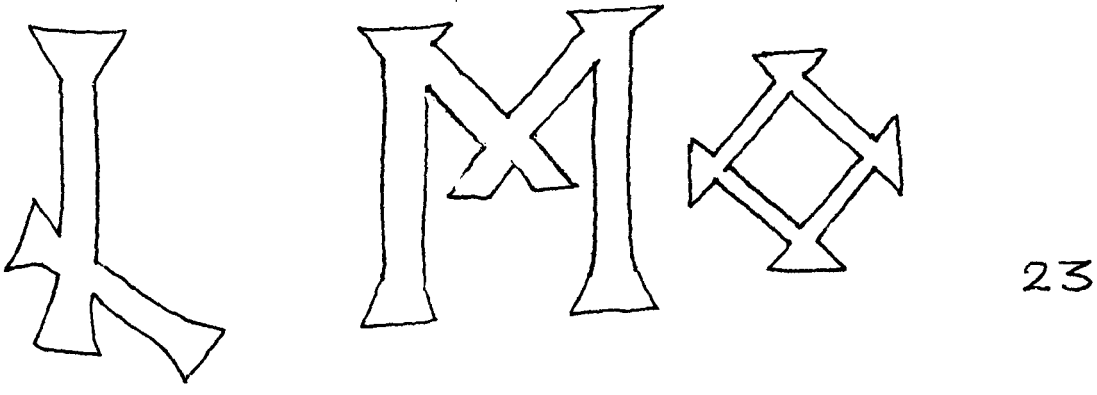


4: 21. A. Symmetrical serif, and B, asymmetrical serif.

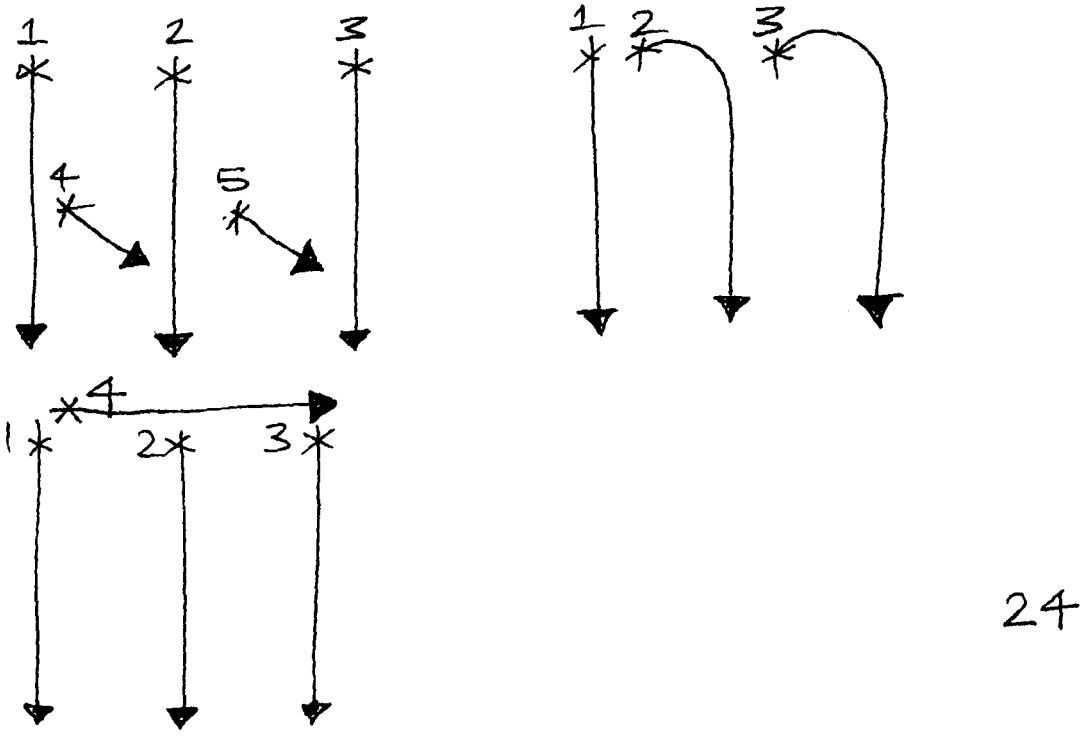
4: 22. The two forms of **M** in the Catamanus inscription.



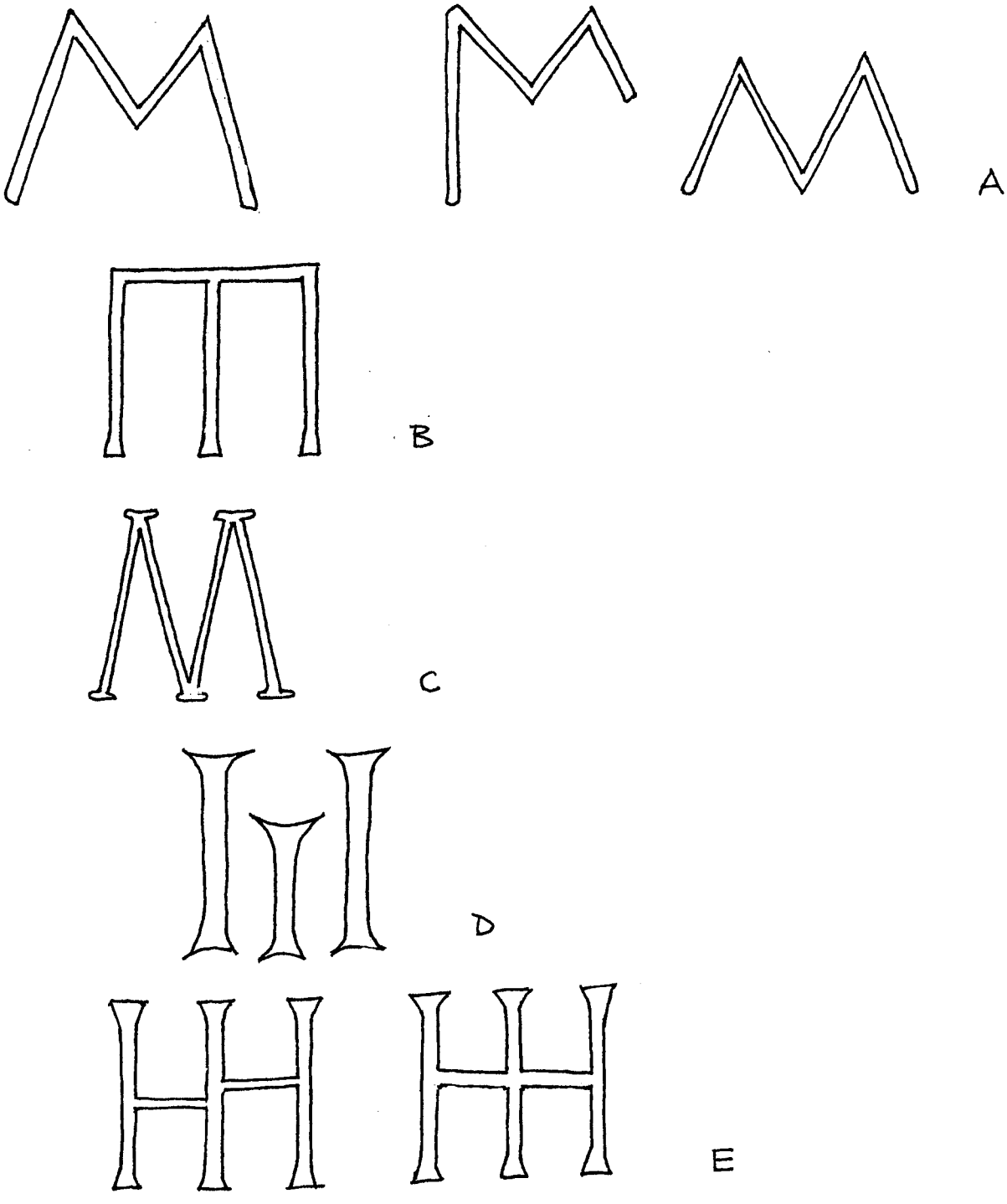
4: 23. Boxed epigraphic letter-forms from Merovingian models.

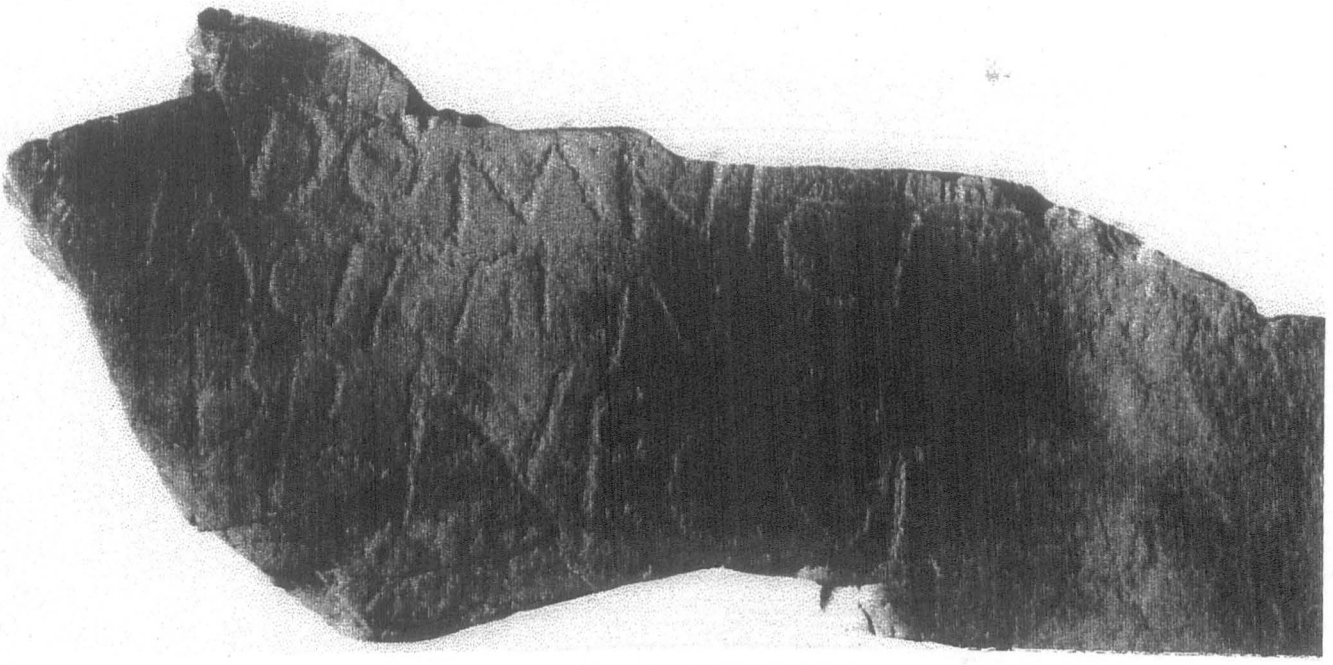


4: 24. Stroke-breaks in epigraphic letter construction.



4: 25. Non-Trajan epigraphic **M**s, in typological order from the fifth to the eighth century. A. Yarrow Stone.B. Kirkmadrine. C. Aberdaron. D. Lethnott. E. Maughold.

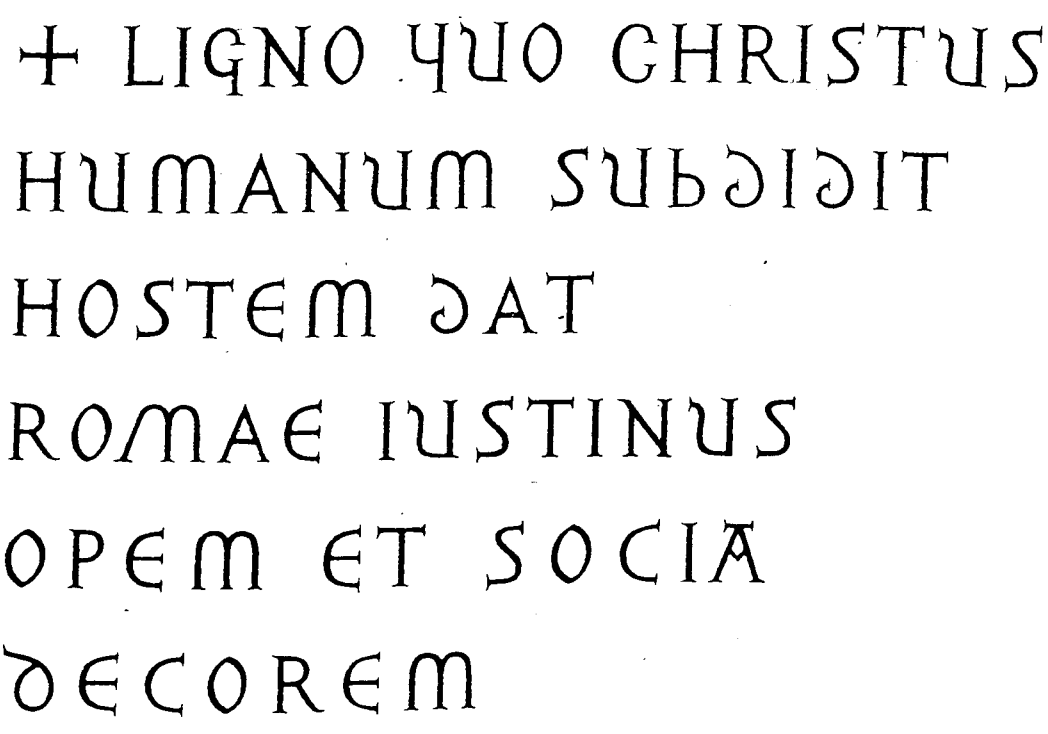




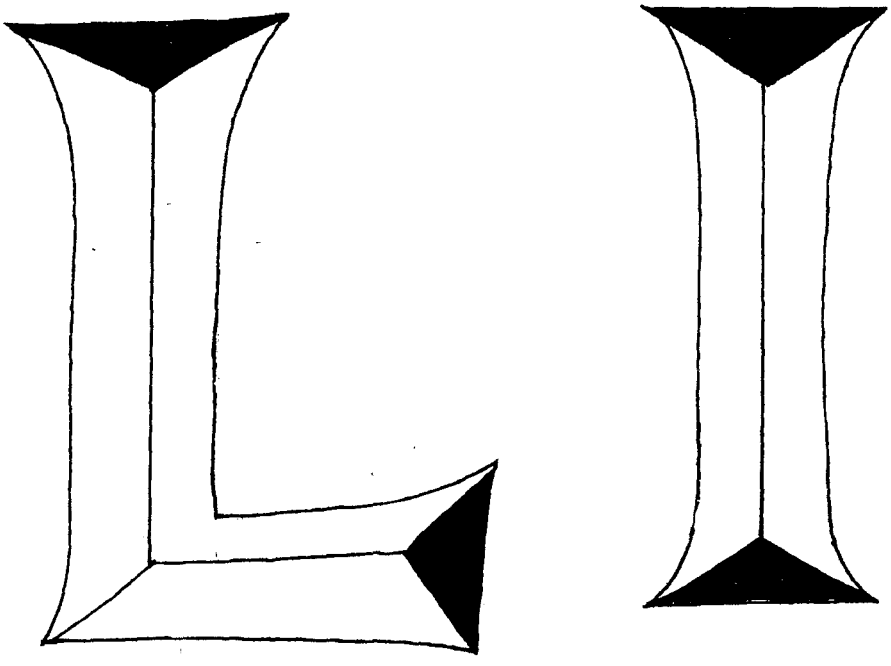
5: 1. The *Domnicus* inscription, ECMW no. 122, pocked overall with a punch. Scanned photograph by N. Edwards.

5: 2. The *Catacus* inscription, ECMW no. 54, incised with a blunt-end chisel. After Nash-Williams.

5: 3. Lettering on the reliquary of Justin II, *c.* 570, showing Stanley Morison's 'syncretic' alphabet. After Morison.

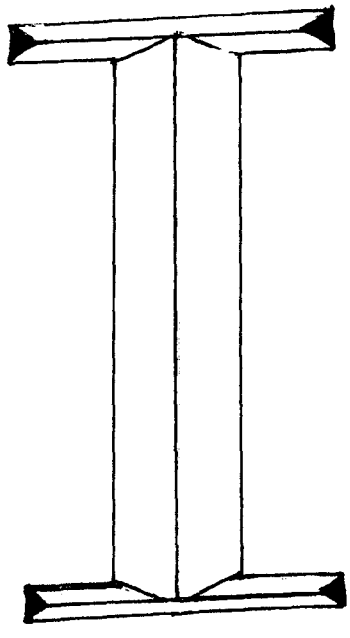


5: 4. Diagram. Showing facets of die-cut coin serifs.

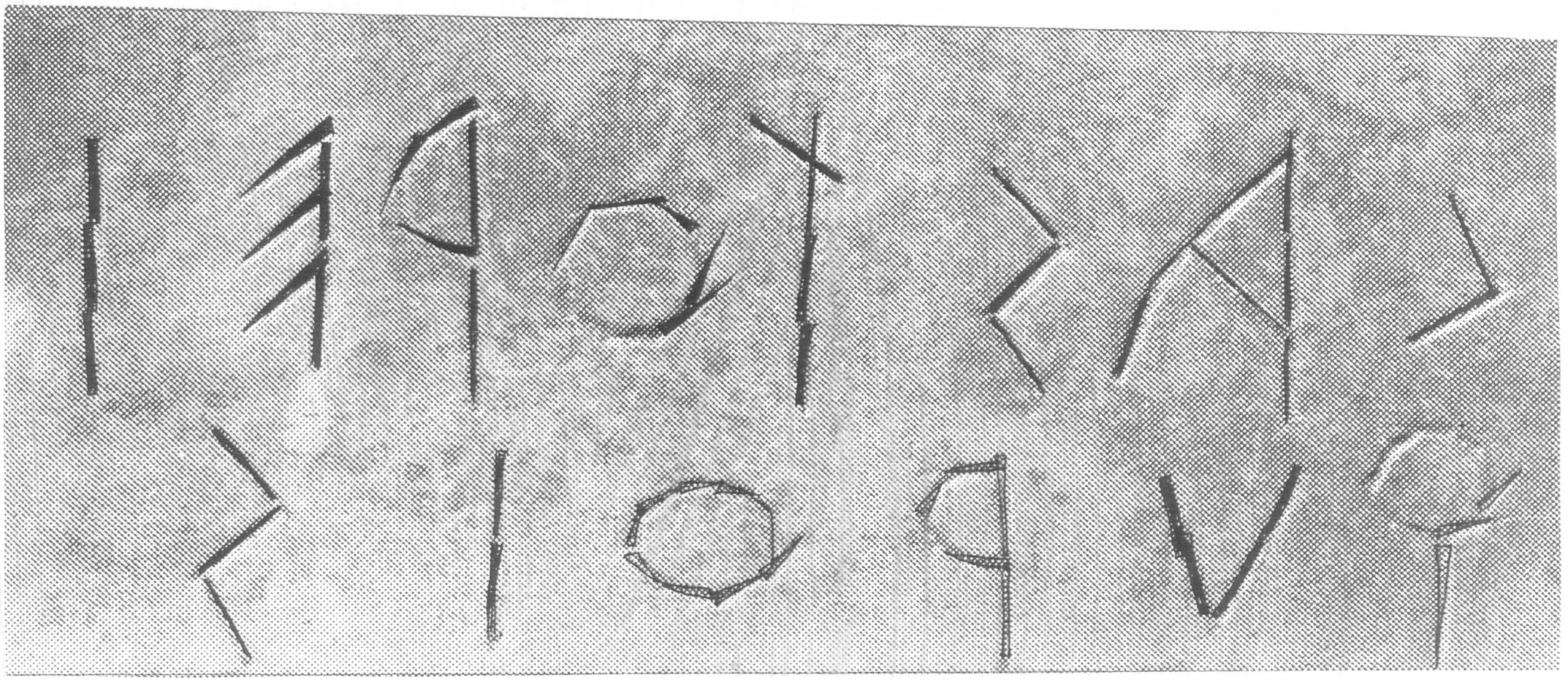


4

5: 5. Diagram. Showing plan of cuts in a bar-serif.

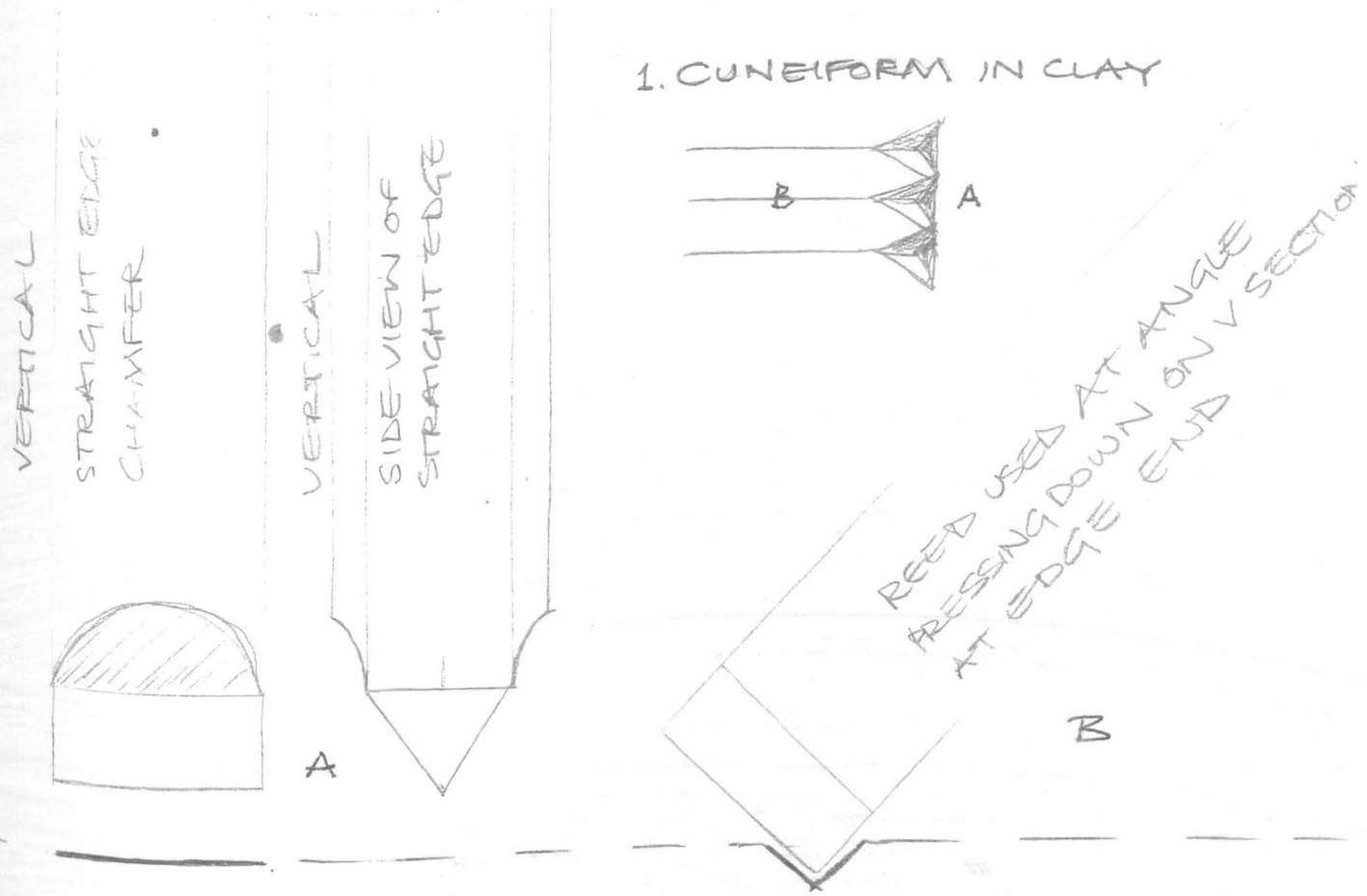


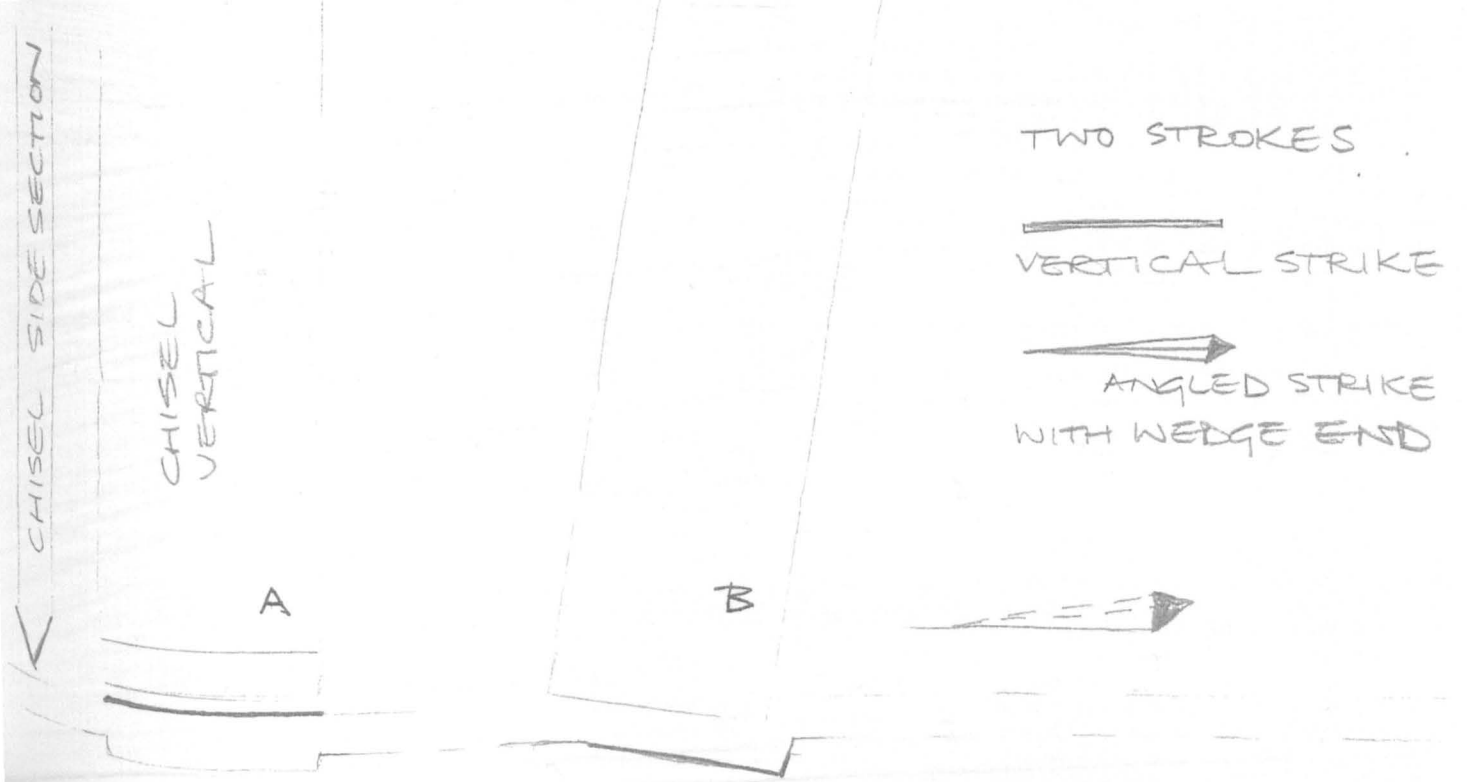
5

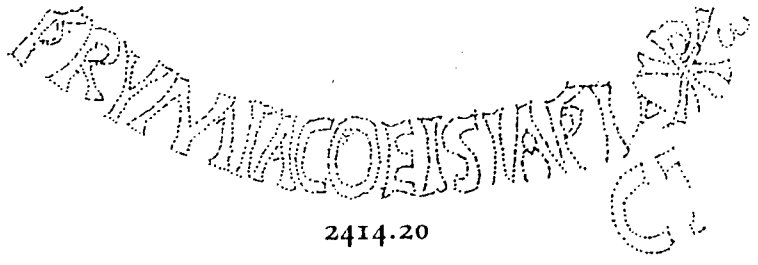


5: 6. Castor and Pollux dedication in Rome, retrograde, early lettercutting in bronze. IILE no.2. The width of the chisel, struck flat against the metal gives an incised line of the same width. See the three strokes of the **S** in *Castor*.

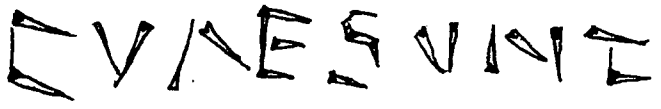
5: 7A. Diagram showing the use of the implement struck side-on, and struck flat; making a letter-stroke. 1. Cuneiform in clay: the flat section, with hold A, and the wedged section with hold B. 5: 7B, showing chisel work in metal with A, upright vertical strike, and B, angled strike giving a wedged end.



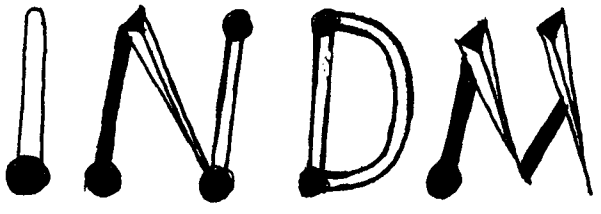




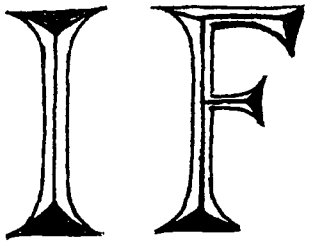
5: 8. Letters outlined on metal in punched dots, modelled on a small silver flask from Traprain Law. After RIB 2414. 20.



5: 9. Letters on metal made with chased strokes. See the Stannington military diploma, ILLUS. 2: 6.

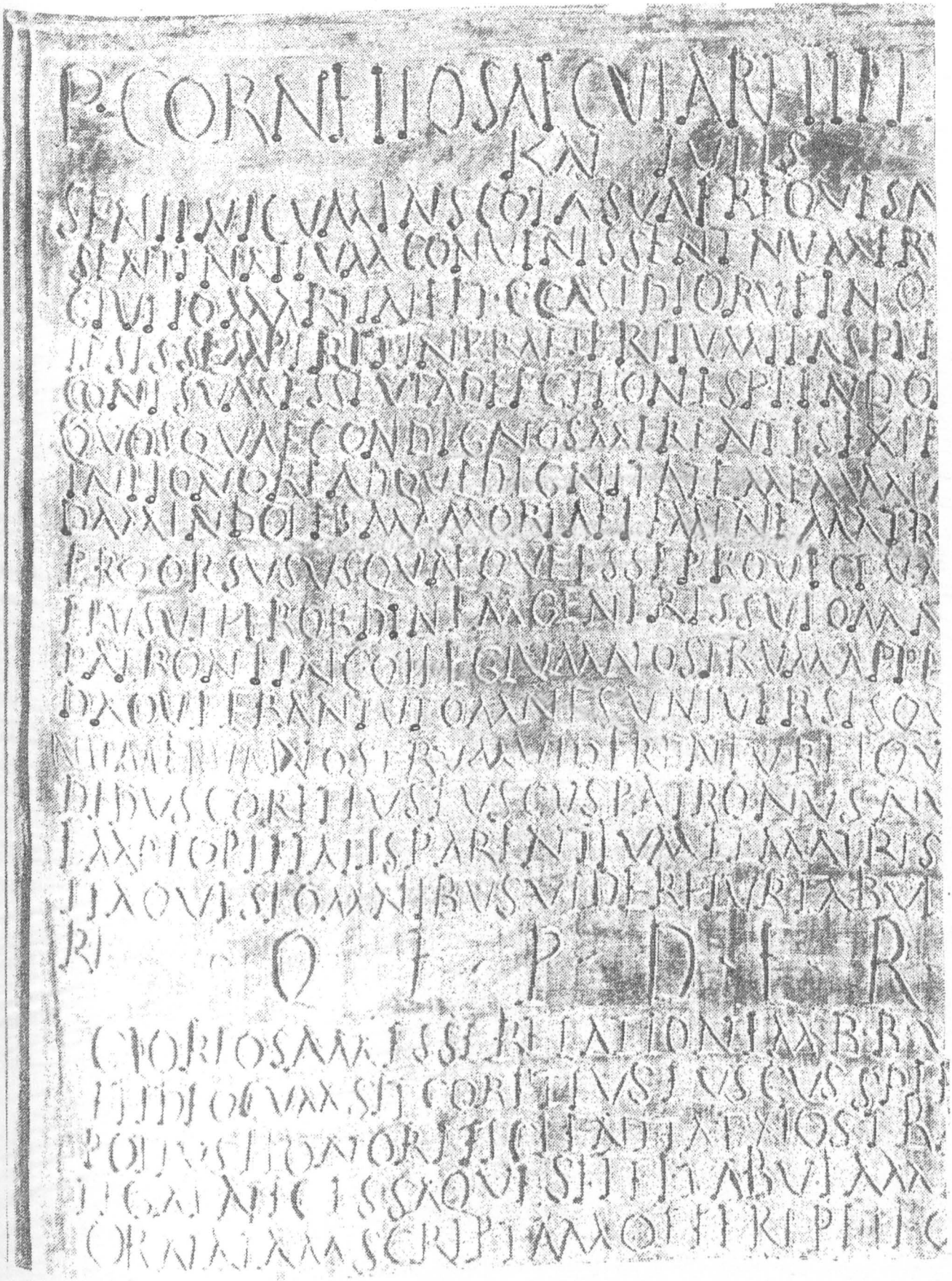


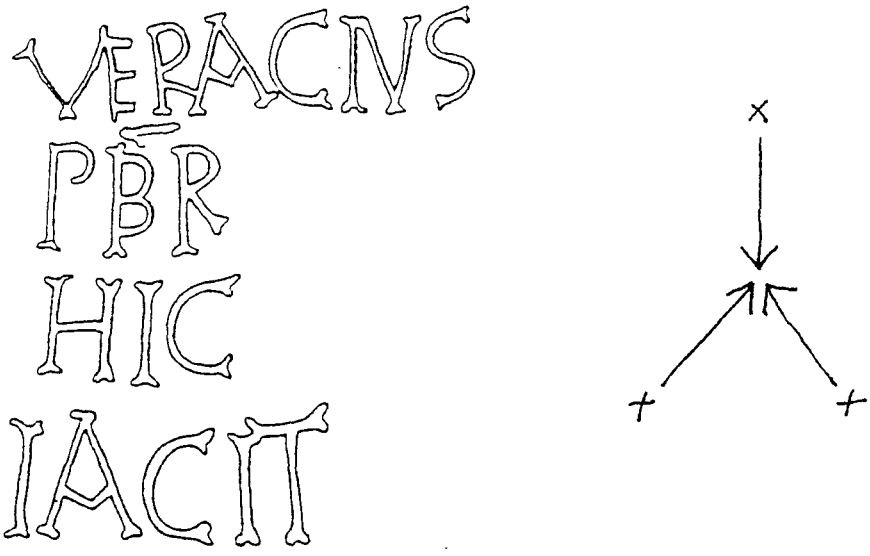
5: 10. Letters made on metal with punched stops, plus a chased linking downstroke. See ILLUS 5: 12.



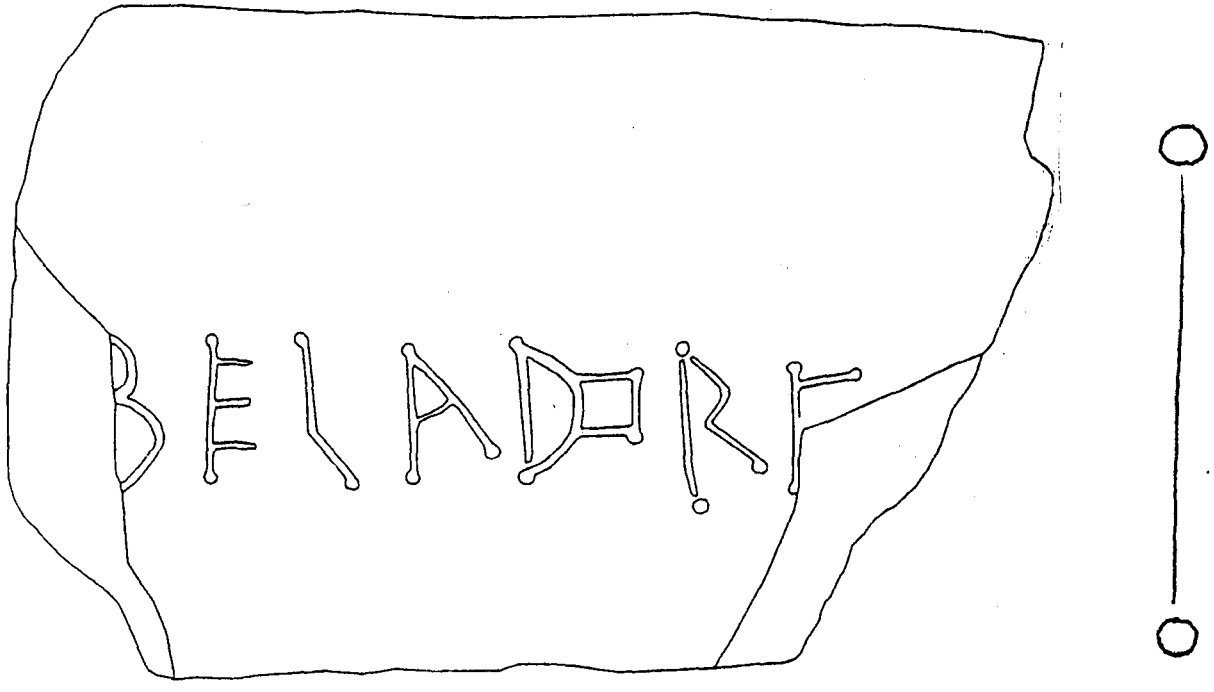
5: 11. Letter cut in wood with two deep seriffed stops linked by a shallower chip-carved line. Drawing after the style of ILLUS. 6: 2.

5: 12. Inscription in bronze, AD 260, showing direction of chasing strokes. Record of a meeting of a *Collegium Fabrum*, Rome, Capitoline Museum. IILE 78. CIL 11. 5748.





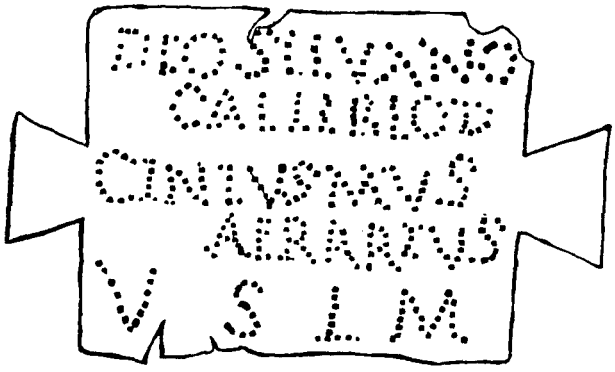
5: 13. The line-ends of ECMW no. 77, the *Veracius* inscription at Aberdaron. Showing the construction of a 'fish-tail' serif. To prevent slips it would be important to make definite the line-ends or 'stops', before the vertical downstrokes were made.



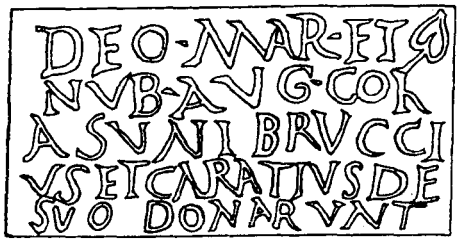
5: 14. The line-ends of IEMB I1 Bais(1), the *Beladore* inscription from Ille-et-Vilaine, Brittany. A contrasting method of making safe line ends, bored with an auger or bow drill in the softer rocks, more likely to spall when worked. As the safety stops could be joined with a repeatedly scored line, the method might be called 'bore and score'.

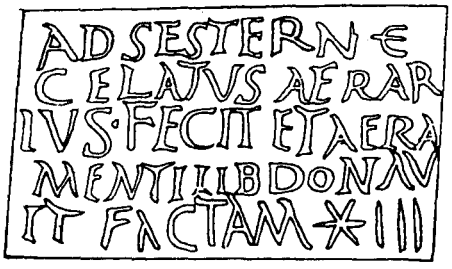
5: 15. Merovingian cast gold openwork ornament, with additional engraved ornament struck and chased, from the *Cabinet de medailles*, BN, Paris.

194



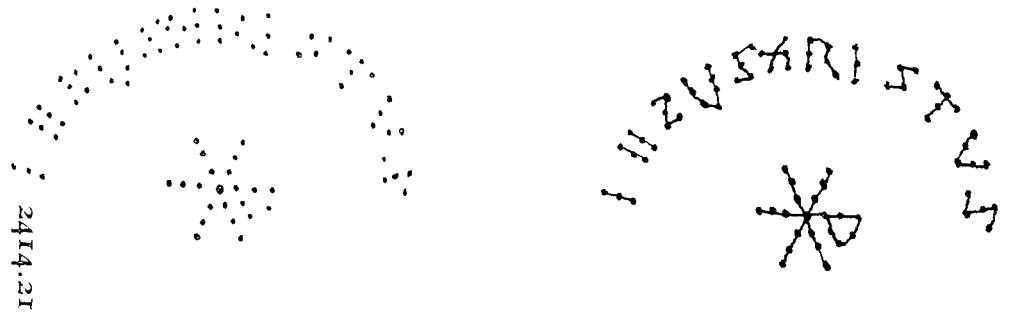
5: 16. *Cintusmus* plaque, from Colchester. Inscription, possibly fourth century, by the coppersmith Cintusmus, punched in a bronze votive plate, RIB no.194.





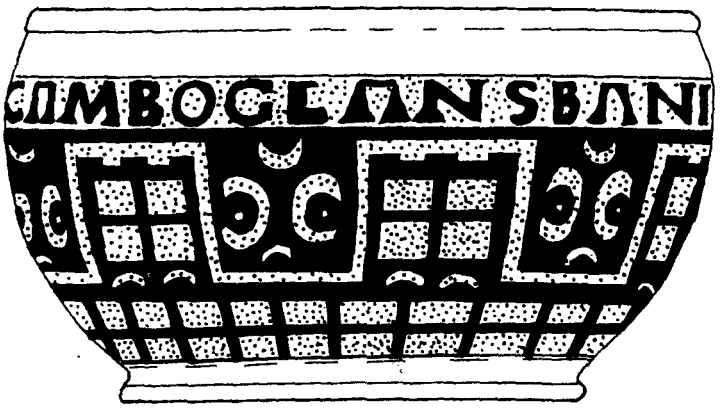
274

5: 17. Another example of the use of the word 'aerarius' in a dedication, RIB no.274. Found on the course of the Foss Dike at Torskey in Lincolnshire around 1774, and dated to the middle of the second century by Gough and Huebner.

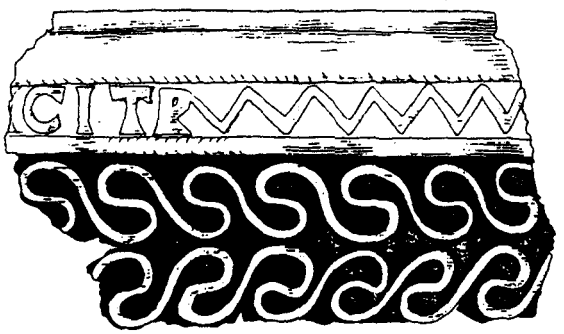


2414.21

5: 18A. From the Traprain Law hoard, an inscription on a silver strainer, hemispherical in shape; letters: a *chi rho* and *Iesus Christus,* made by the method of punched-through dots and employing extreme angularity of letter-form, RIB 2412.21; 5: 18B shows the inscription with its dots joined up to aid legibility.



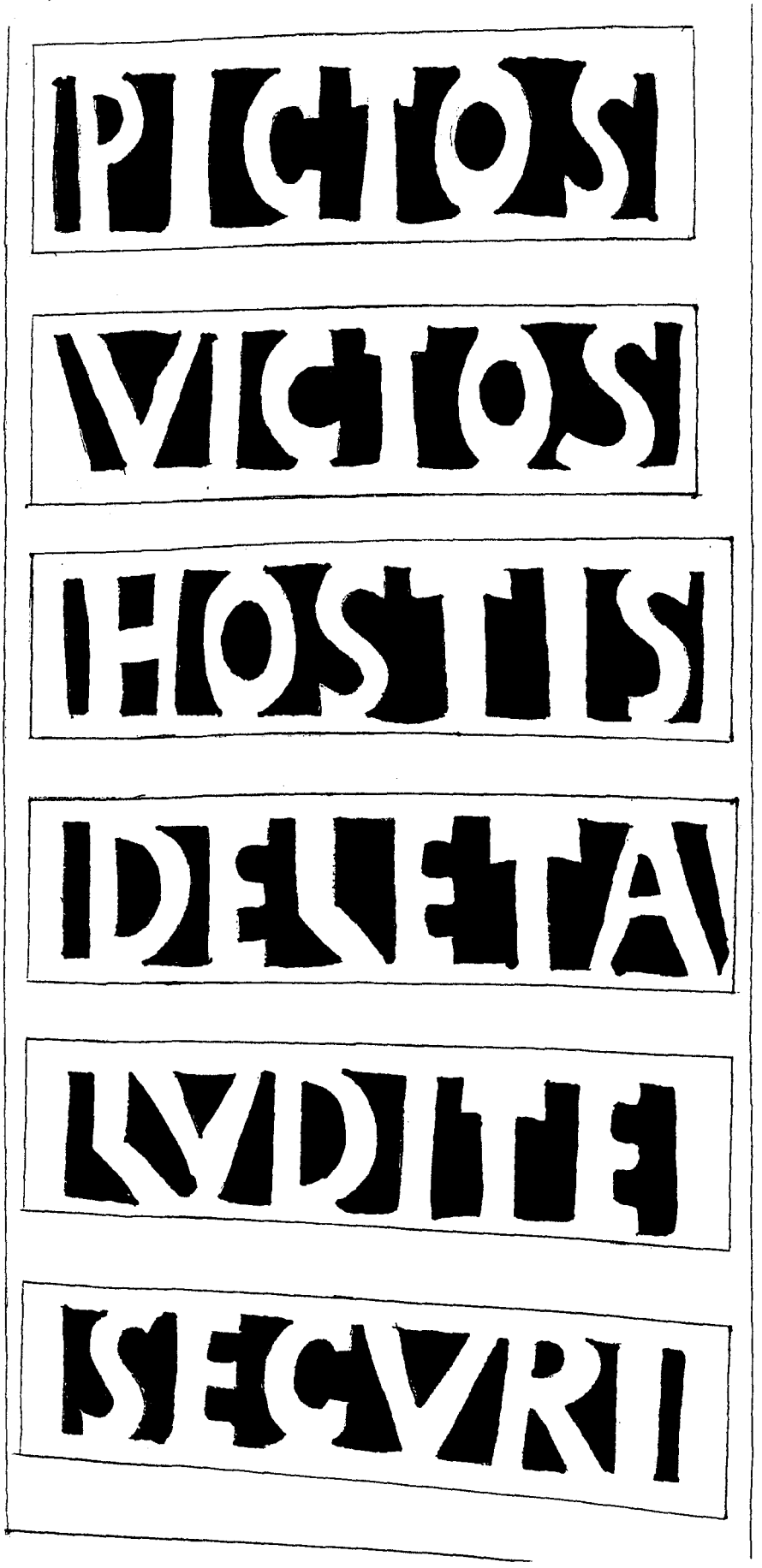
2415.53

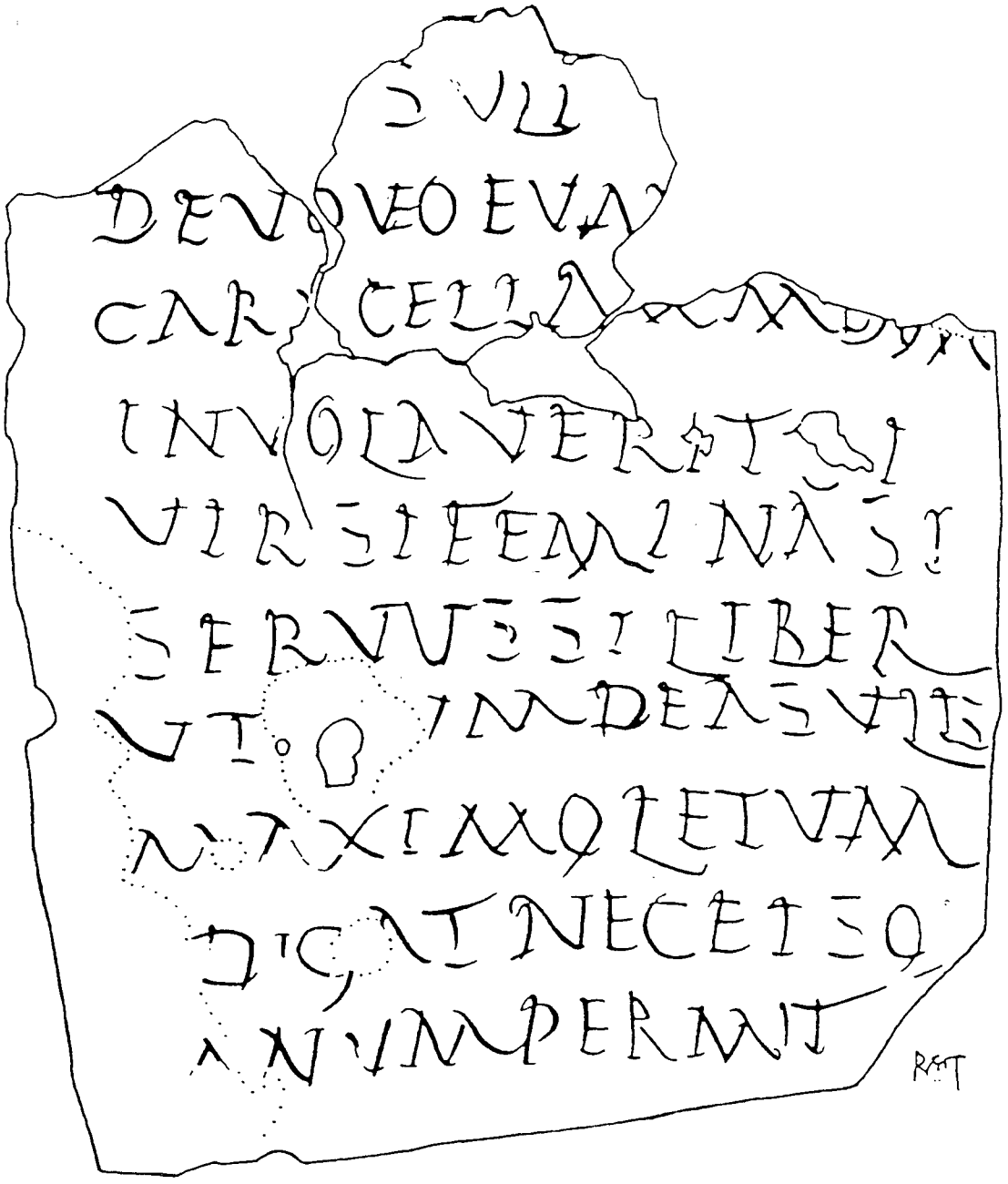


2415.54

5: 19A. The Rudge cup and its inscription, RIB 2415. 53. Found at Rudge in Wiltshire, small bronze bowl once decorated with *champlevé* enamels in red, green and blue. Has a schematic rendering of Hadrian's Wall and a list of fort names around the rim; and, perhaps from the same workshop, thought to be Celtic: 5: 19B. RIB 2415. 54, found at Beadlam, North Yorkshire, with contrasting zig-zag and meander pattern in blue enamel.

5: 20 Fourth-century copper alloy dice-tower with *interassile* inscription, from Vettweiss-Froitzheim, Germany. Drawing from *Constantine the Great* catalogue no. 69. Note the auger or drill-holes at the junction of horizontal and vertical for example between the top line of the **V** and **I** of *Victos*, and the bottom line of the **T** and **A** of *Deleta*.





5: 21A. Tabellae Sulis no.10, after Tomlin, in comparison with B, a later inscribed tablet of silver from Poitiers, RIG L-110, after Maréchal.

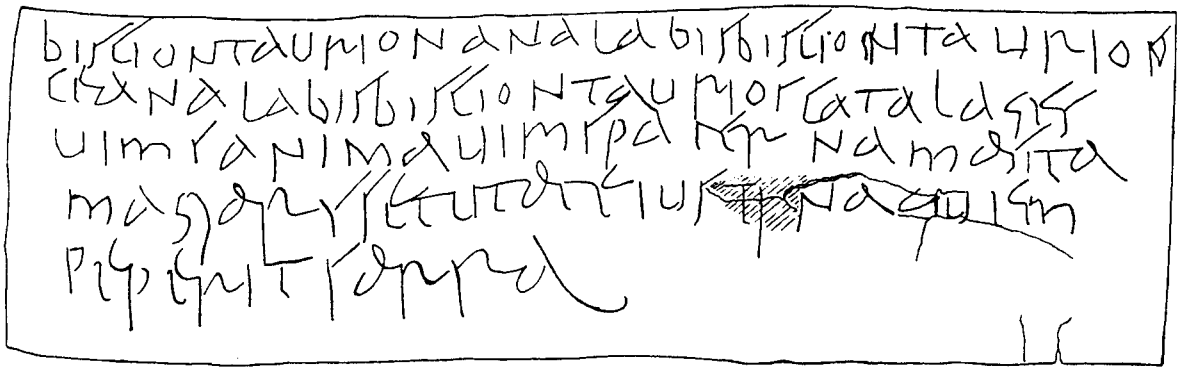
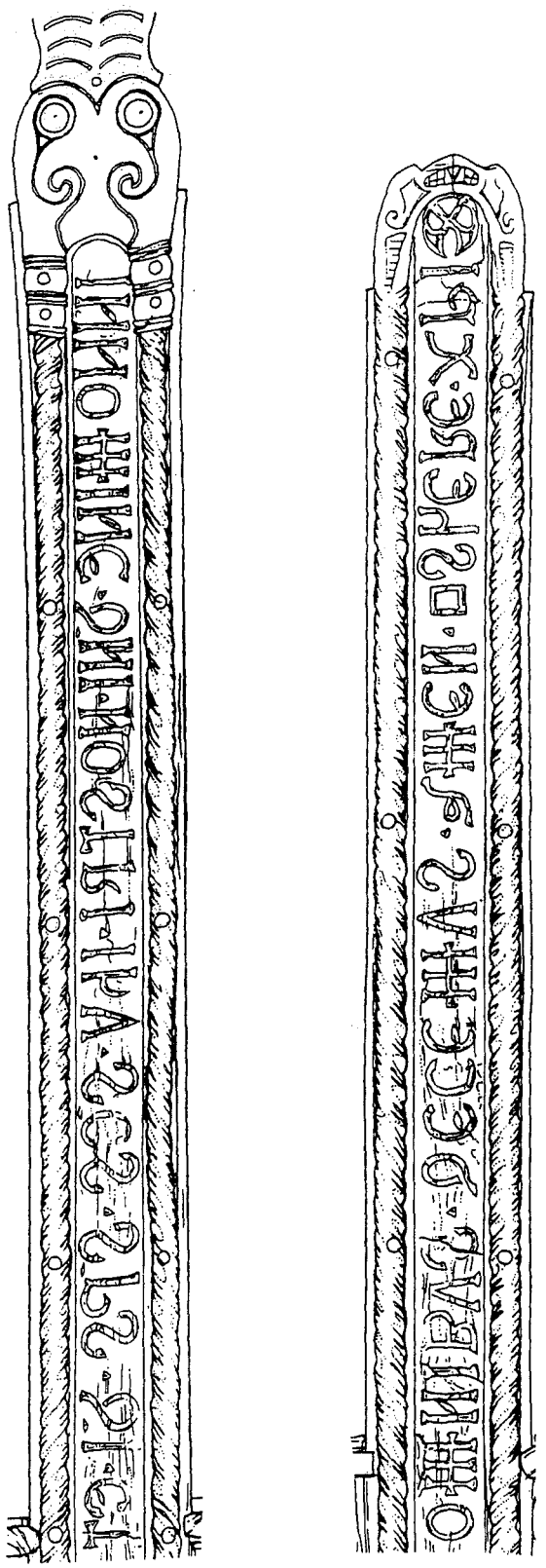


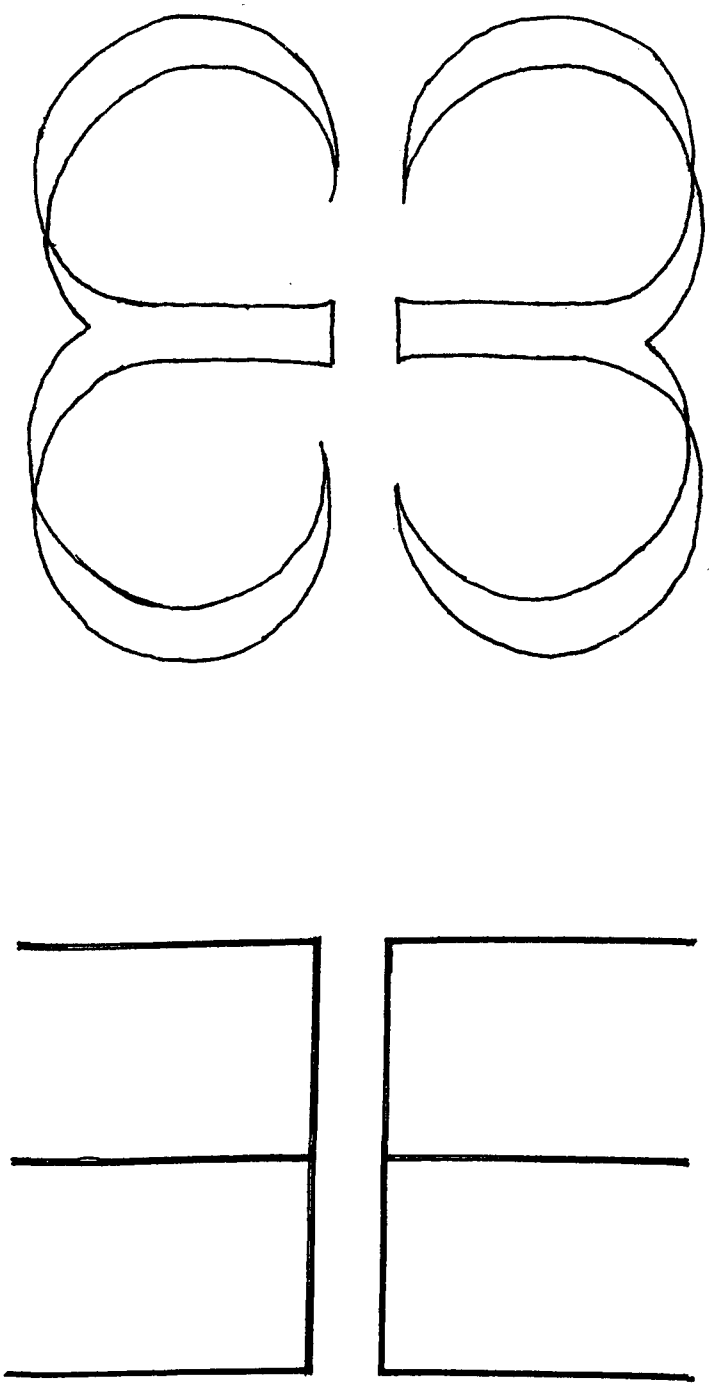
Fig. 162 – Lamelle d'argent *L-110, Poitiers (photo MAN ; dessin R. Marichal).

5: 22. The geometric capital inscriptions around the rim of the Ardagh chalice, after Dunraven.

5: 23. The Coppergate helmet inscription, after Tweddle.



5: 24. Diagram. Angularised versions of curved pen-forms..



5: 25. Details of ornament on the late Iron Age Lisnacroghera scabbard plates, after Henry. IA Monochrome plates nos. 6 and 7. Note use of compass-scored circles and drilled or augered dots.

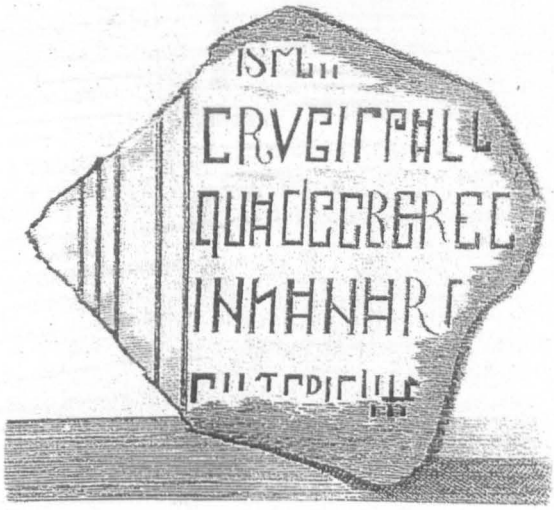
5: 26. The Moylough belt-shrine, after Henry. IA Monochrome plates nos. 34 and 35.

5: 27. The Brigomaglus inscription from the legionary museum at Chesters. Now extremely weathered, this is a line-drawing of the inscription made by G. C-E.

5: 28. A. The mid-eighth-century Flixborough plaque from Lincolnshire, uppermost palimpsest inscription, B.the lost inscription from Caistor, after Gough, C, the lost dedication inscription from King Alfred's city walls at Shaftsbury, AD 880, after Sturdy.

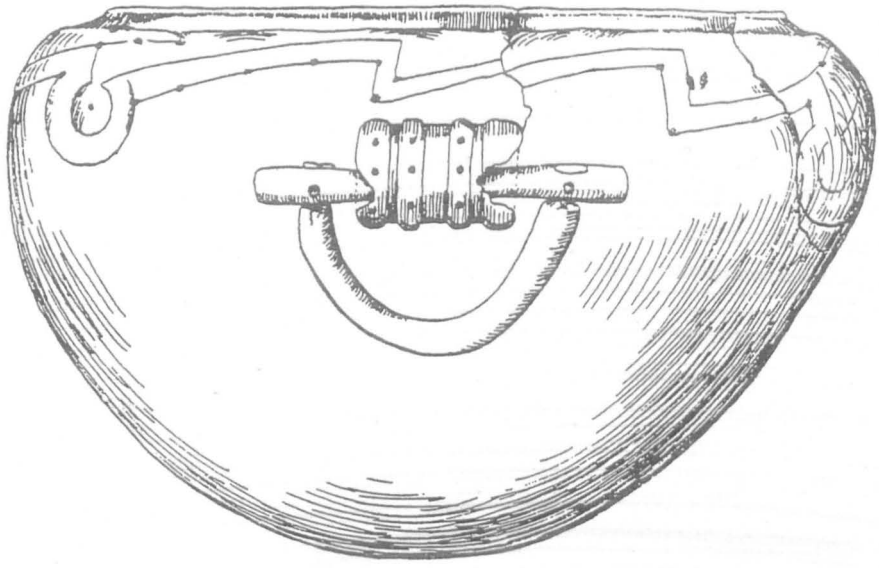
A

C

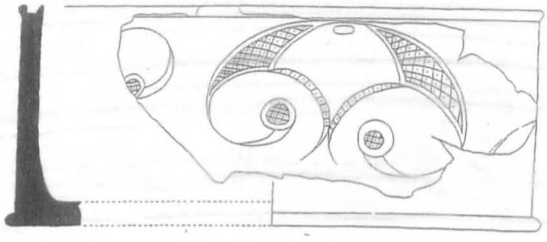


18 Caistor, from Gough (1806), II

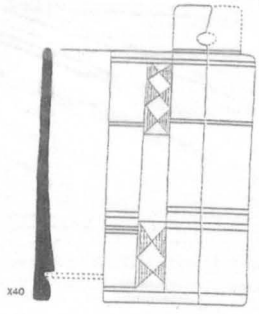
B



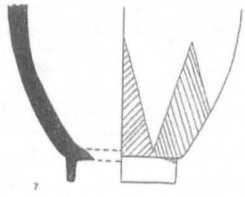
A



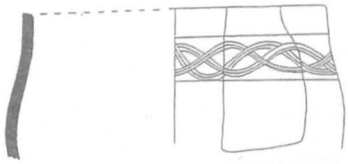
B



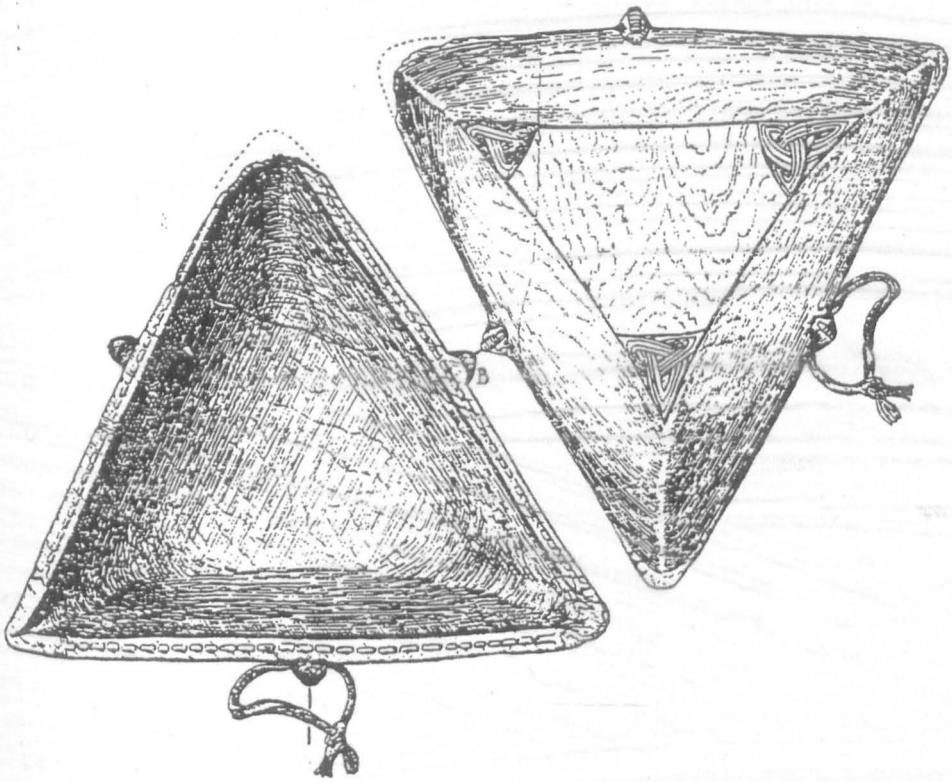
C



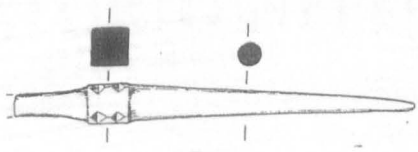
6: 1A. The carved wooden cauldron from Altarte, Co. Monaghan; after A. Mahr, 1934; B, curvilinear patterning on a turned piece from Glastonbury Lake Village, after Earwood; C, geometric patterning on a carved piece from Glastonbury, and one from Ballinderry 1, after Earwood.



A

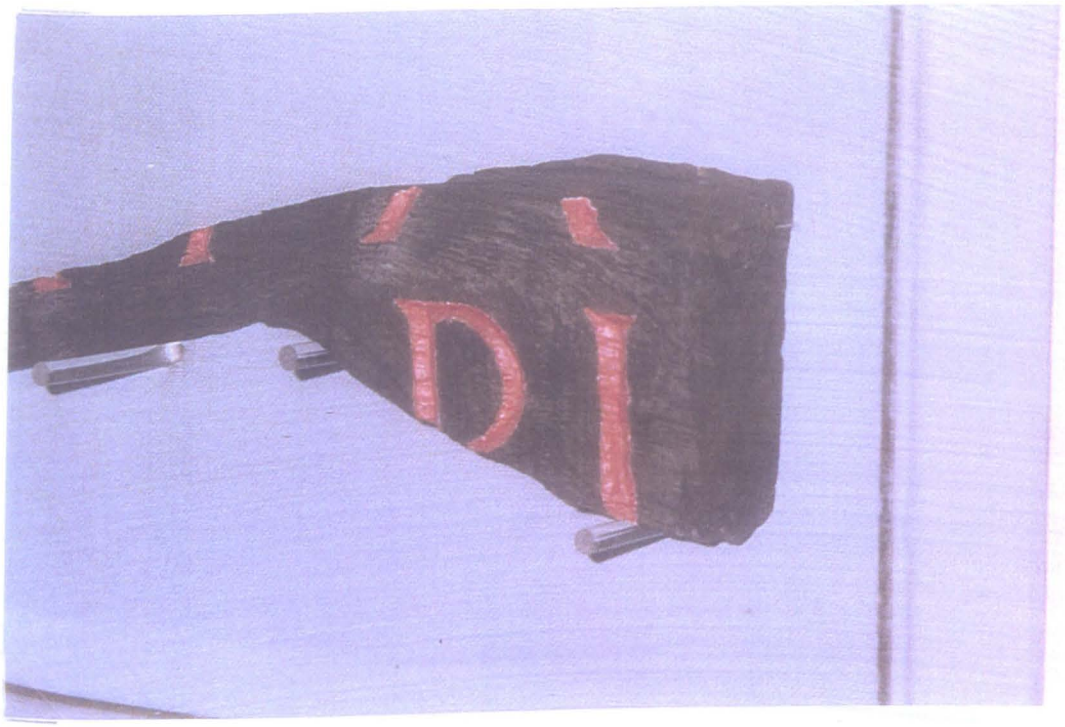


B



C

6: 2A. Decorated rim of wooden turned bowl from Ballinderry, Co. Offaly, crannog I; B, wooden hanging bowl from Cuillard, Co. Roscommon, after J. Raftery 1966. C. Distaff from Ballinderry Crannog 2, showing chip-cut lozenge patterning. After Earwood.

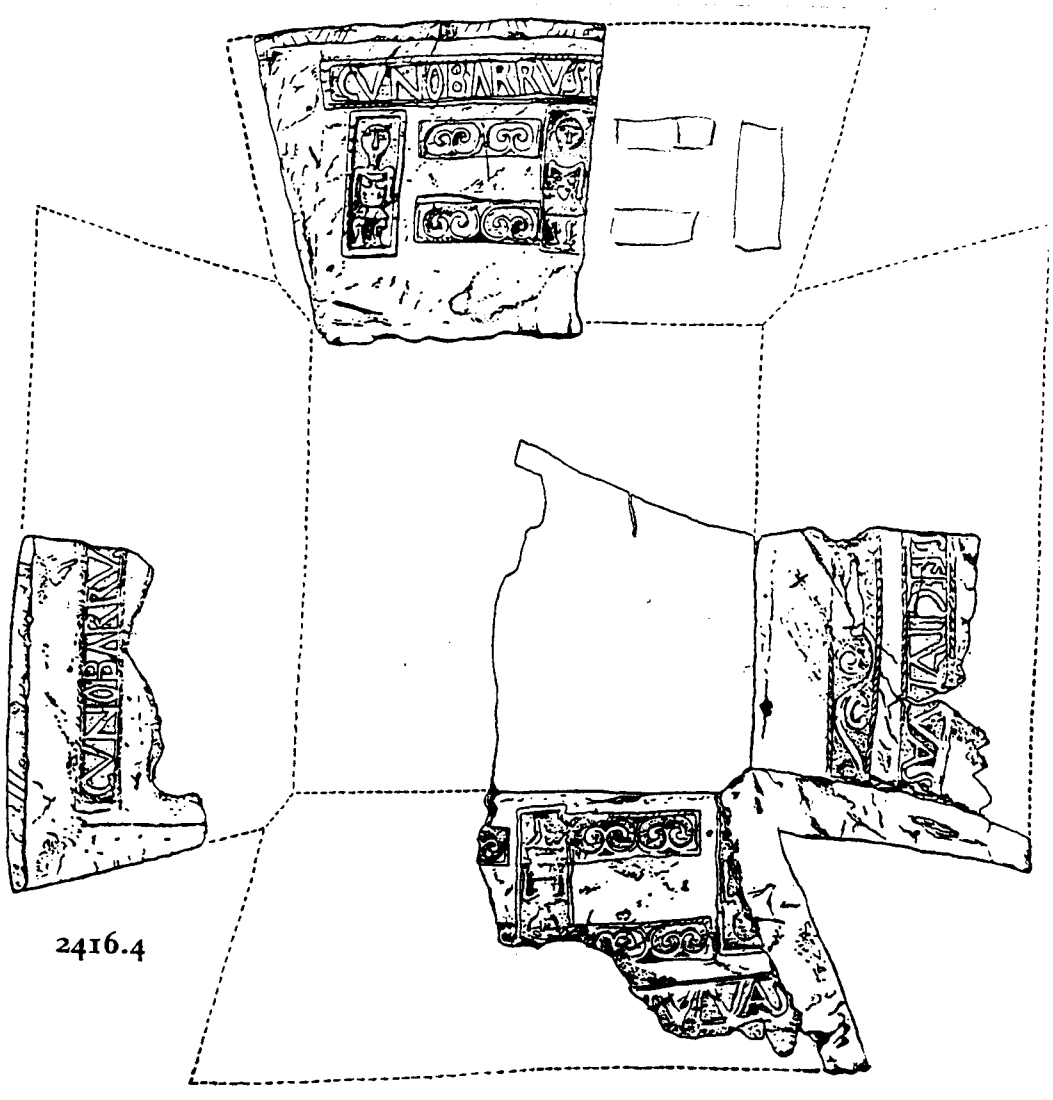


6: 3. A photograph of the Tully House fragment of a wooden dedicatory slab from the Stone-Wall milecastle of Hadrian's Wall, near Birdoswald. Photograph G. C-E.

1935

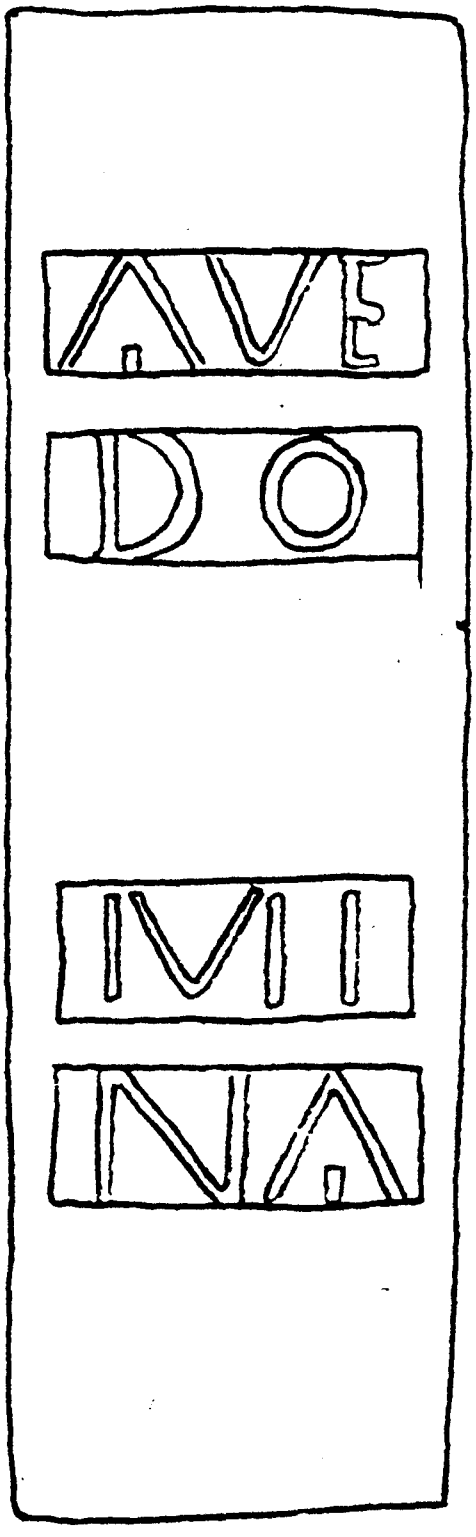
IMP·CAES·TRAIANI
HADRIANI·AVGVSTI
LEG·II·AVG·A·PLATORIO·NEPOTE
LEG·PR·PR

6: 4. R. G. Collingwood's reconstruction of the dedicatory slab, fragment shown above. RIB no.1935.



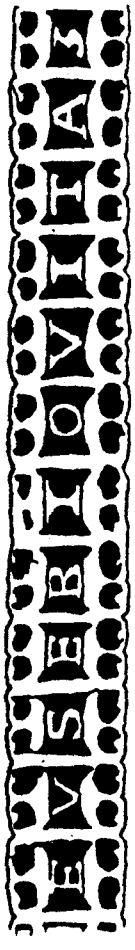
6: 5. The *Cunobarrus* inscription, moulded in lead. RIB no. 2416. 4., from Caistor, Lincolnshire. After RIB.

6: 6. The *Camulorix* inscription, moulded in lead. ECMW no. 27., from Llangeinwen, Anglesey. After Nash-Williams.



A

2489.6



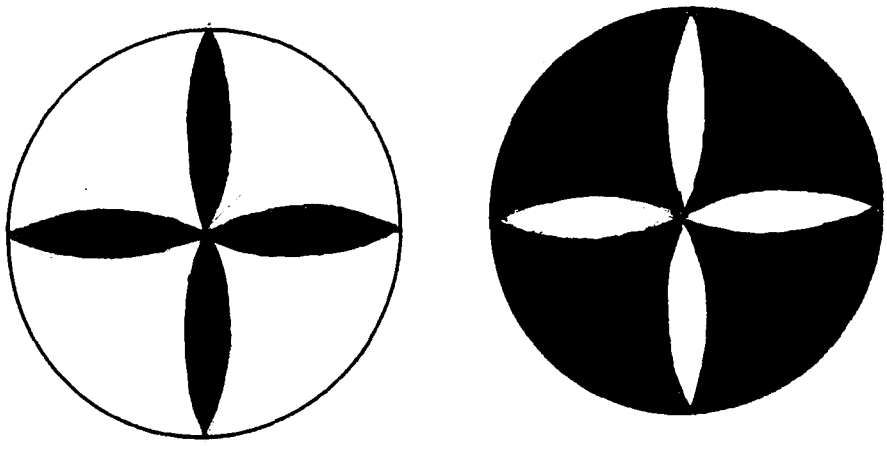
2422.5

B

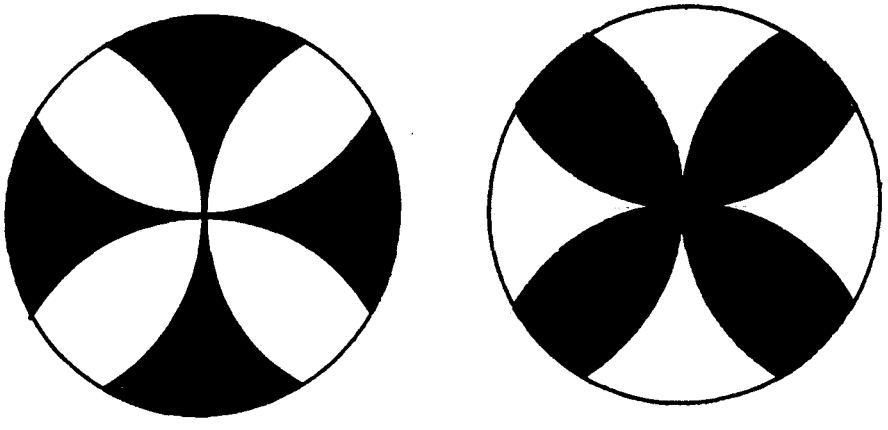
2422.1

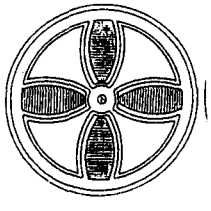
C

6: 7A. Inscription stamped in ceramic tile from wooden mould. RIB. no. 2489. 6 from Caerleon, Gwent; B, *Opus interassile*, openwork letters cut out in a gold ring. RIB no. 2422. 5. from Bedford, C. Using the same technique, but combining fish-tail and symmetrical serifs, a gold ring from Corbridge, Northumbria, RIB 2422. 1.

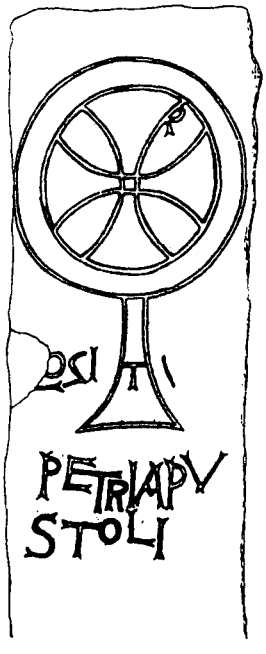


A





B



C

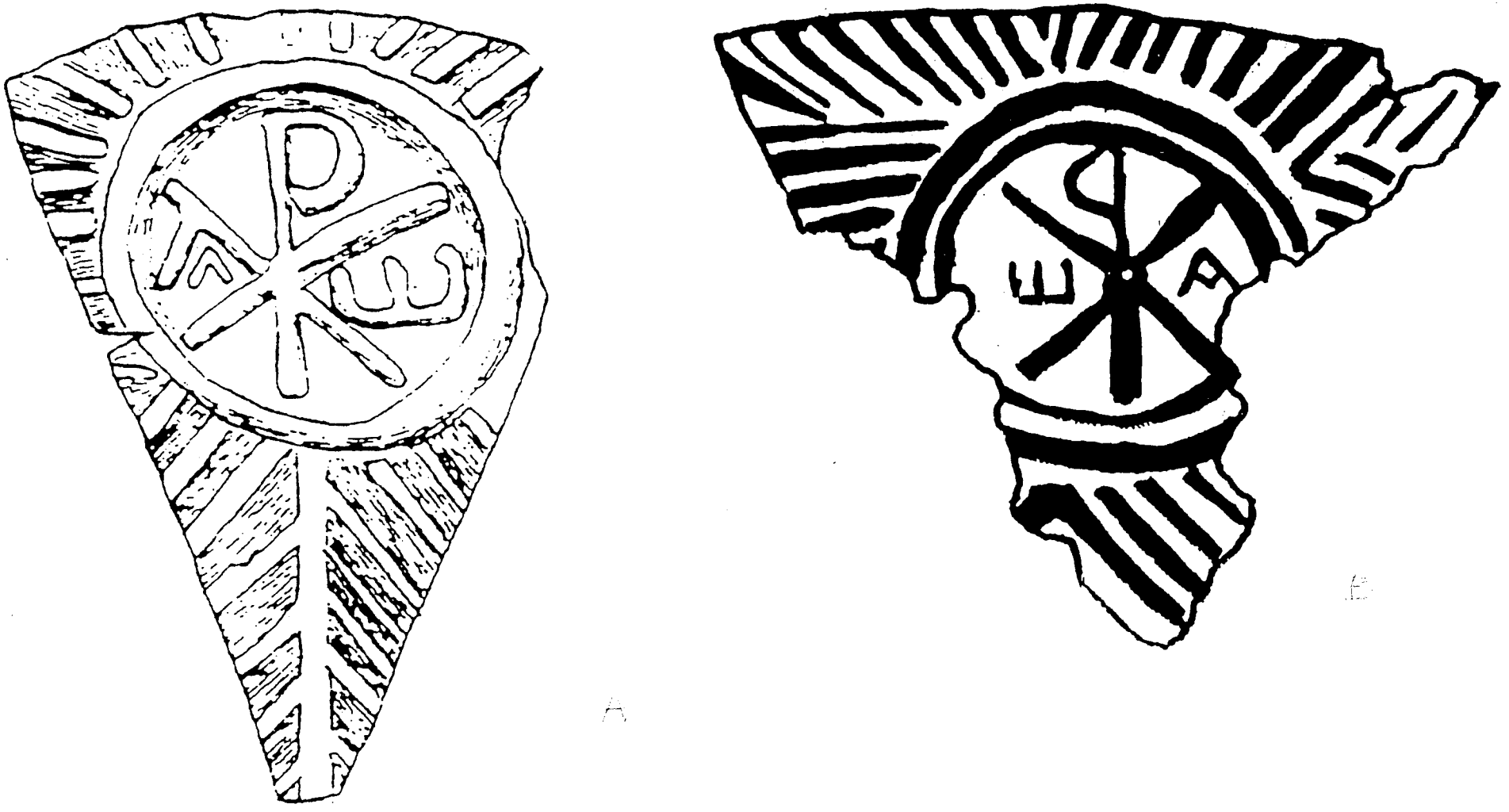
6: 8A. Diagrams to show the different effects of negative and positive images of quatrefoil patterns. With two examples of the cross of arcs type in stone: B, from St Dogmael's, Pembrokeshire, ECMW no.388, and C, from Whithorn, Galloway, CIIC. no. 519.

1266

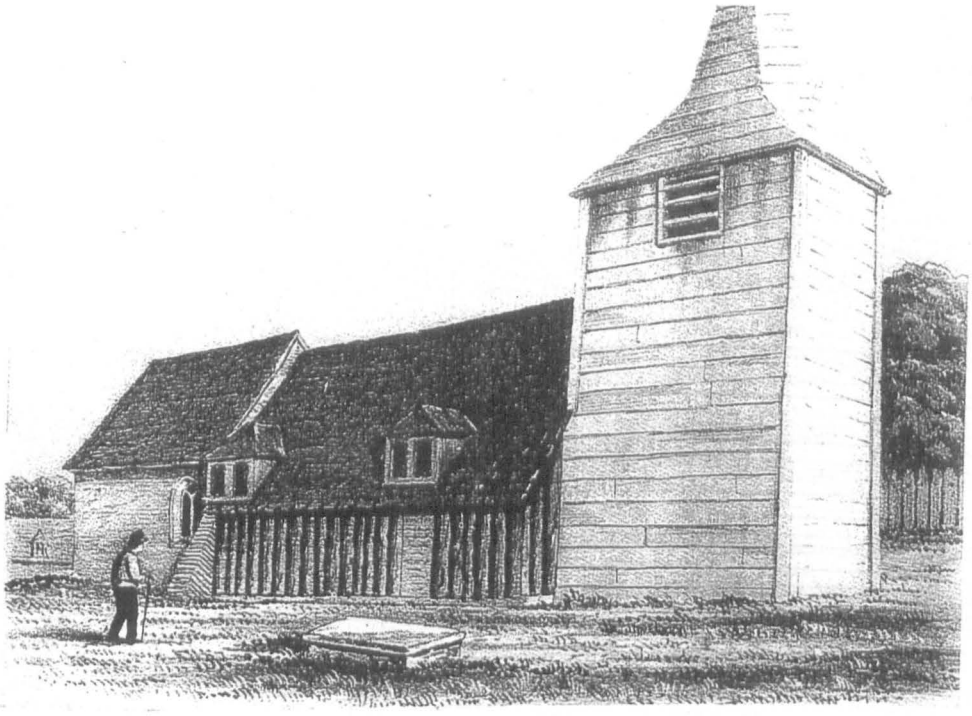
1267

448

6: 9. Three Roman altars showing the use of hexafoils and quatrefoils as decoration: A, RIB no. 1266 and B. RIB 1267 both from High Rochester (Northumberland) and C, RIB no.448 from Chester (Cheshire).

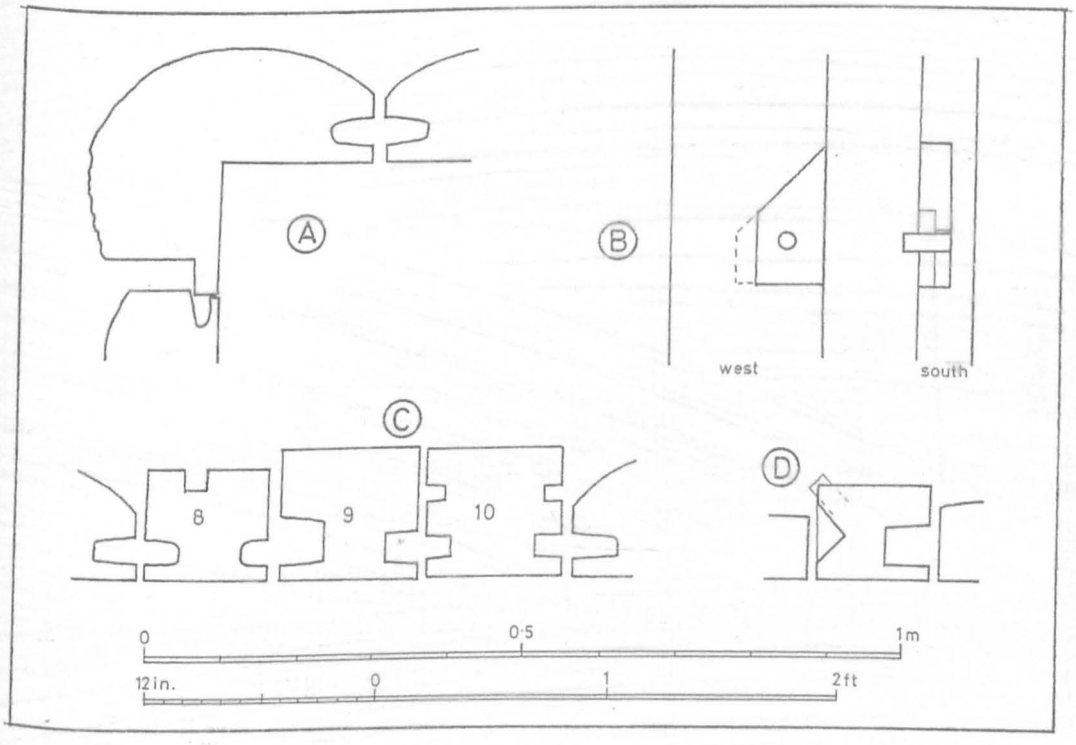


6: 10. The Water Newton hoard, relief votives RIB nos. 2431. 5 and 9. See Appendix 1. no 3 A and B.



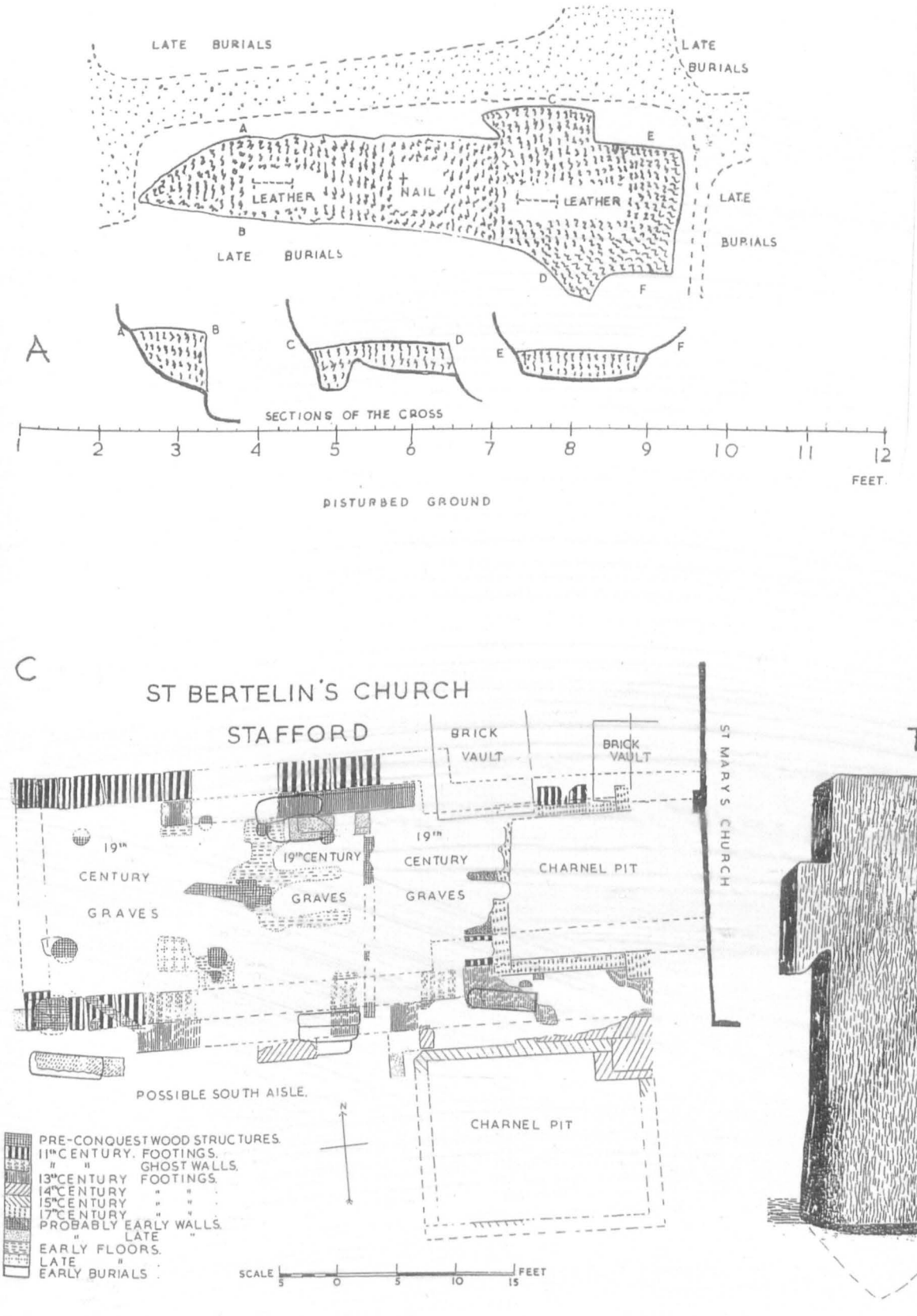
Suckling's drawing of 1845

Greensted church

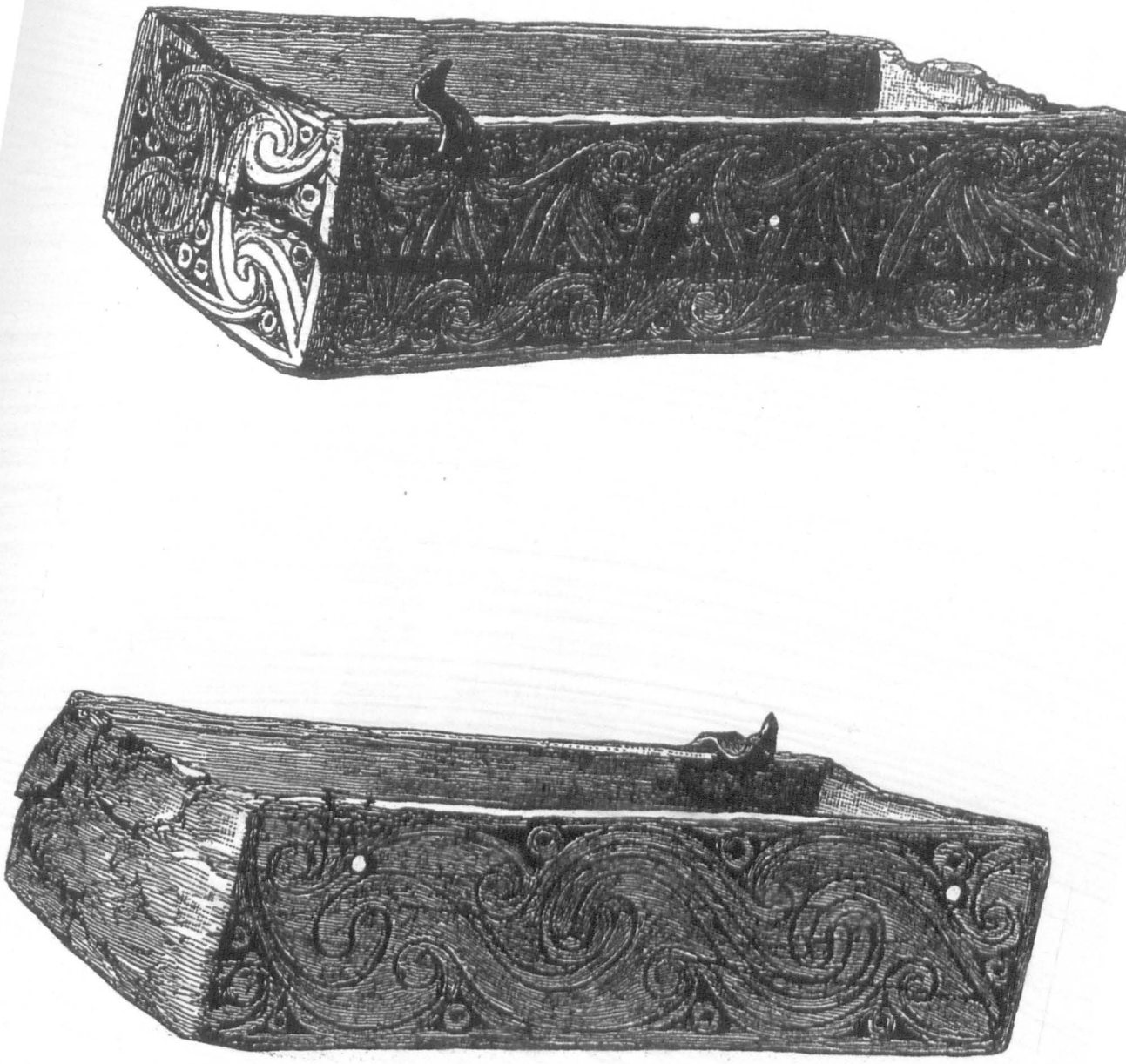


Greensted church (1960). Details of planks of the nave wall: A. North-west corner post; cross-section. B. Plank 3 in the south part of the west wall; elevations of the south and west sides, with traces showing that a structural member was once mortised into this plank. C. Planks 8, 9 and 10 in the north wall; cross-section. D. Plank 4 in the south part of the west wall; cross-section.

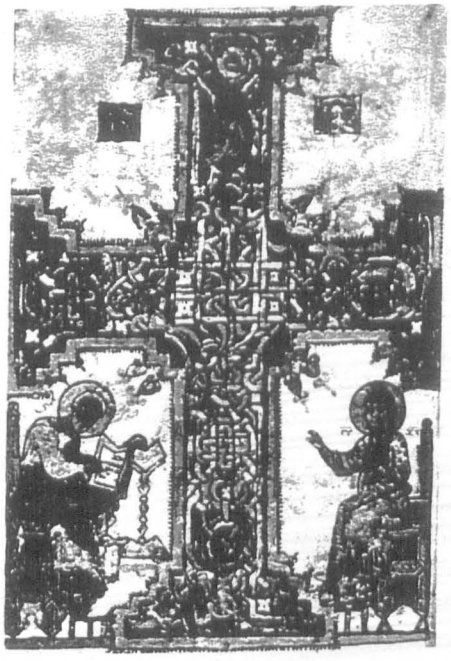
6: 11. Greensted Curch, Essex. A, drawing of 1845 after Suckling, and, B, a plan of the various sections of the planks of the nave walls, after Taylor.



6: 12A. St. Bertolin's Church, Stafford. A Plan and section of the excavation of the cross at St. Bertolin's; B, a reconstruction of the buried wooden cross originally at the centre of the wooden church, after Oswald; C. Site plan showing relationship of St. Bertolin's to the present St. Mary's Church



: 13. Carved wooden box containing woodworker's tools, from Birsay Bog in Shetland.
even and a half inches in length, *c.* three and three quarter inches deep. After *PSAS*.



6: 14. Coptic manuscripts showing interlace decoration and the reductive style of Greek uncial, after Badawy. A. Shows a stepped cross and the use of interlace infill, and B shows the remarkable lack of inflection in broad-edge Coptic uncial, with the pen moving abruptly from thin to thick stroke, as in the making of the **O**, which is, as a result 'boxed'.

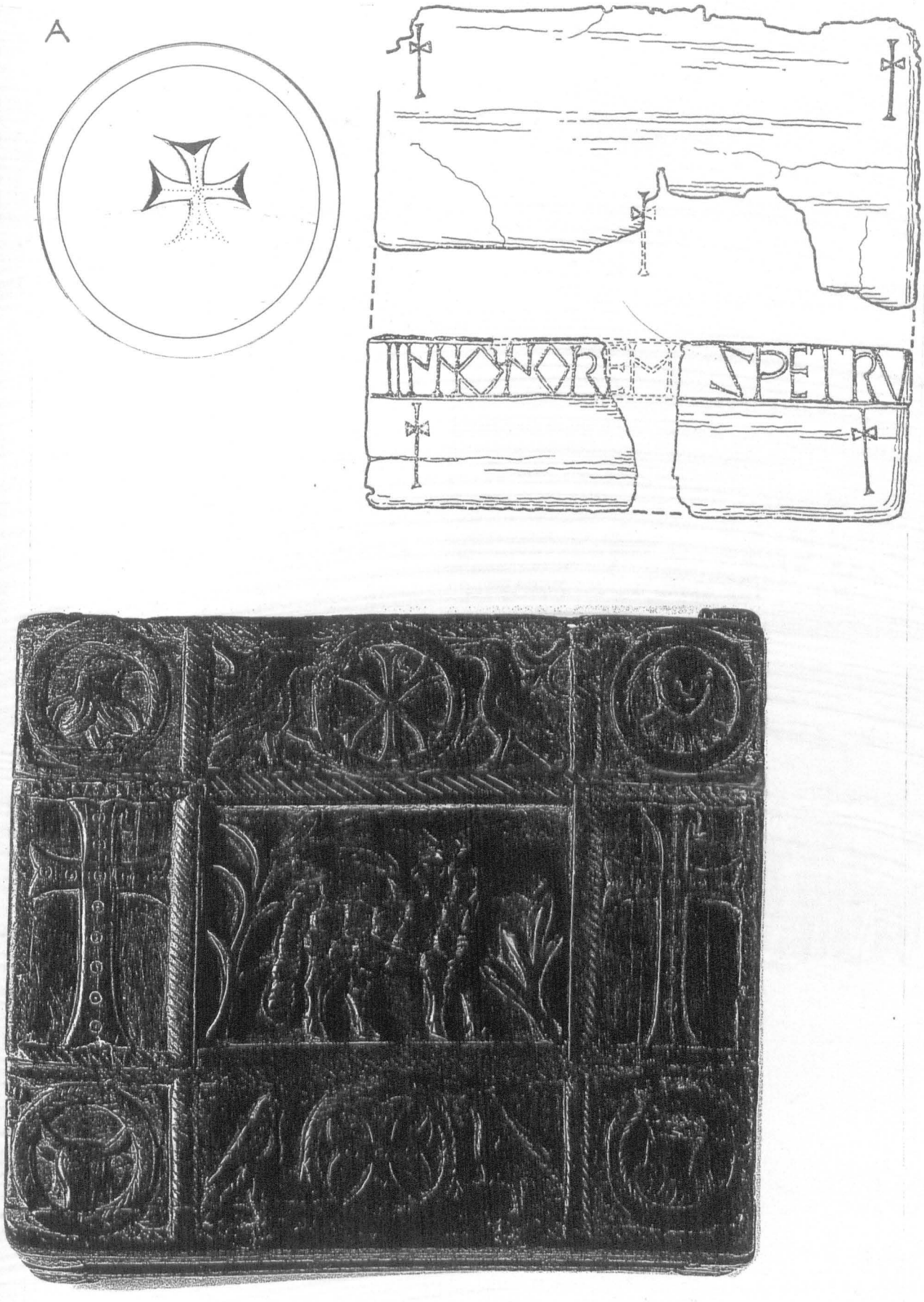
6: 15. Schematised layouts from Vatican MSS 66 and 59, after Aaberg, who was interested in the Coptic use of geometrical and curvilinear patterning, seen in A, and in B, the use of interlace borders with a taller 'capital' hand for headings, seen here below the cross-bar of decoration in the lower panel of writing.

B

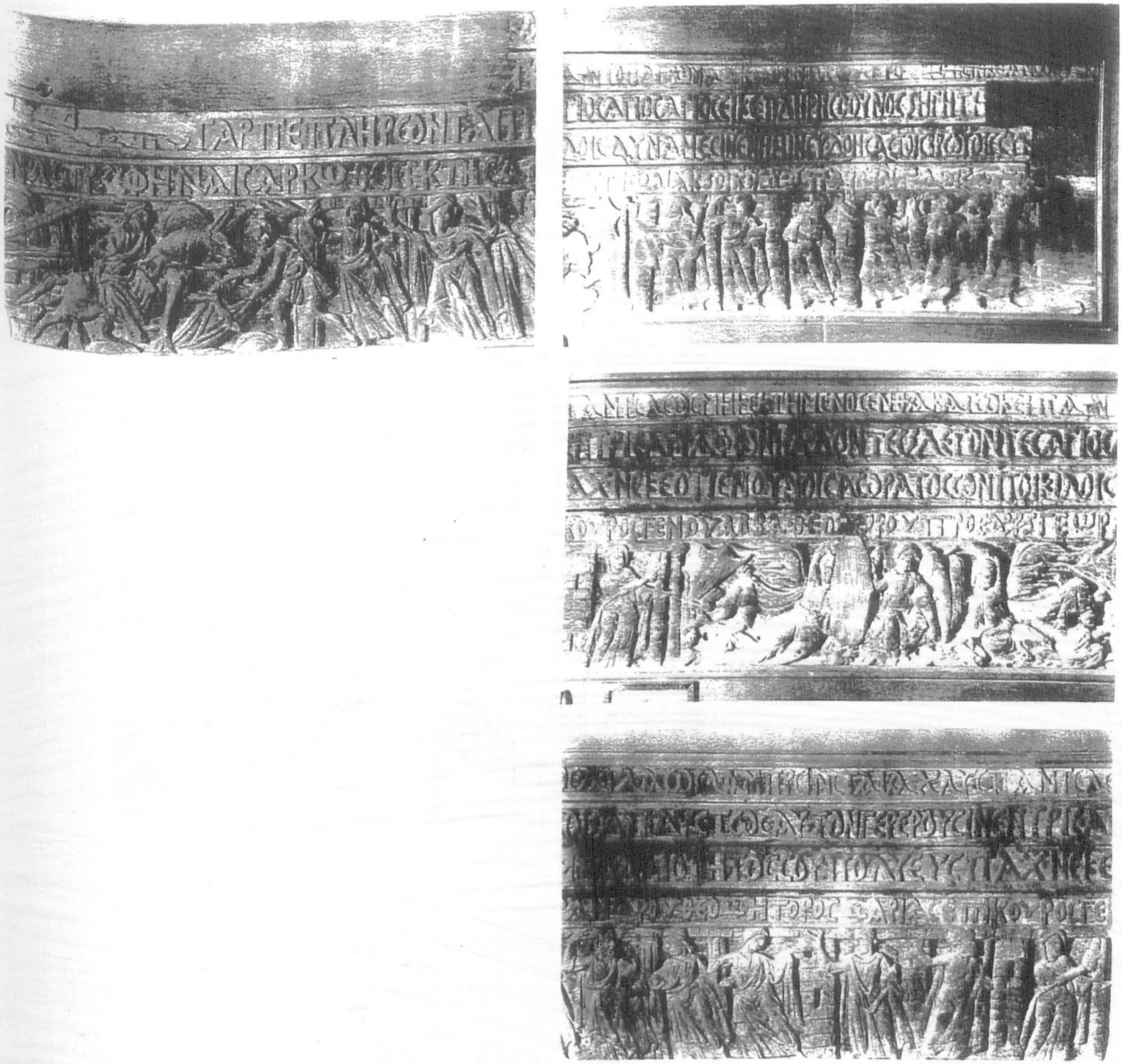
A

6: 16. Coptic memorials in stone using A, the *crux florida* , from Edfu, BM 1520, dated by Badawy between the fifth and eighth centuries and described as having 'rich foliate ornament', and B, ringed cross within an elaborate architectural frame from Luxor, Staatliche Museen 4482, *c.* AD 700, after Badawy, who describes the carving as 'flat and mechanical'.

6: 17. A and B, two mid-sixth-century wooden consoles from the Cairo Coptic Museum, after Badawy. A is of acacia wood and carved in high relief, showing Daniel between two lions, from the Staatliche Museen, no.3019, B shows a saint standing in an archway, from the Coptic Museum Cairo, no. 8786, and C, also sixth century, is a wooden carving of the Annunciation, Louvre. Inv. No. X 5243.

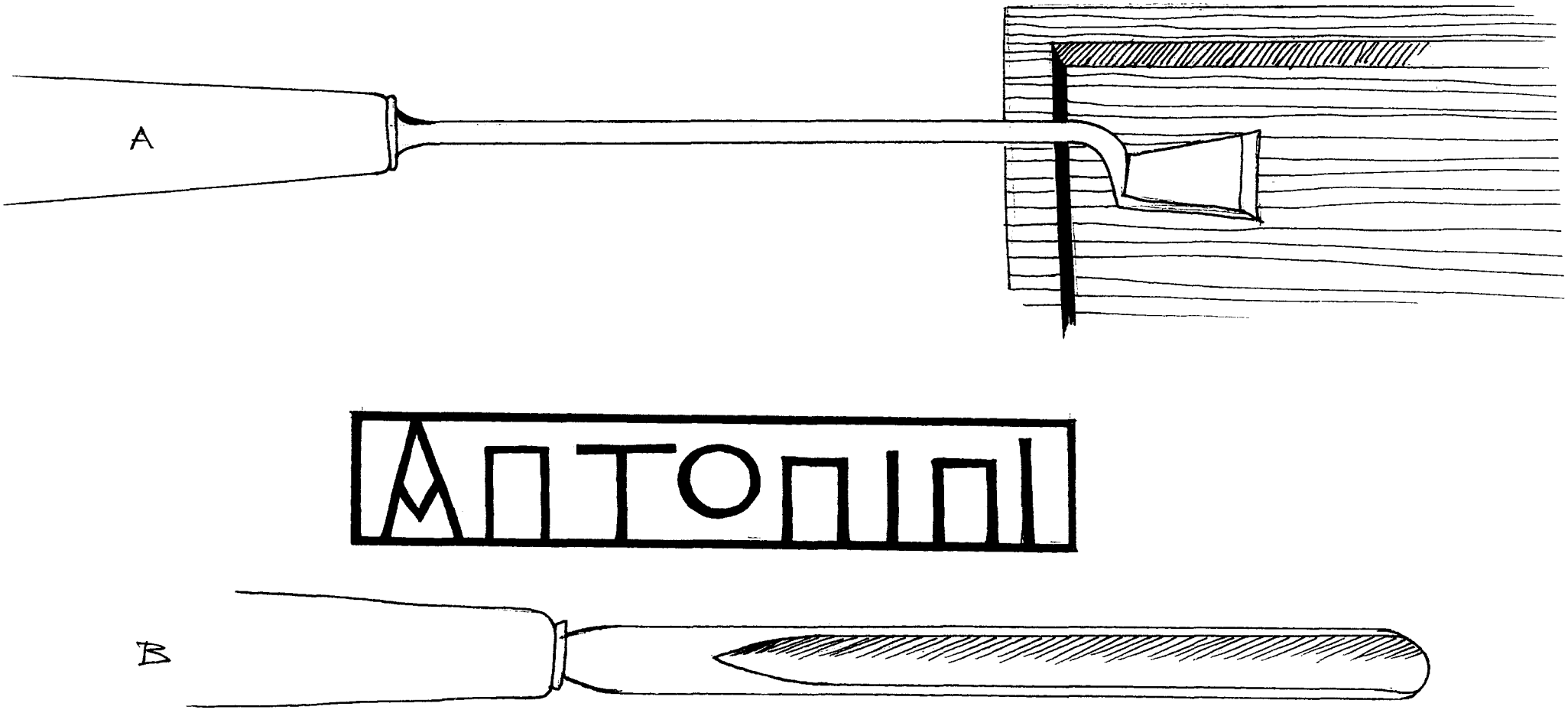


6: 18. Serifs cut in wood from :A, the knop of the Lemanaghan Bog staff, after ; B, St.Cuthbert's portable altar, after Radford; C. St. Radegonde's desk, relief cutting, after Cabrol.



6: 19. The fourth century El Mu'Allaqa frieze, Cairo Coptic Museum, after Badawy.

6: 20. Diagram. Enlarged detail of the ornamental metal plate of the Clonmore shrine from Co. Armagh, Belfast Museum. The hatched areas indicate where the background has been cut away with a V-section graver, to leave the curvilinear pattern in relief.



6: 21A. Diagrams showing a dog-leg chisel and the method of making a wax-tablet recess, after Hasluck, B, the incised inscription of the name *Antonin* in a wooden spatula handle, now in the Museo Archeologico, Florence, after Badawy.

6: 22 The tie-beam inscriptions from St. Catherine's in the Sinai, after Weizmann.

1. Vertical board attached to ceiling beam no. 8, detail

6: 23. The Landevennec coffin, carved from a single block of wood, *c.* 700.

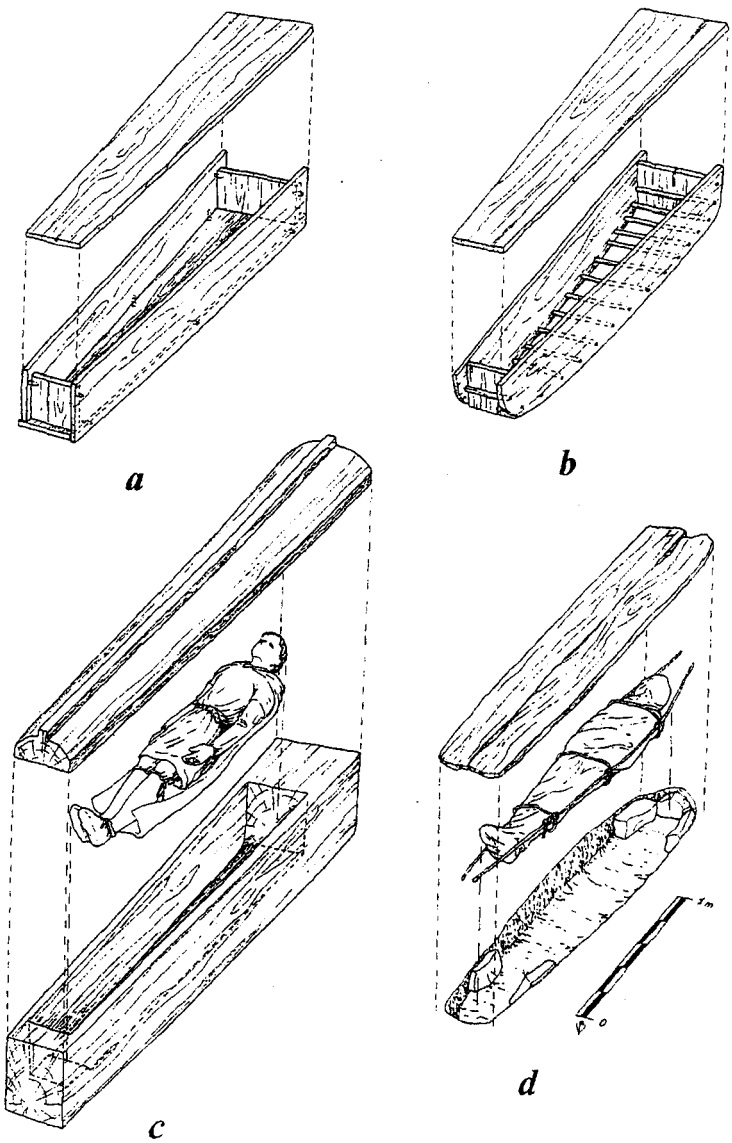
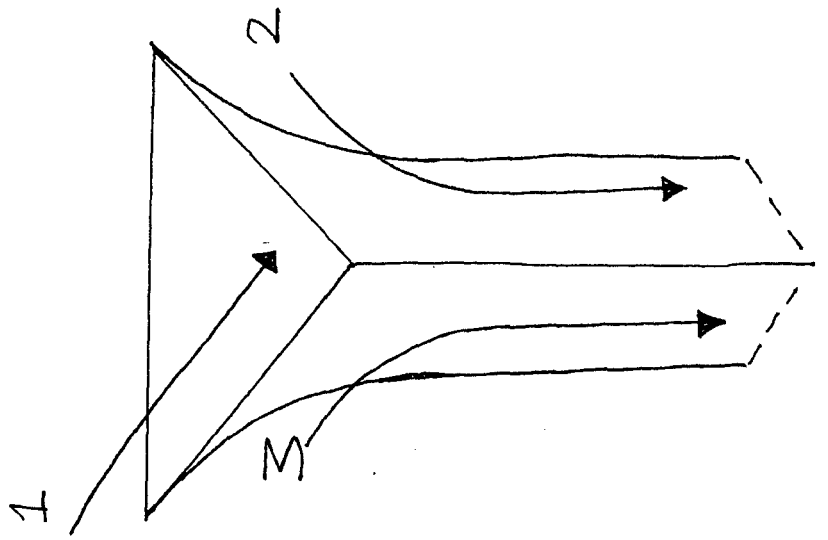
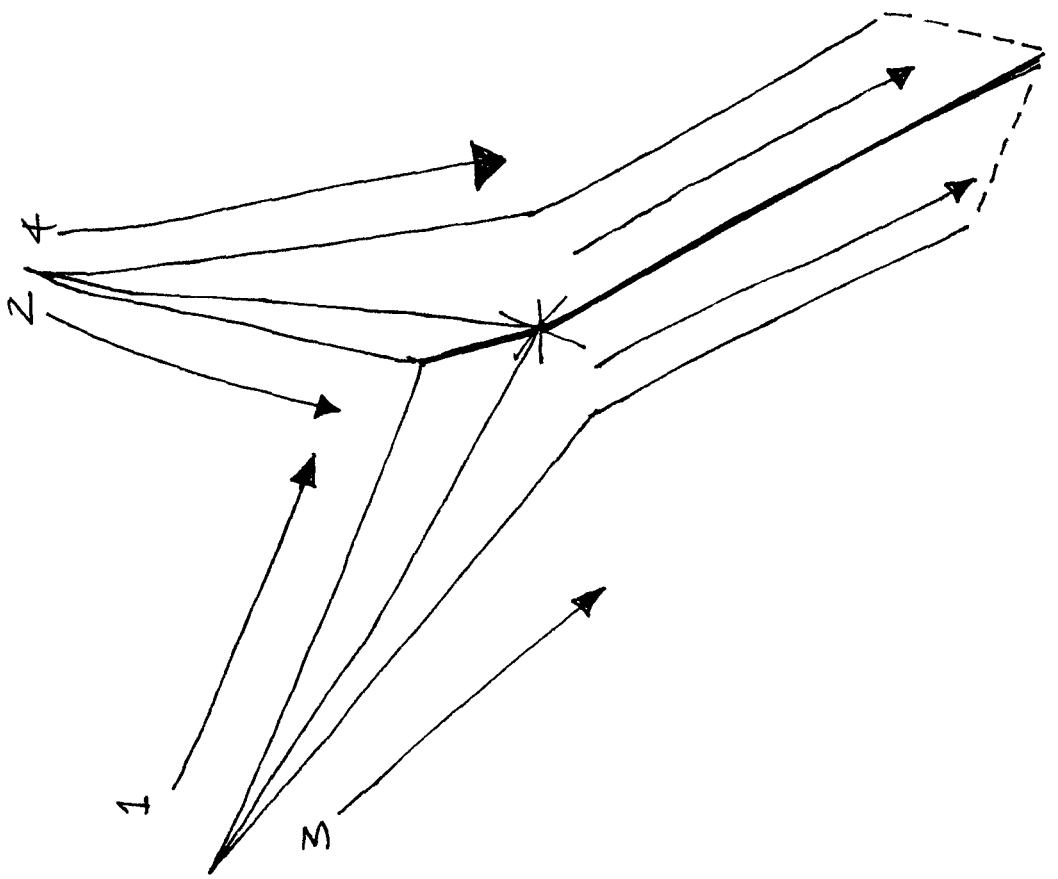


Fig. 2 : Types de sépultures aménagées en bois : a- cercueil chevillé ; b- cercueil à claire-voie ; c- sarcophage monoxyle ; d- claie et couvercle de bois.

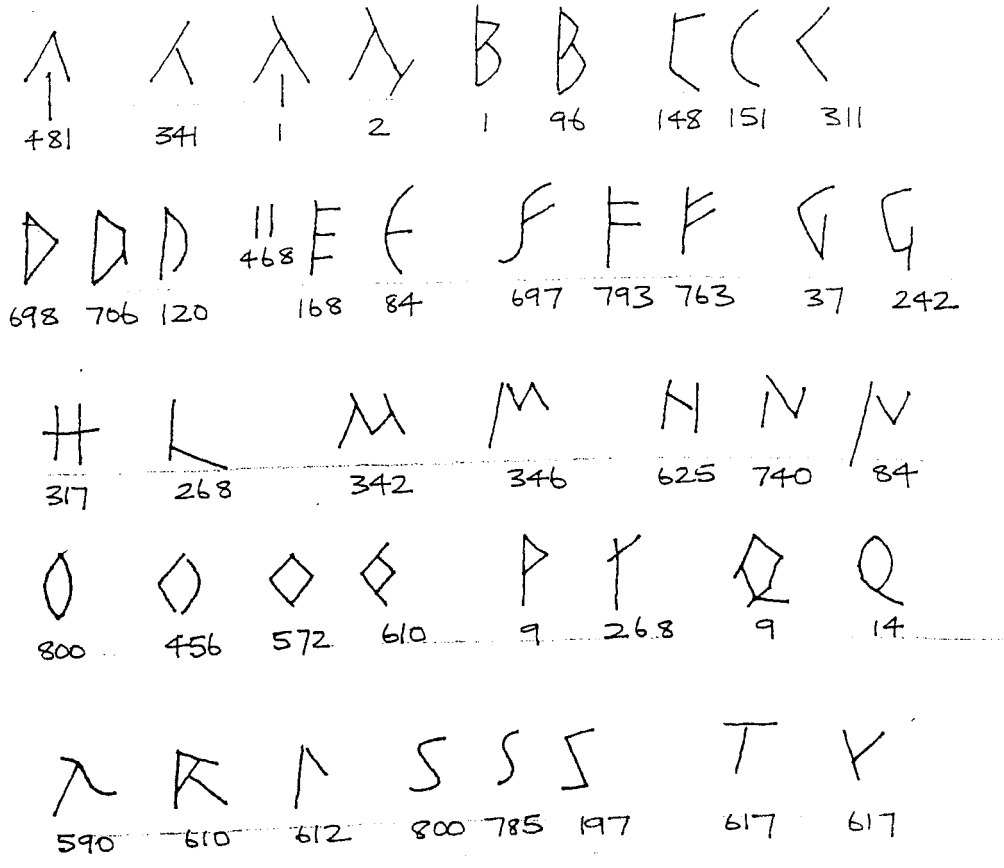
6: 24. Diagram showing the cuts of a fish-tail and a Roman-style serif in wood.

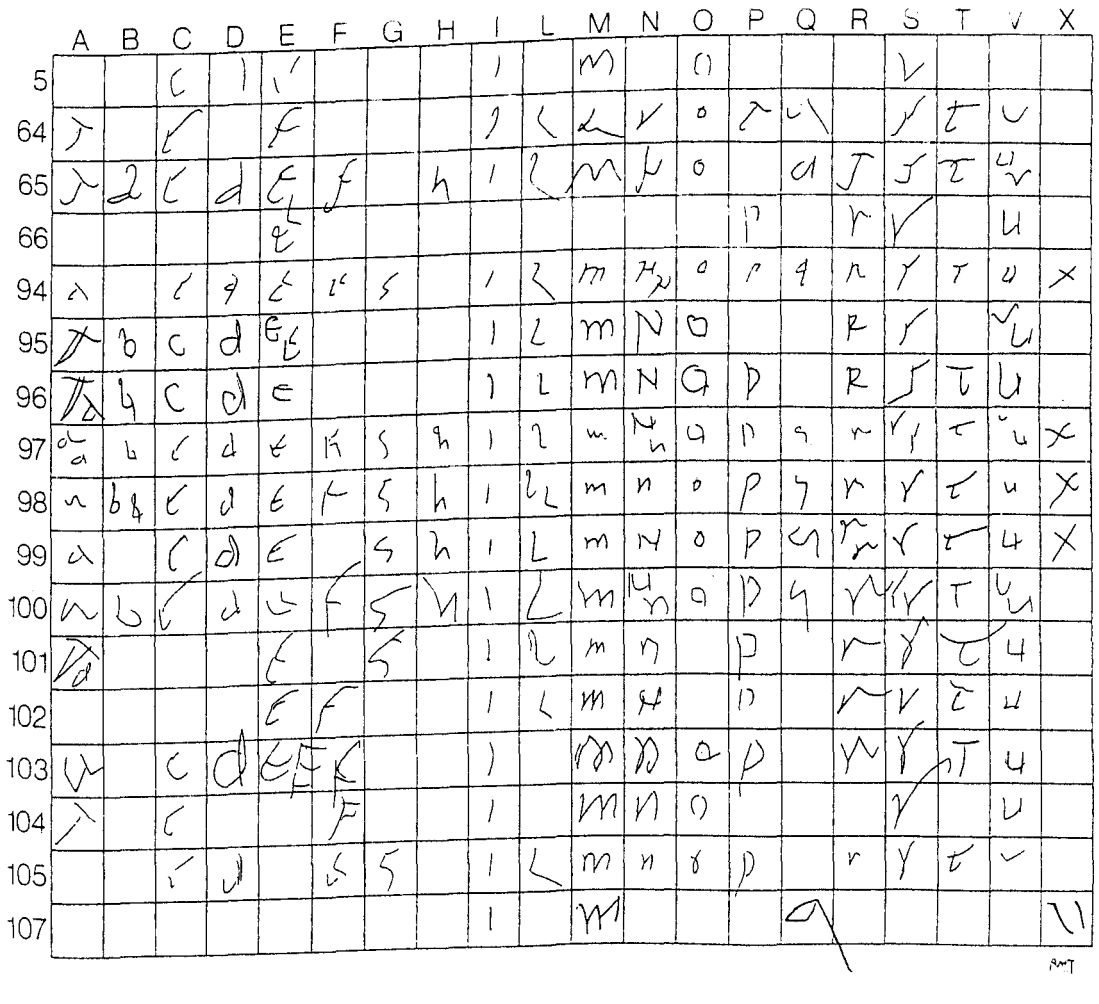




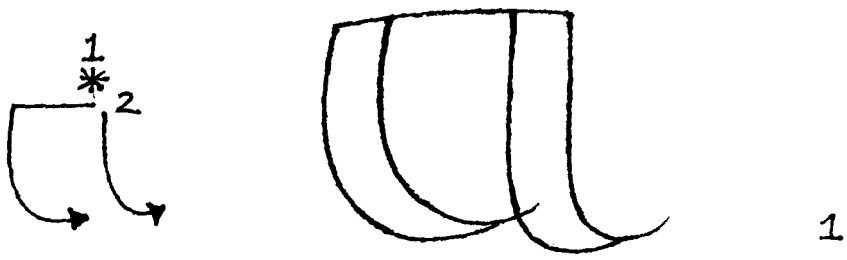
6: 25. A, graffiti letters on coarse pottery before firing; B, graffiti letters on coarse pottery after firing.

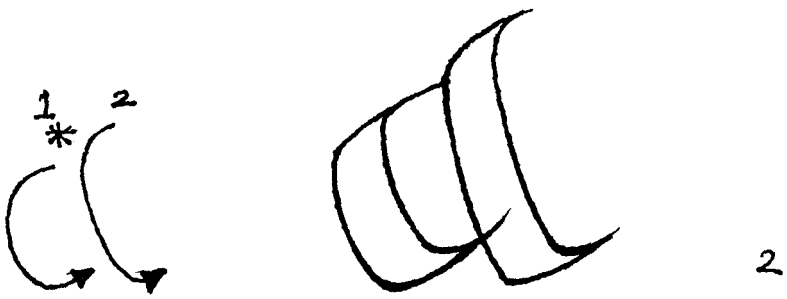
6: 26A, graffiti on *terra sigillata*, reference numbers from RIB 2501; B, Tomlin's alphabet drawn from late tablets of the *Tabellae Sulis* sequence.

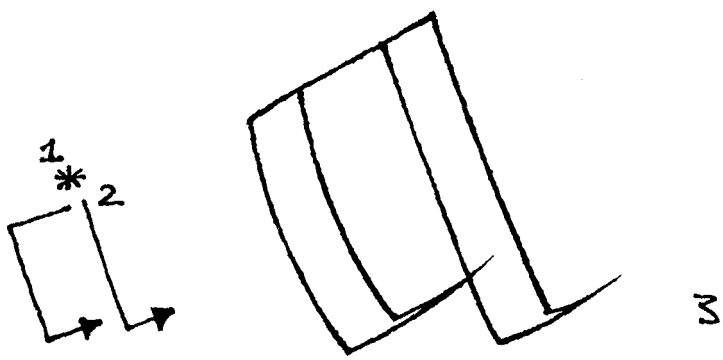




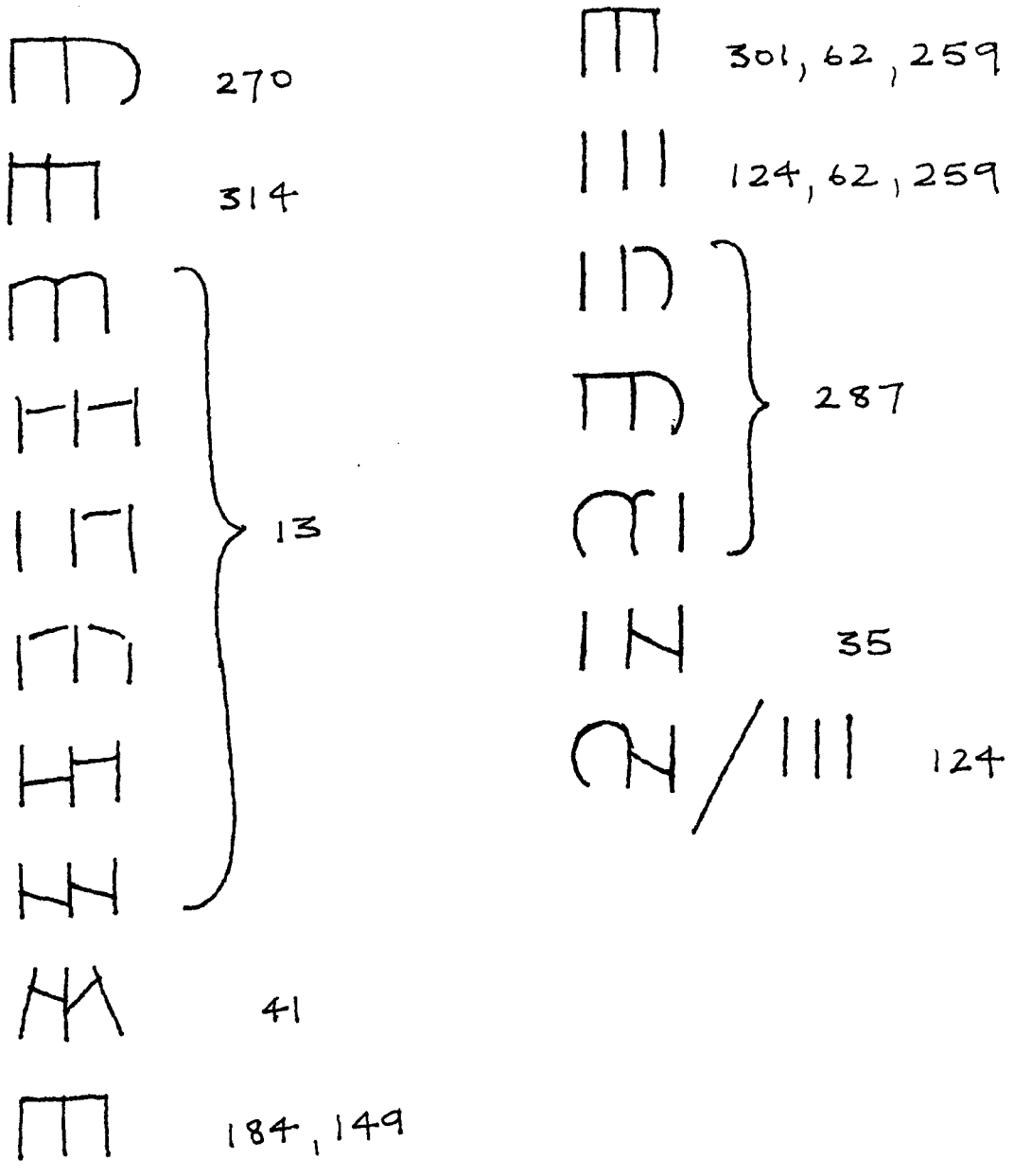
7: 1. The flat-topped 'a' of: 1. the *Cathach*; 2. the *Antiphonary of Bangor*; 3, the *Stowe Missal*.







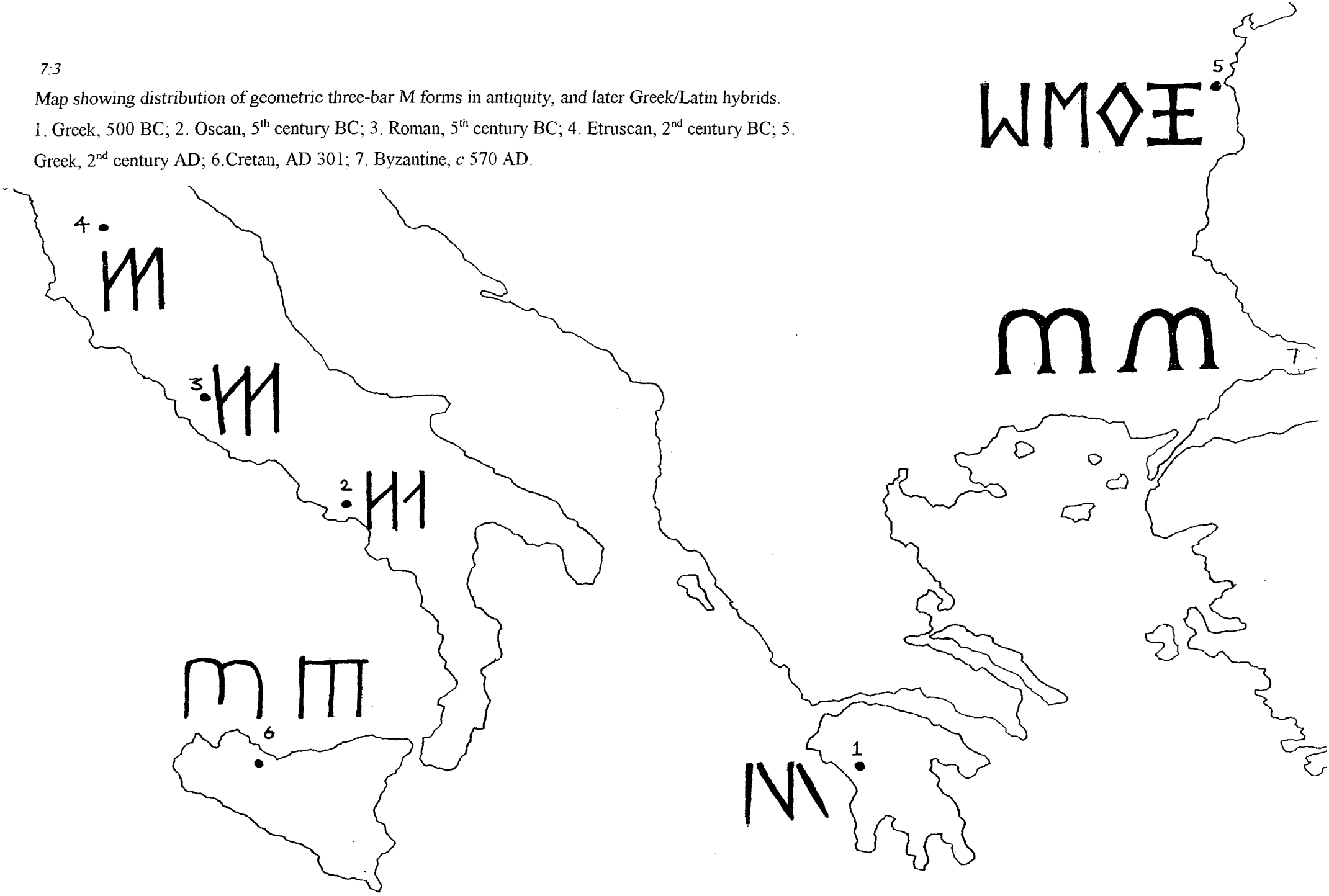
7: 2. Schematised diagram of ECMW Group I and II **M** forms. Group I on the left, and Group II, on the right, with their ECMW numbers.



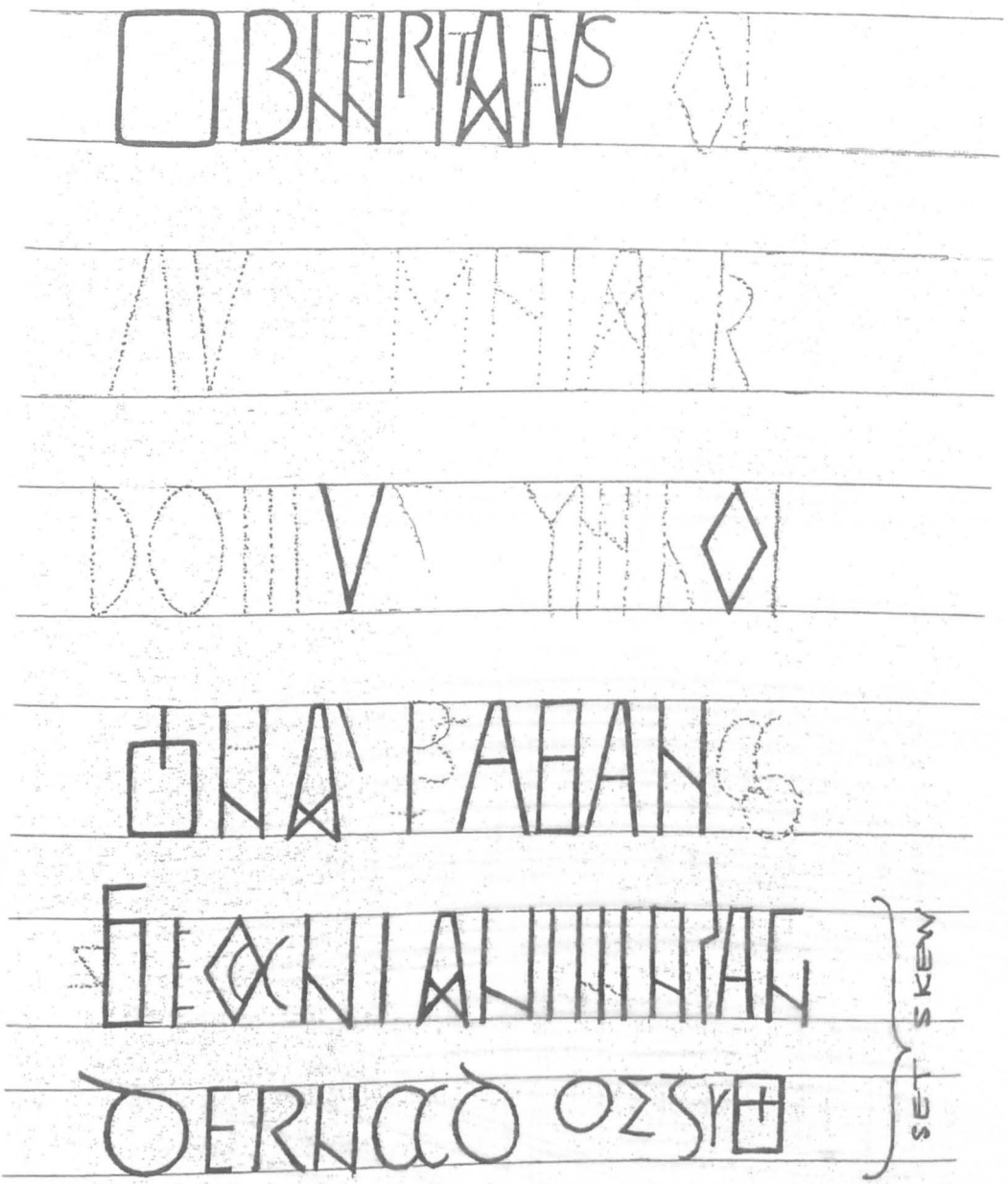
7:3

Map showing distribution of geometric three-bar M forms in antiquity, and later Greek/Latin hybrids.

1. Greek, 500 BC; 2. Oscan, 5th century BC; 3. Roman, 5th century BC; 4. Etruscan, 2nd century BC; 5. Greek, 2nd century AD; 6.Cretan, AD 301; 7. Byzantine, *c* 570 AD.



The Toureen Peacaun East Cross inscription. A drawing made on the surface of a rubbing from the NMI concrete cast of 1944.

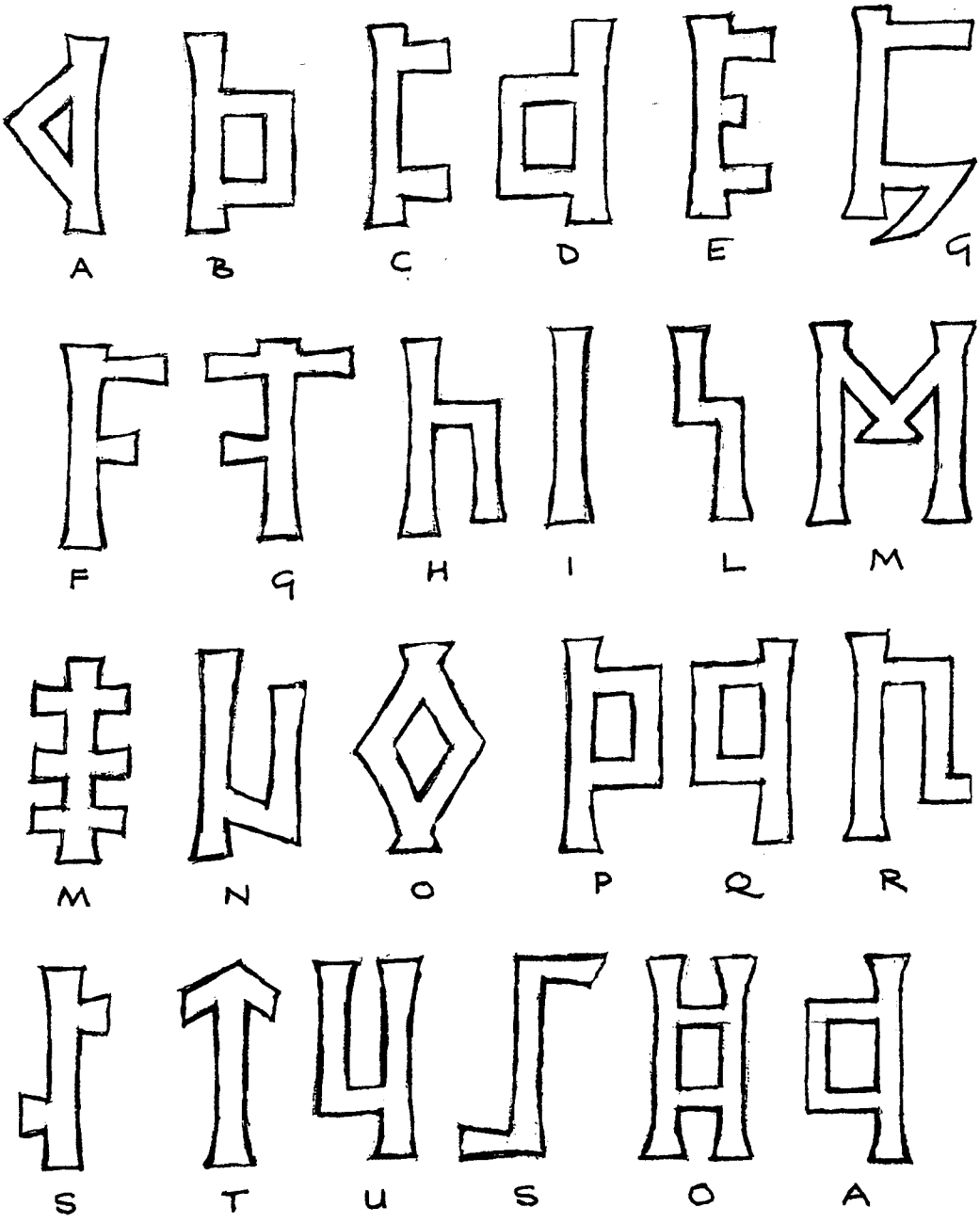


Suggested reading and translation of the Toureen Peacaun East Cross inscription by line:

1. OB MERITA EIUS [ ]
2. undecipherable
3. [DOM]US [?possible placename]
4. DONA[VIT PER S] ABAN [ ]
5. BECANI ANIMA LASN
6. DERNAD † [then reduction in size, possible late addition] OSGYD

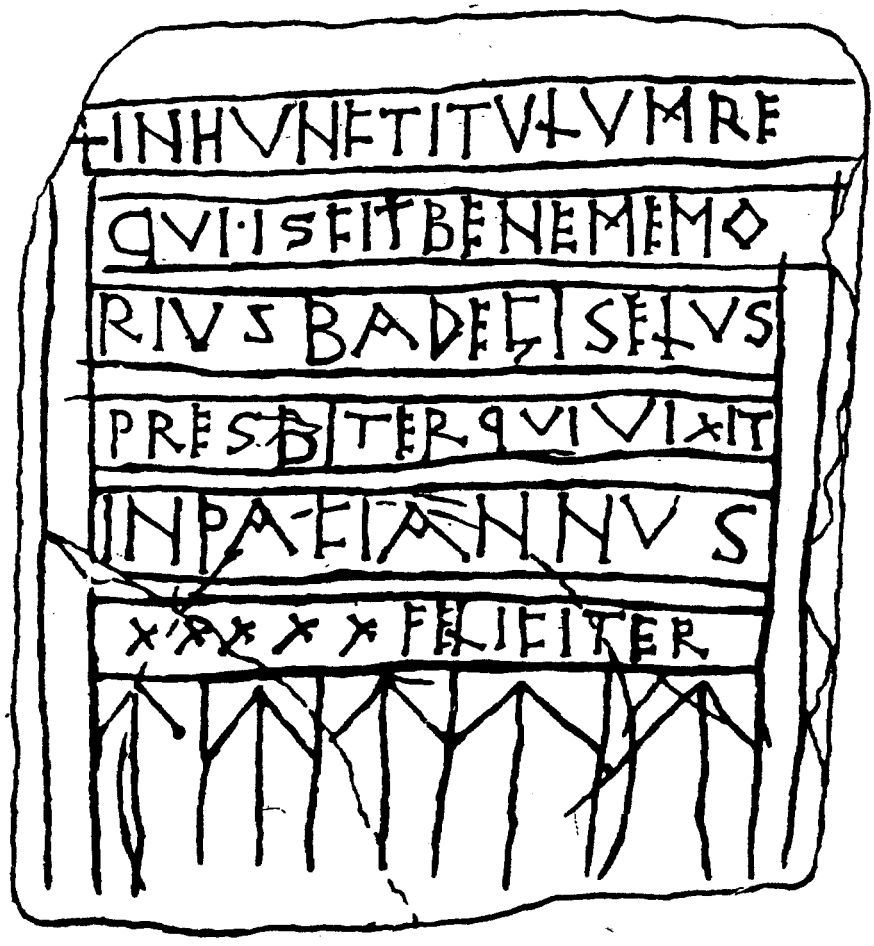
On account if his merits ...the house of [placename] was given by Aban. Pray for the soul of Becan by whom it was made. Osgyd.

7: 5. Schematised drawing, the Type C geometric alphabet. In its purest and simplest form this is to be seen in the St Gall Gospels, but many echoes of the alphabet appear scattered in various Insular MSS.



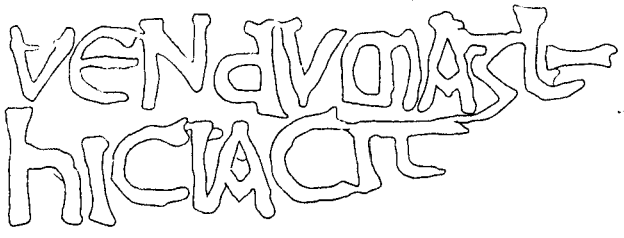
7: 6. The inscription to Badegiselus at St Alban in Mainz. After Boppert, FIM, Plate 40.

Here we can see some characteristic letters of the Type C alphabet, notice the **C**, **M**, **N**, **E**, **G**.



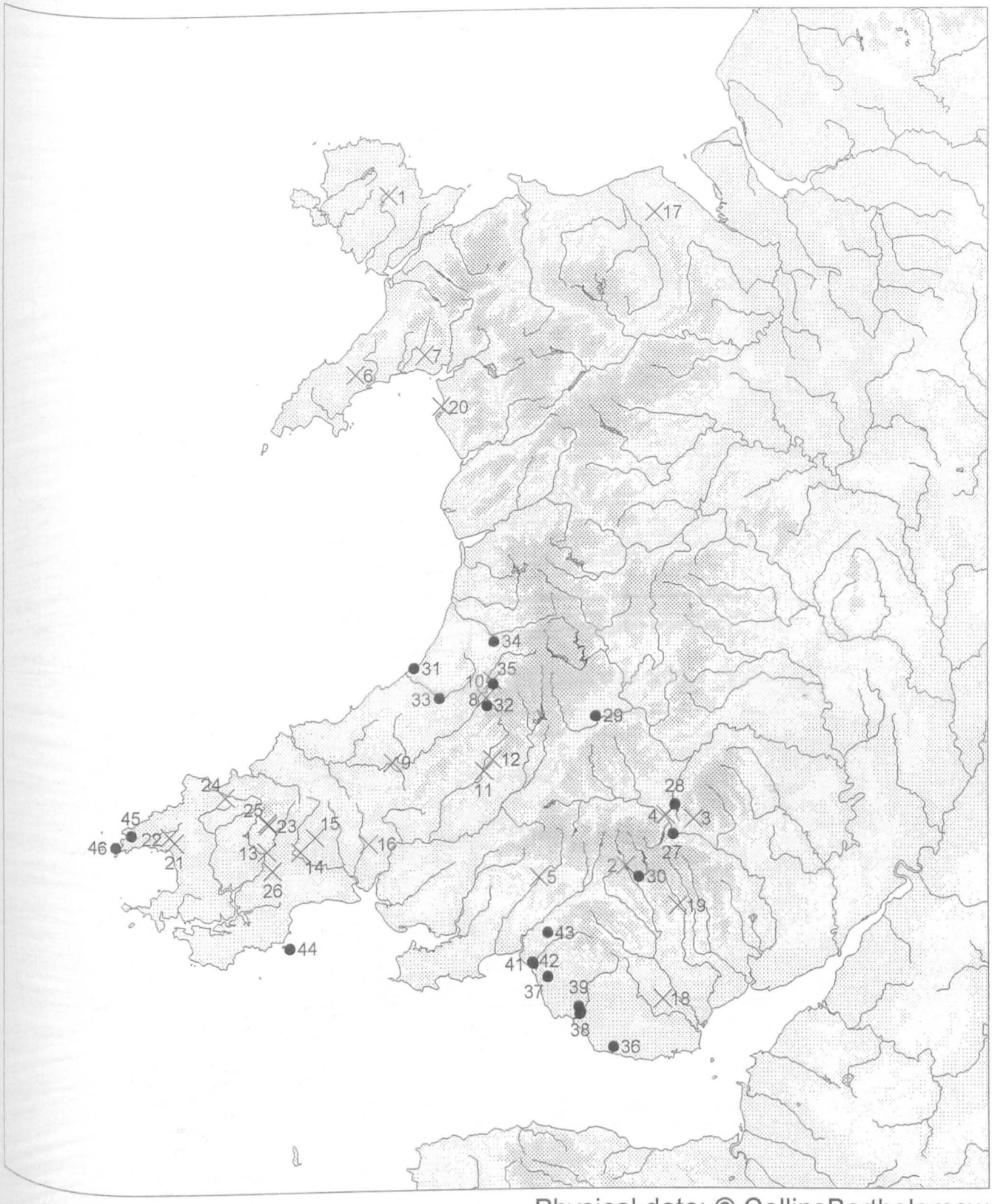
7: 7. The vertical *Domnicus* inscription, Llangwyryfon (Cards.) ECMW no.122.

7: 8. The vertical *Catacus* inscription, Llanfihangel Cwm Du (Brecs.) ECMW no. 54.



7: 9. The vertical *Vendumaglus* inscription, Llanilterne (Glam.) ECMW no. 214.

7: 10. Map showing distribution of stones of the period of ECMW Group I, with intrusive non-capital and angular letters, and Group II, with geometric letters. Group I =X, Group II = O. By Fiona Edmunds. The map location numbers are given



Physical data: © CollinsBartholomew

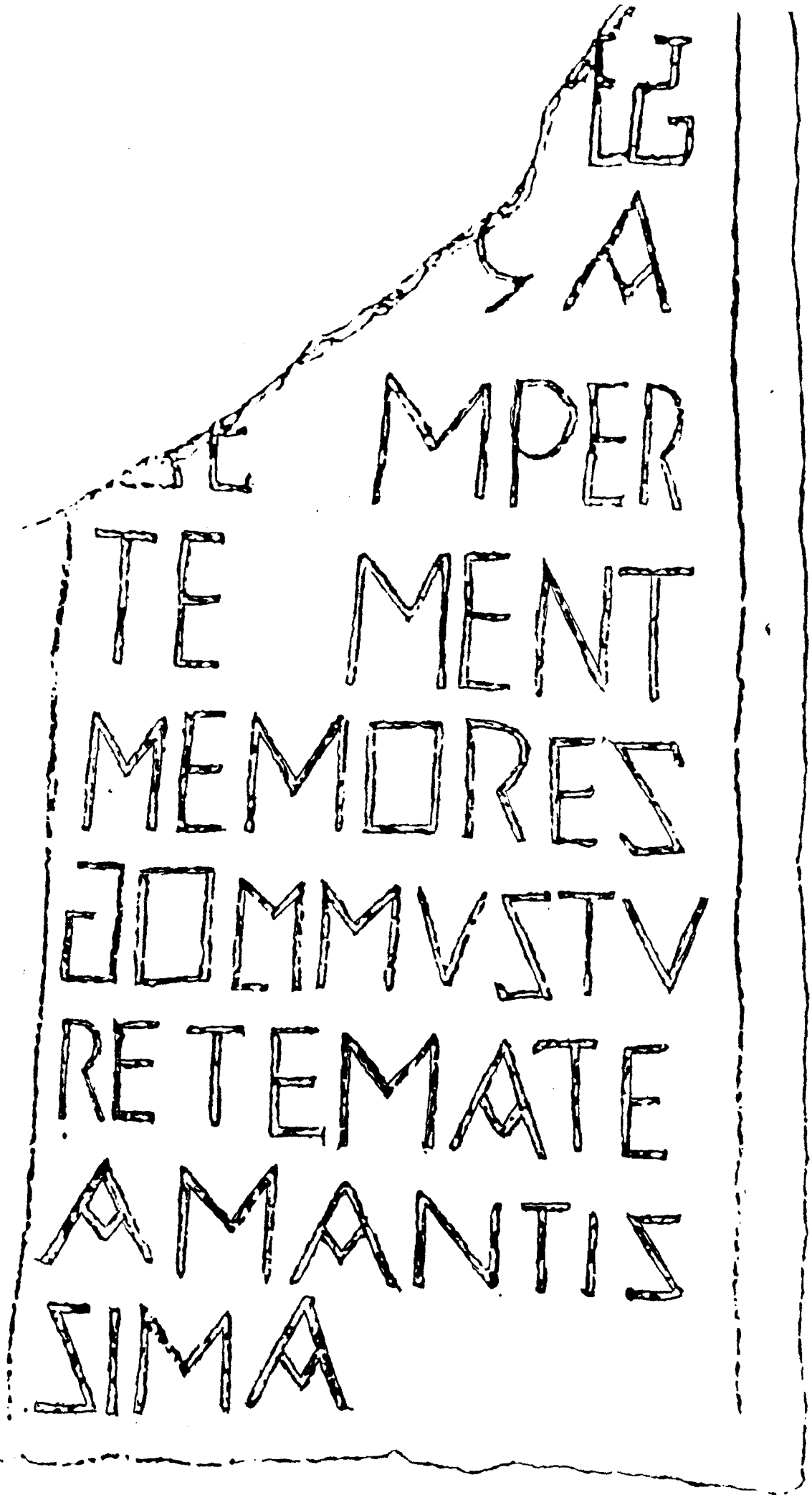
Inscriptions with angular letters: Wales

× Class 1

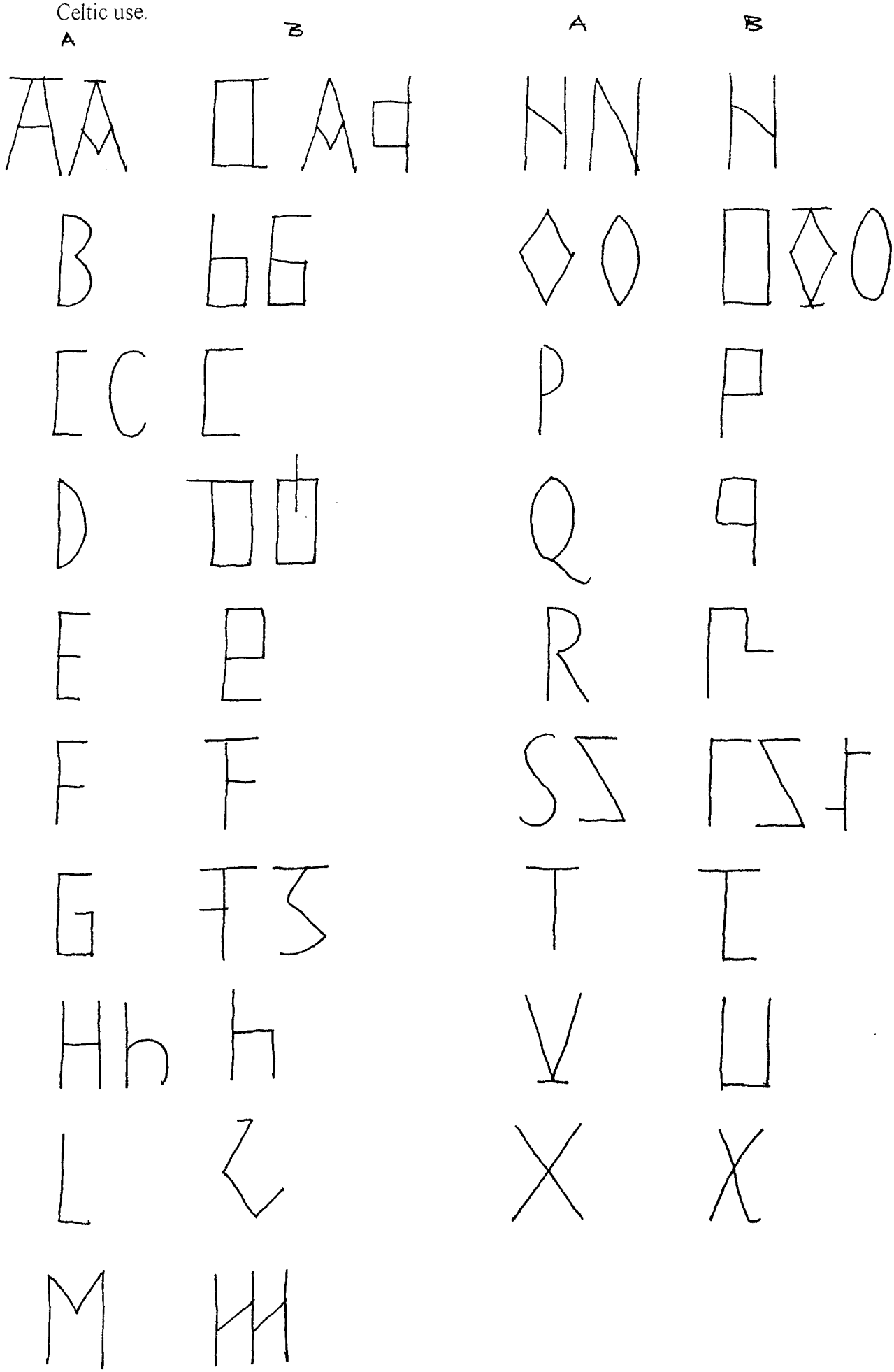
• Class 2/3

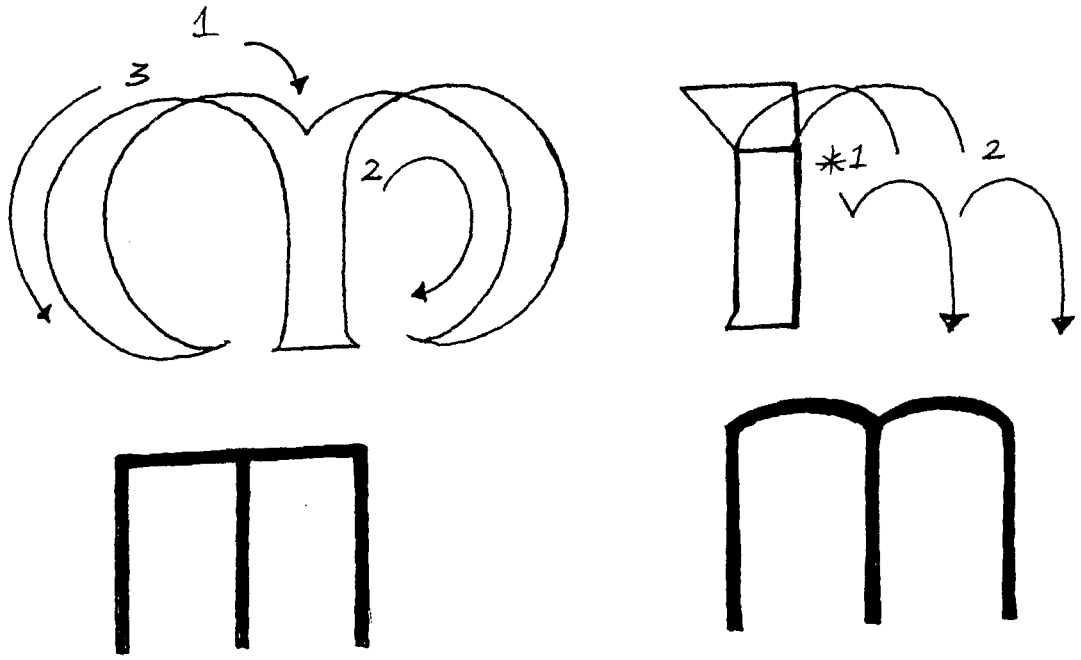
7: 11. General map, including Brittany, showing distribution of significant Insular Group I = X, and II = ● angular inscriptions.

7. 12. The Abbess Oedilburga inscription from Hackness (A-SN-RI no.42) after Huebner.

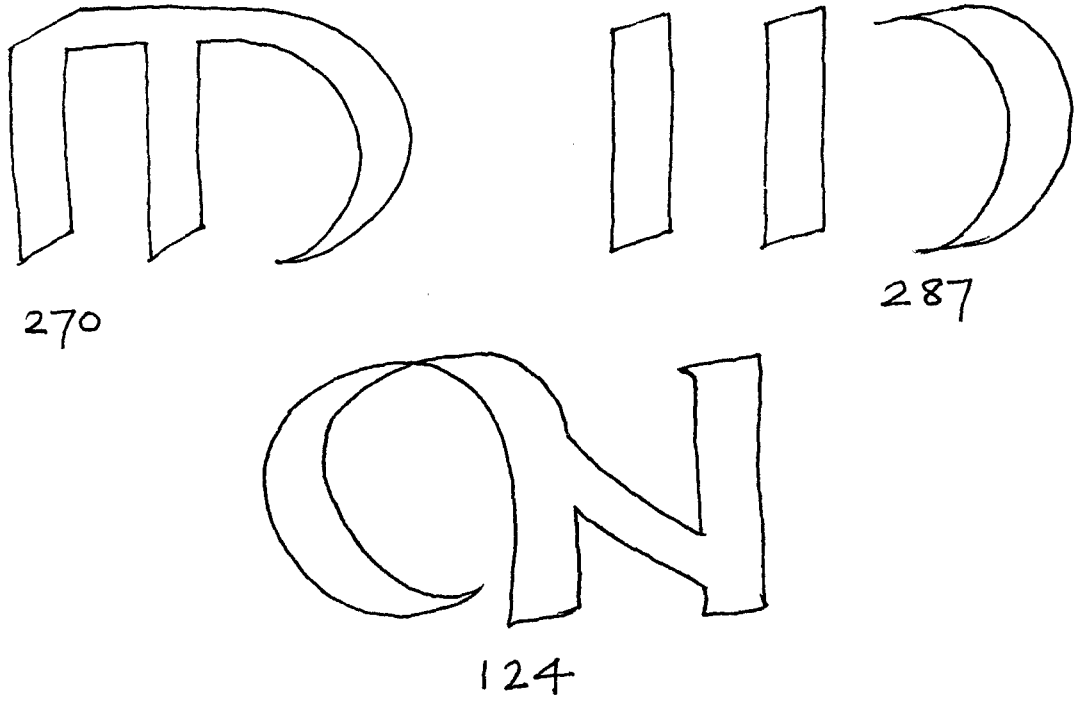


7: 13. Schematised alphabets of display letters fashionable in A, Anglo-Saxon use, and B, in Celtic use.

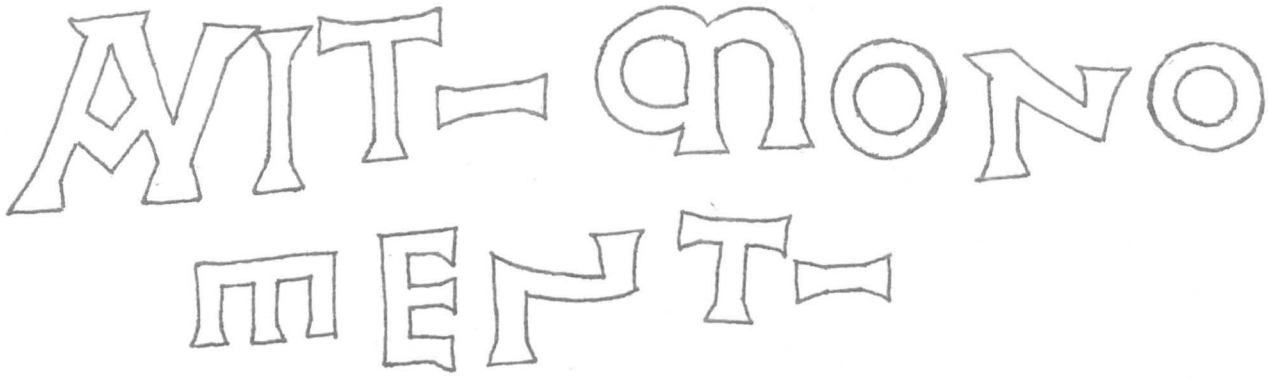




7: 14. Diagram showing the springs of uncial **M**, and epigraphic adaptations.



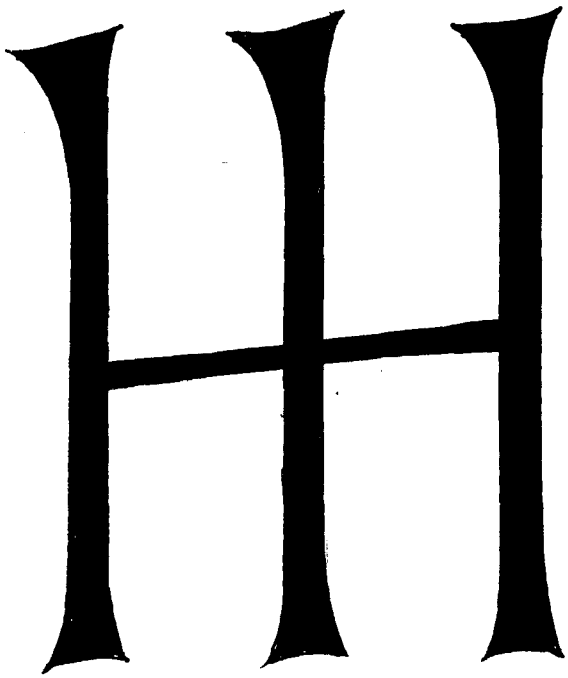
7:15. Diagram showing incised strokes influenced by pen-forms in some inscribed **M**s of ECMW Groups I and II; these three penned diagrams show versions of letters already illustrated in 7: 2.

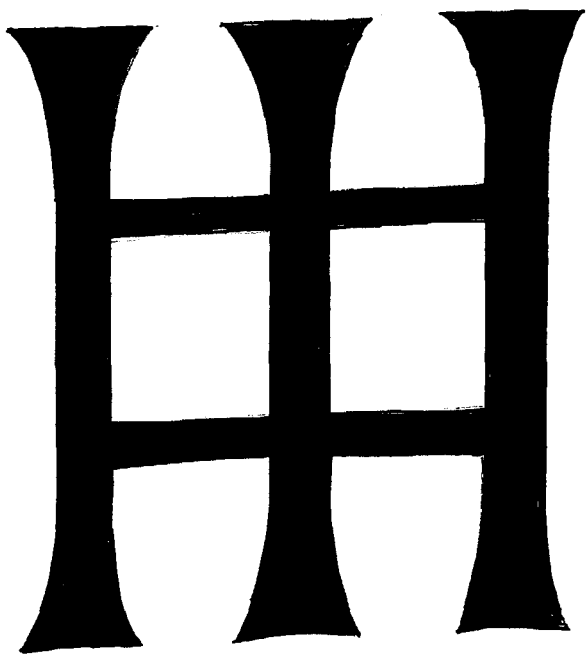


7: 16. The *Aviti Monomenti* inscription from Santon, Isle of Man. This is a Group I inscription, carefully designed, but earlier in style than the *Catamanus* inscription, this may be among the first Insular inscriptions where a letterer has deliberately contrasted a pen-formed **M** with an angular epigraphic one.

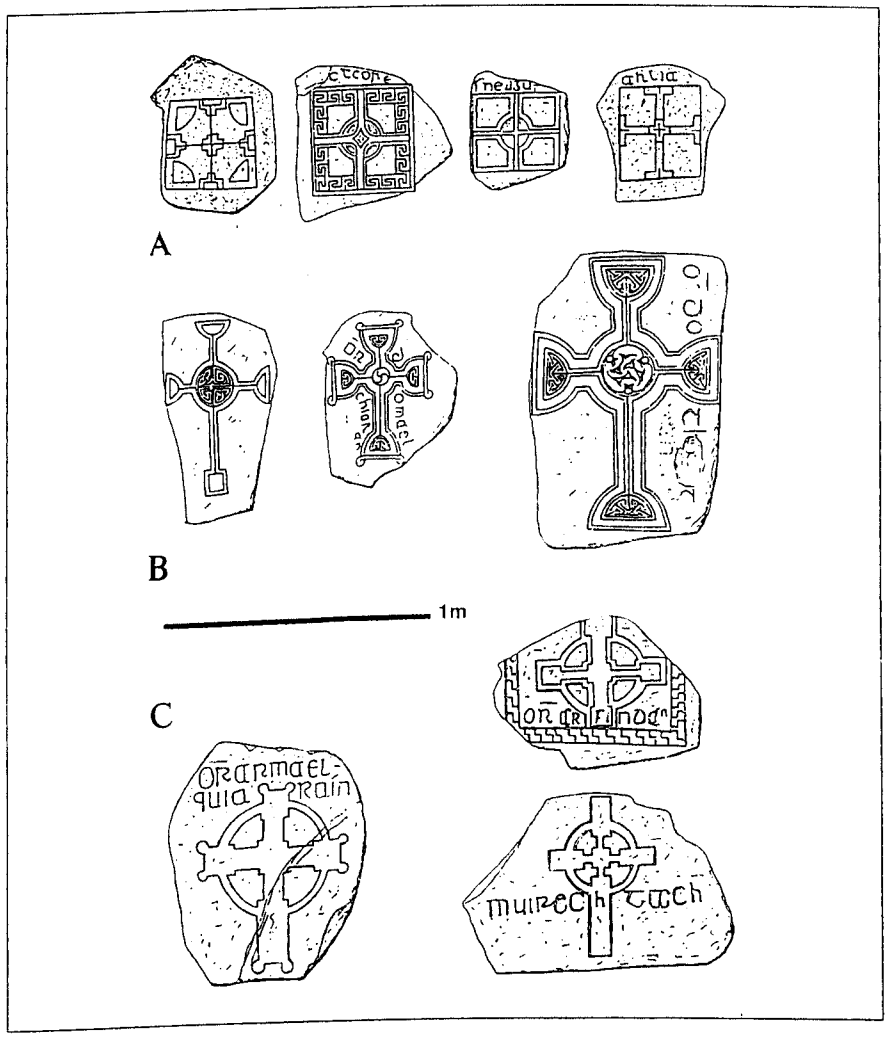
7: 17. The *Herebericht* inscription from Monkwearmouth, (A-S N-RI, no. 922, II).

7: 18A. Geometric letters from the Lindisfarne Gospels, showing the asymmetrical top serifs manipulated in a calligraphic pen-formed manner, and, B, geometric letters from the Lichfield Gospels showing the top serifs starkly angular and symmetrical.





8: 1.A, R. A. S. Macalister's ten-fold typological division of the slabs at Clonmacnoise was simplified by R. Ó Floinn into the three major Types which he classified as A, small panelled cross slabs [Macalister's Type 5], B, expansional crosses [Macalister's Type 8] and C, the ringed or 'Celtic' cross [Macalister's Type 7]; ILLUS. 8: 1B, shows Macalisters division of the letterforms of the slabs into four alphabets. His handwritten diagram does not make clear the improvement in lettering skills with the transition from alphabet i, the letters contemporary with the small panelled crosses, and the more calligraphic alphabets of ii-iv, employed in the later expansional and ringed crosses.



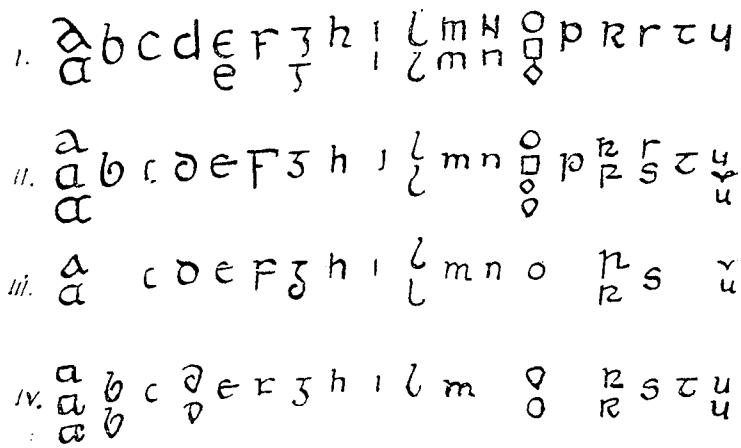
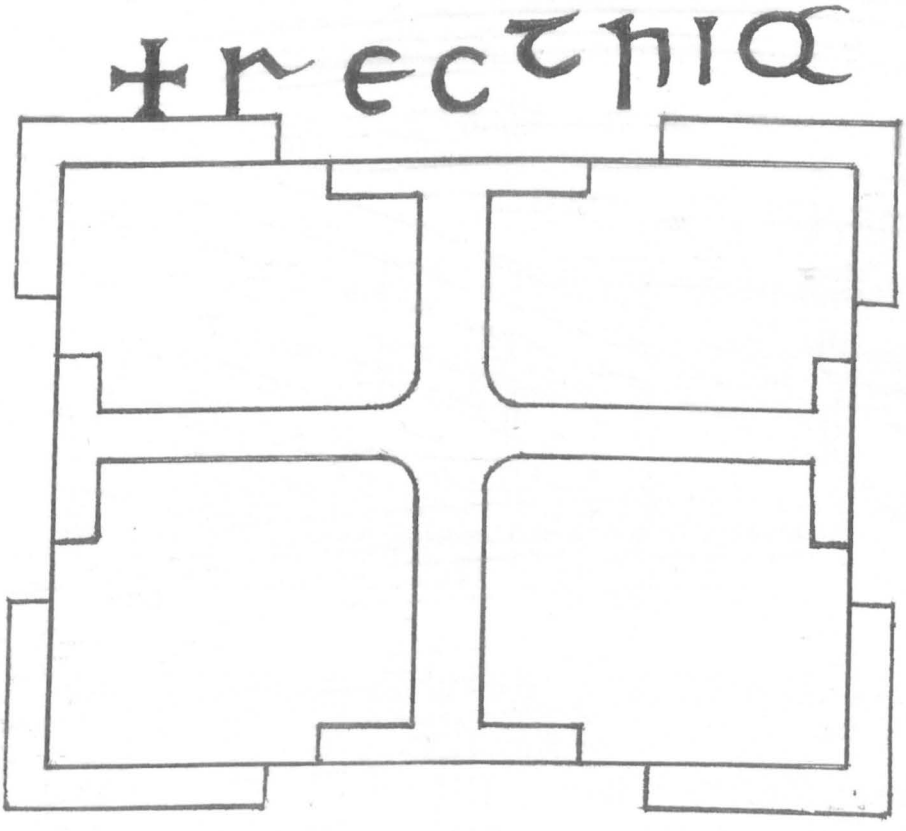


Fig. 14.—The Four Alphabets.

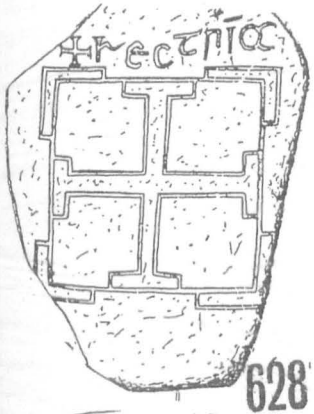
8: 2. A Clonmacnoise small panelled cross slab, CIIC no. 628, compared to a bi-alphabetic small panelled cross slab from Hartlepool, C A-SSS Hartlepool no.1.



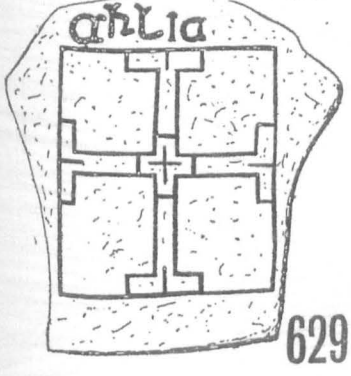
8: 3: 1-14, a series of small panelled cross slabs from Clonmacnoise, (after Macalister 1949).

626

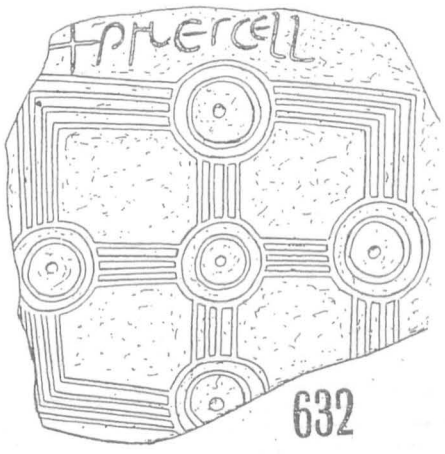
627



628



629



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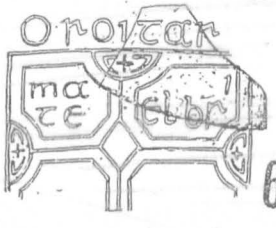

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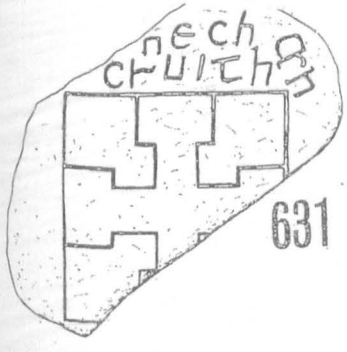

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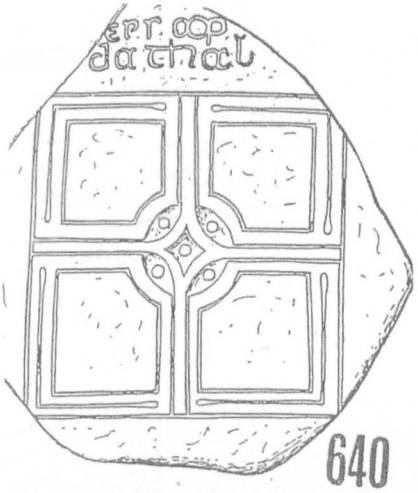

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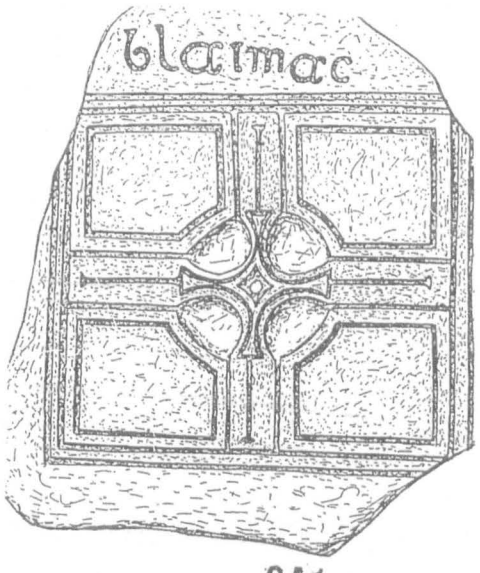

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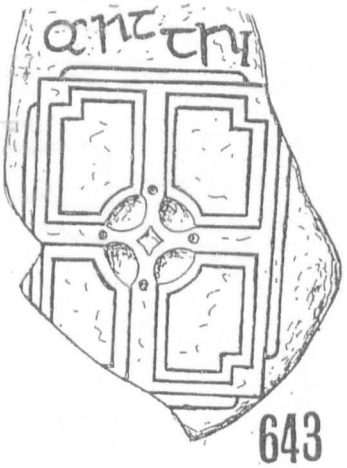

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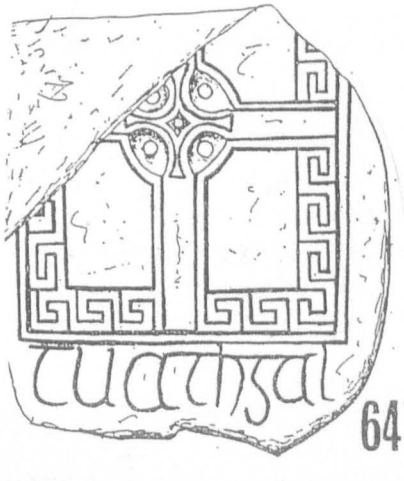
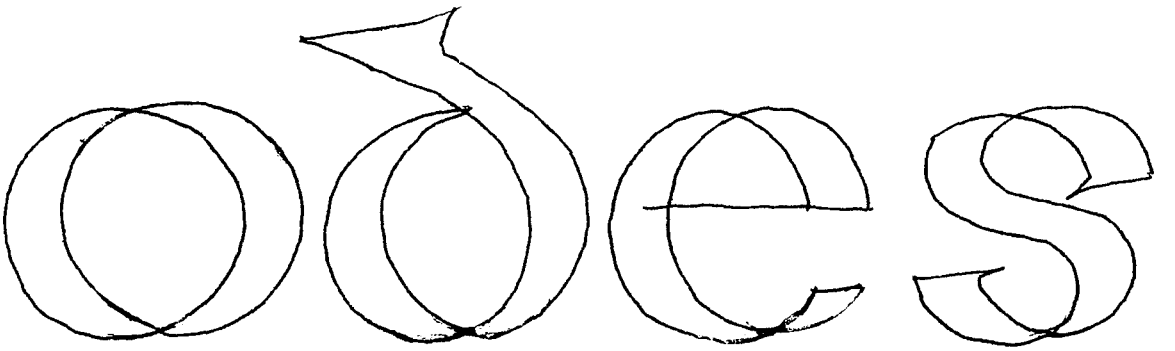
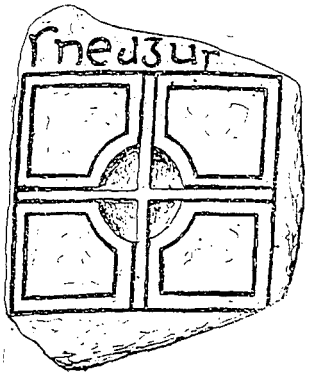


647

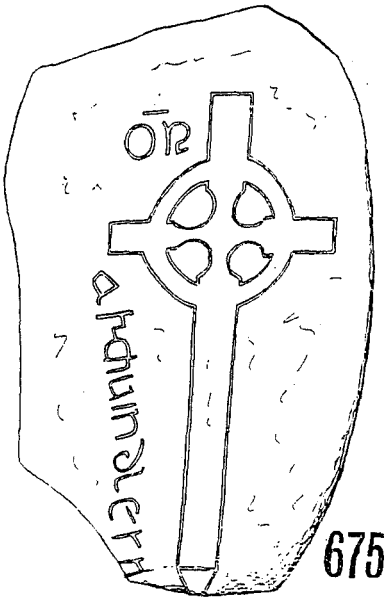
8: 4. Calligraphic diagram to demonstrate the spacing of the word 'Odes' with A, the round bows of half-uncial, and B, the flatter arcs of minuscule.



8: 5A and B. Examples from Clonmacnoise of the transition fron crude, roughly two-line inscriptions in stone in mixed-alphabet style, to those incorporating angularised minuscule letters that we find later, in a more exagerratedly angular form, in the geometric display alphabet. See the lining up of the minuscule **d** with the **g** in 8: 5A, CIIC 642, and the more fluent **r**, **h** and **s** of 8: 5B, CIIC no.675, accompanying a ringed cross design which may plausibly be associated with an Abbot of Clonmacnoise who died AD 720+.

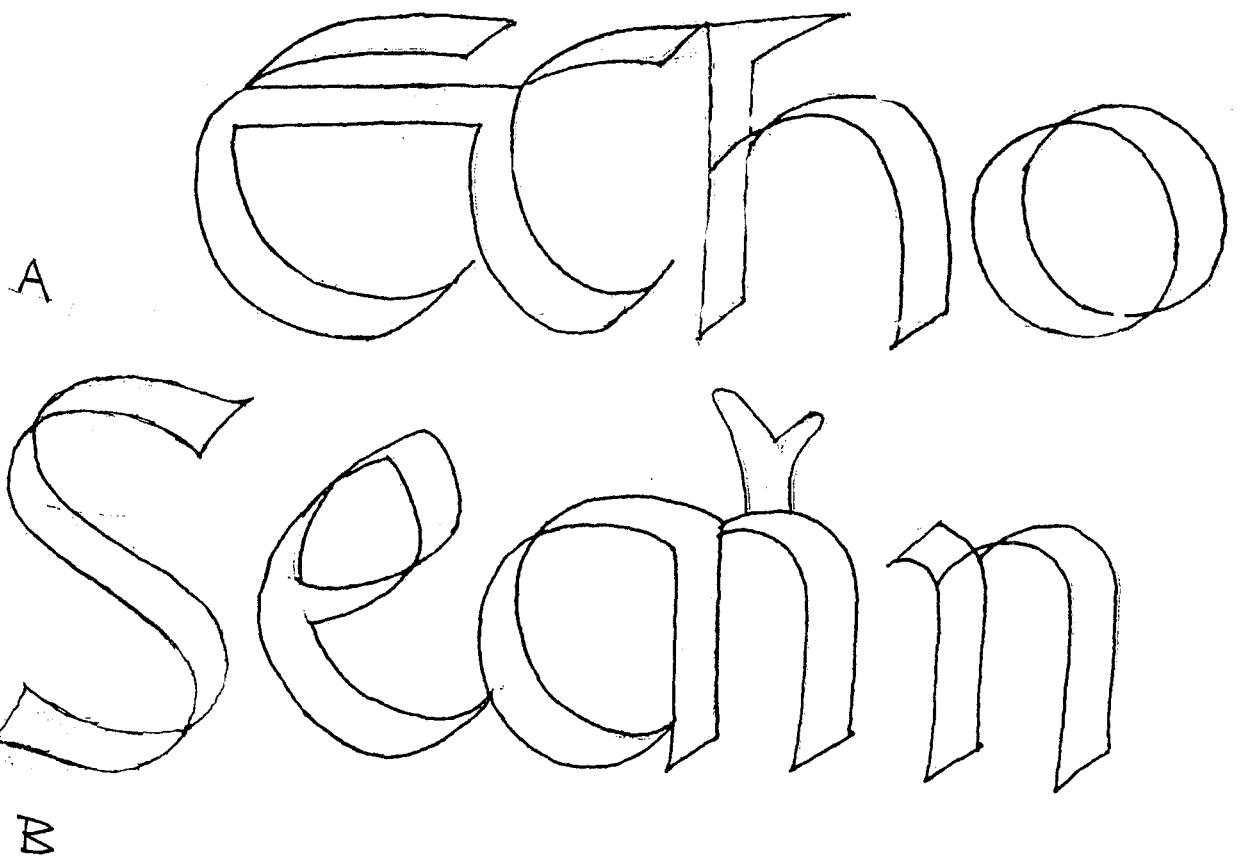


642



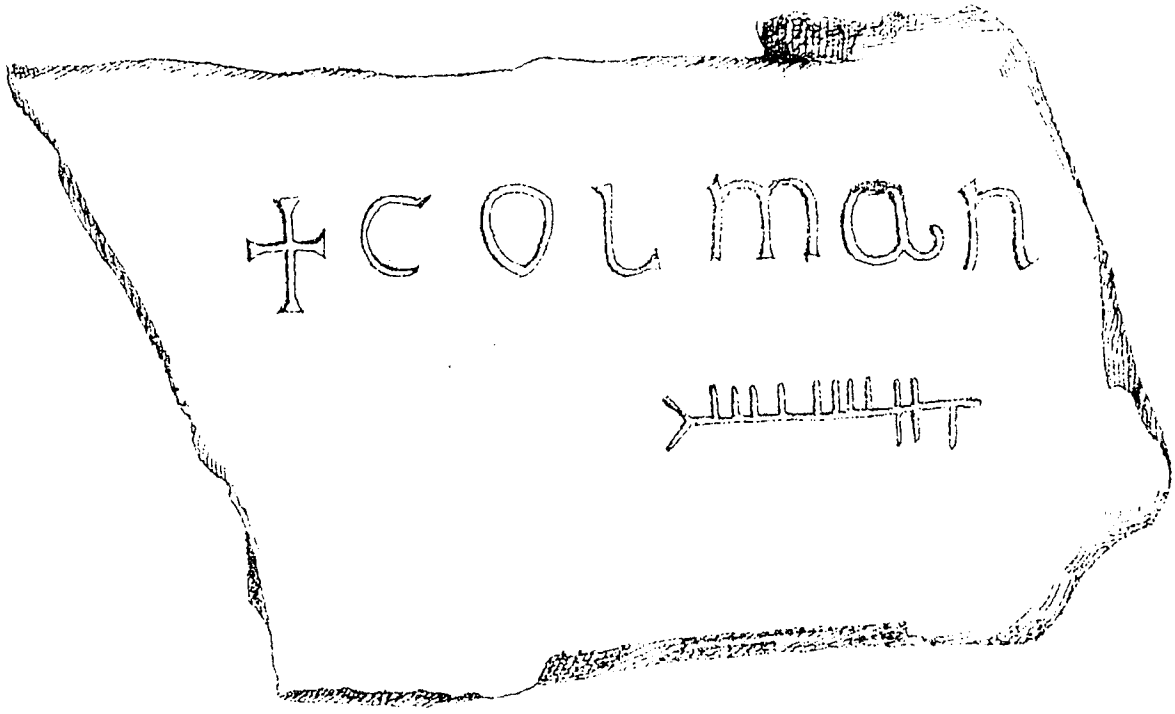
675

8: 6. Two examples of conjoint triplets, a borrowing from display cursive writing: A, from Iona, and B, from Clonmacnoise.



8: 7. Three incised examples of conjoining from the left bow at Clonmacnoise, Macalister's 1949 CIIC numbers.

8: 8. Bi-alphabetic inscription to Colman 'bocht' from Clonmacnoise.



Scale 1/6.

8: 9. The main hand of the Echternach Gospels, using set minuscule, f.177.

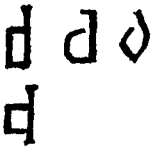
8: 10A. A line of lettering from a Clonmacnoise small panelled cross slab, CIIC no. 642, set beside B, a line from a panelled slab from Hartlepool, C A-S SS Hartlepool no.1.

8: 11. Schematised alphabet of angularised letters from the small panelled cross slabs of Clonmacnoise.

A

B

C



D

E

F

G

H

I

L

M

N

O

P

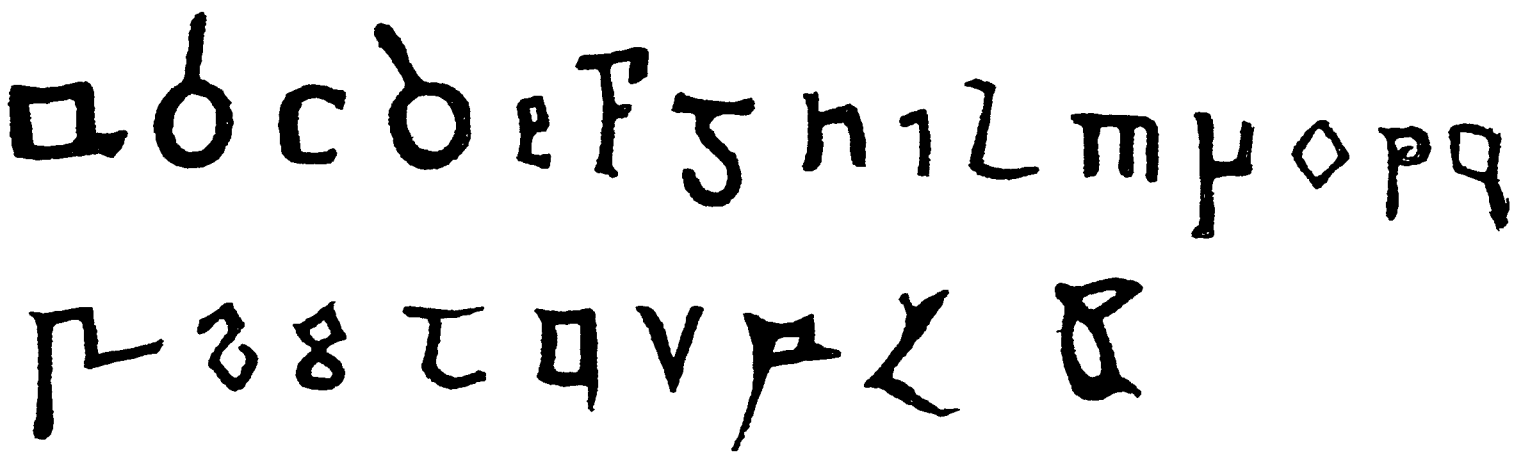
Q

R

S

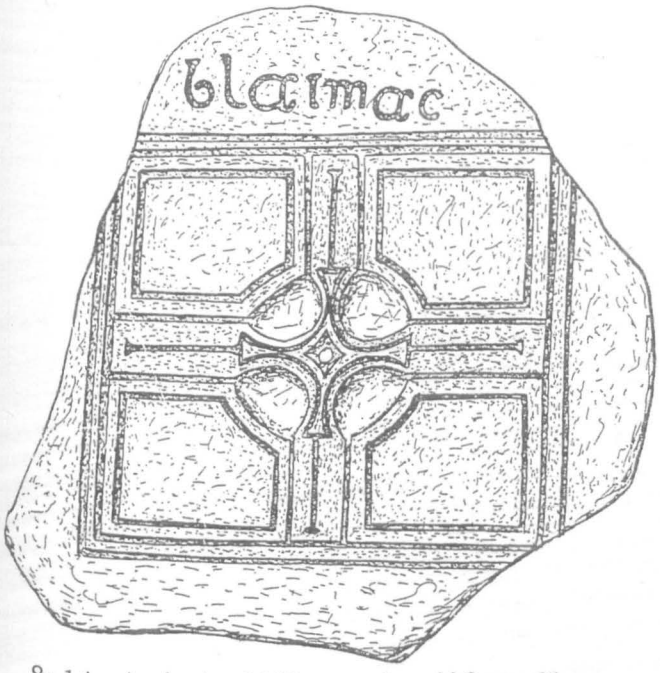
T

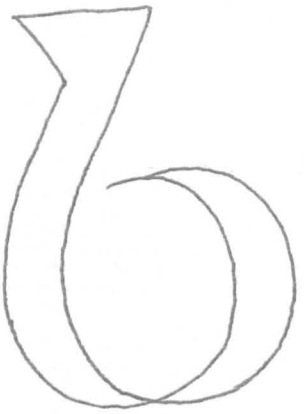
U



8: 12A. CIIC 1 from Inchagoill, Co. Galway, and B, Margaret Stokes' drawing (alphabet only) of the Kilmalkedar alphabet stone, of great interest in that the **ab** section was fractured away and lost after her drawing was made.

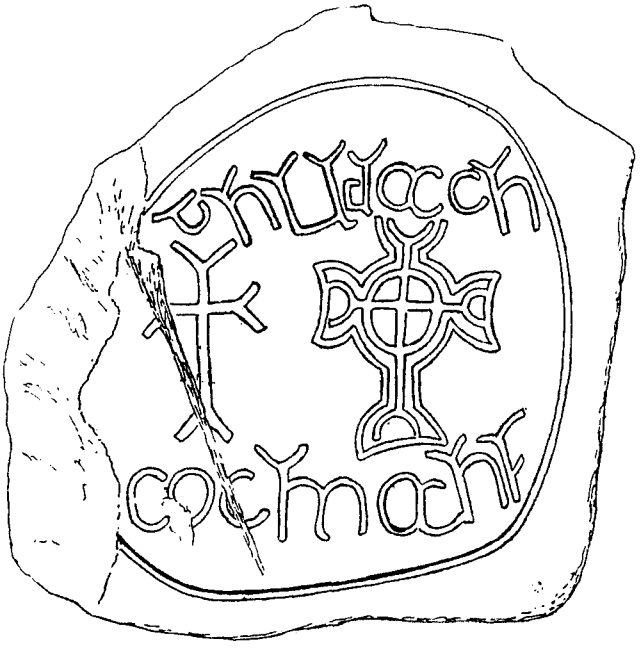
8: 13. A rare incised half-uncial serif in the small panelled cross slab series from Clonmacnoise.CIIC II, no. 641.





8: 14. An incised bifurcated serif from Clonmacnoise.CIIC II, no.846.

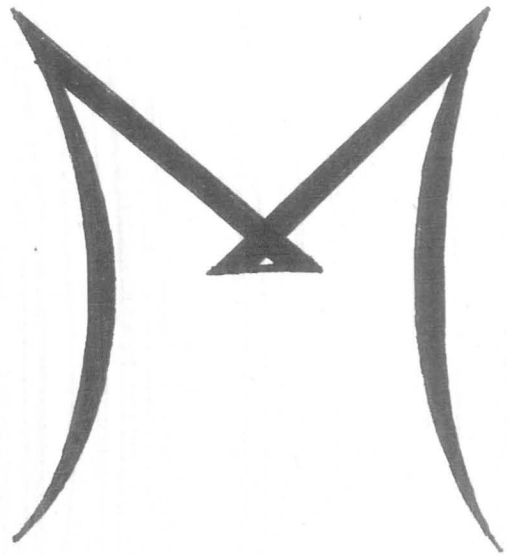
8: 15. CIIC no. 579, a good example of wild bifurcated serifs on gritstone, from Marlay in Co. Louth.



8: 16. The Kilnasaggart inscription, CIIC II, no. 946.

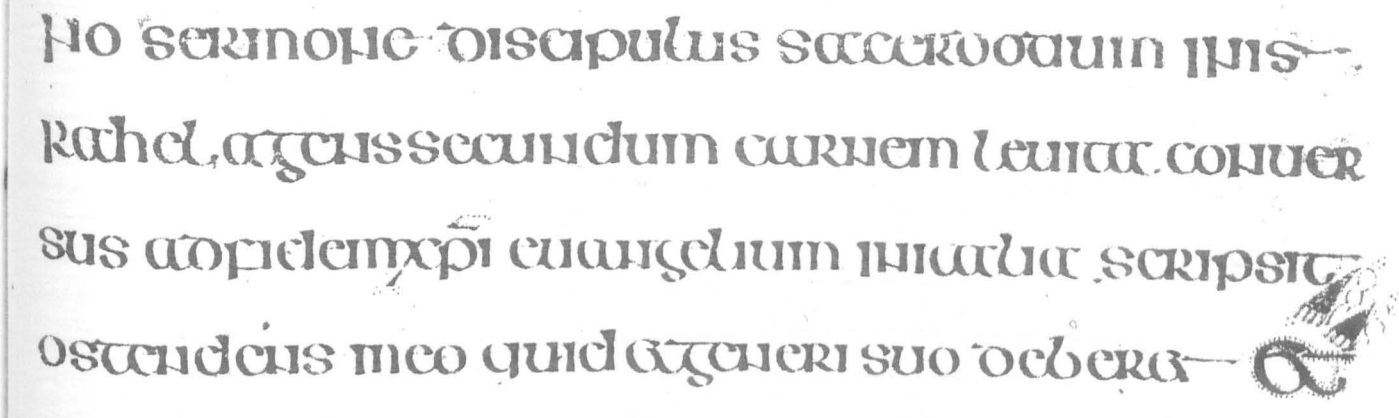
9: 1 . The Lichfield Gospels, showing the two styles of geometric display capital: 1. bold with roughly symmetrical serifs, 2. lightweight with more calligraphic, left-weighted serifs;

9: 2. The Book of Durrow, opening of St John's Gospel, tone-supressed image showing mixed alphabet display section with Greek *alpha*, *delta* and *mu*.

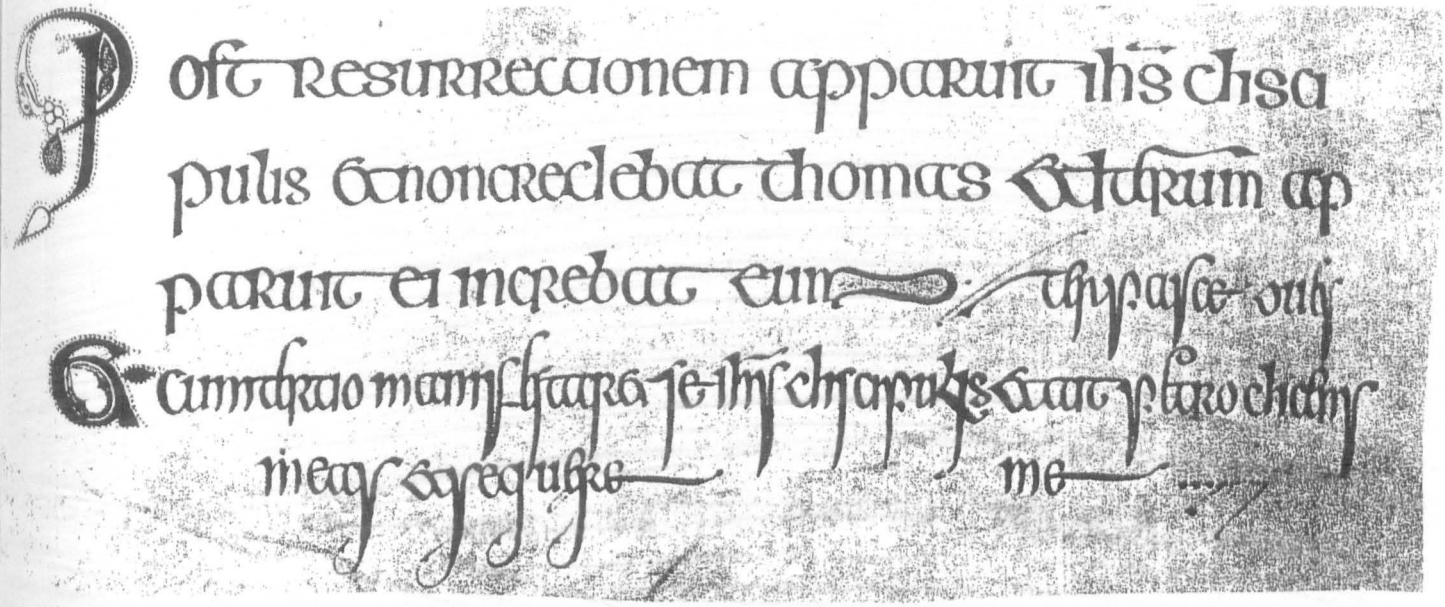


9:3. Diagram enlargement of display capital *mu* or M, from 9:2, showing the mixture of drawn lines that emulate chip-carving cuts: the two uprights as lentoid bars and the intersecting diagonals with, as it were, an incised pyramidal stop (see Appendix 1 for examples cut in wood).

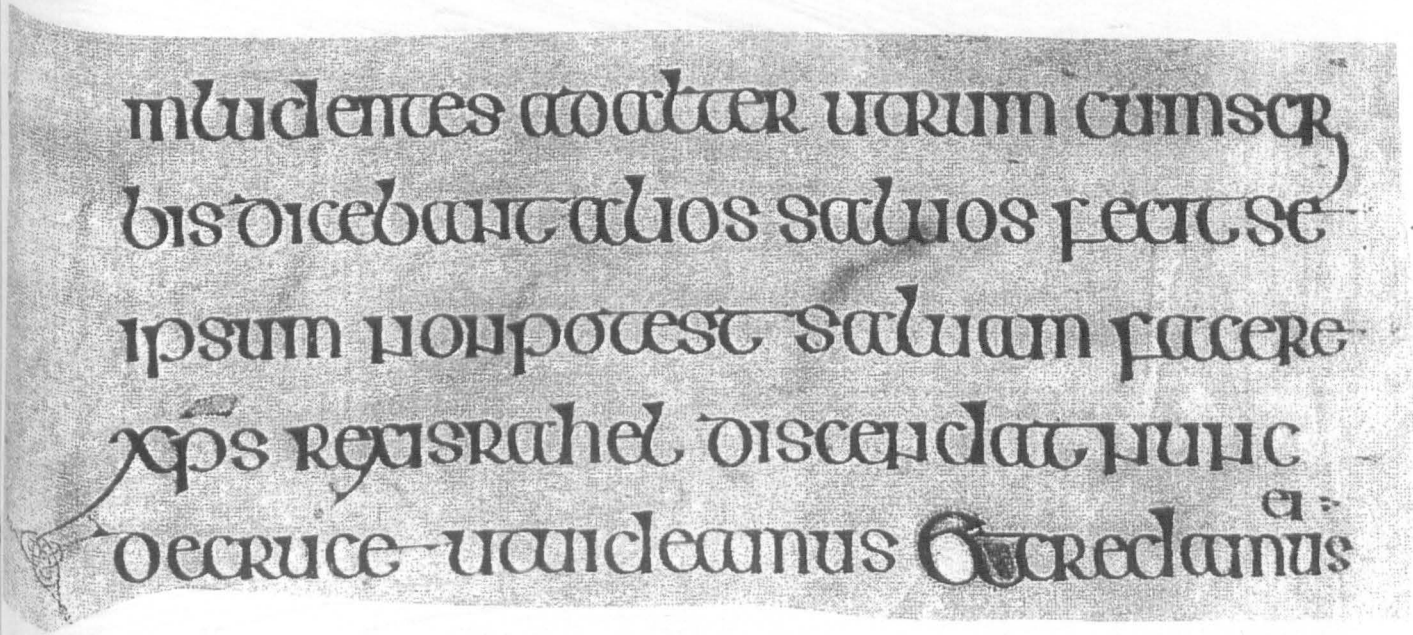
9: 4. The text hands of the Book of Kells, in Dr F. Henry's analysis.



A

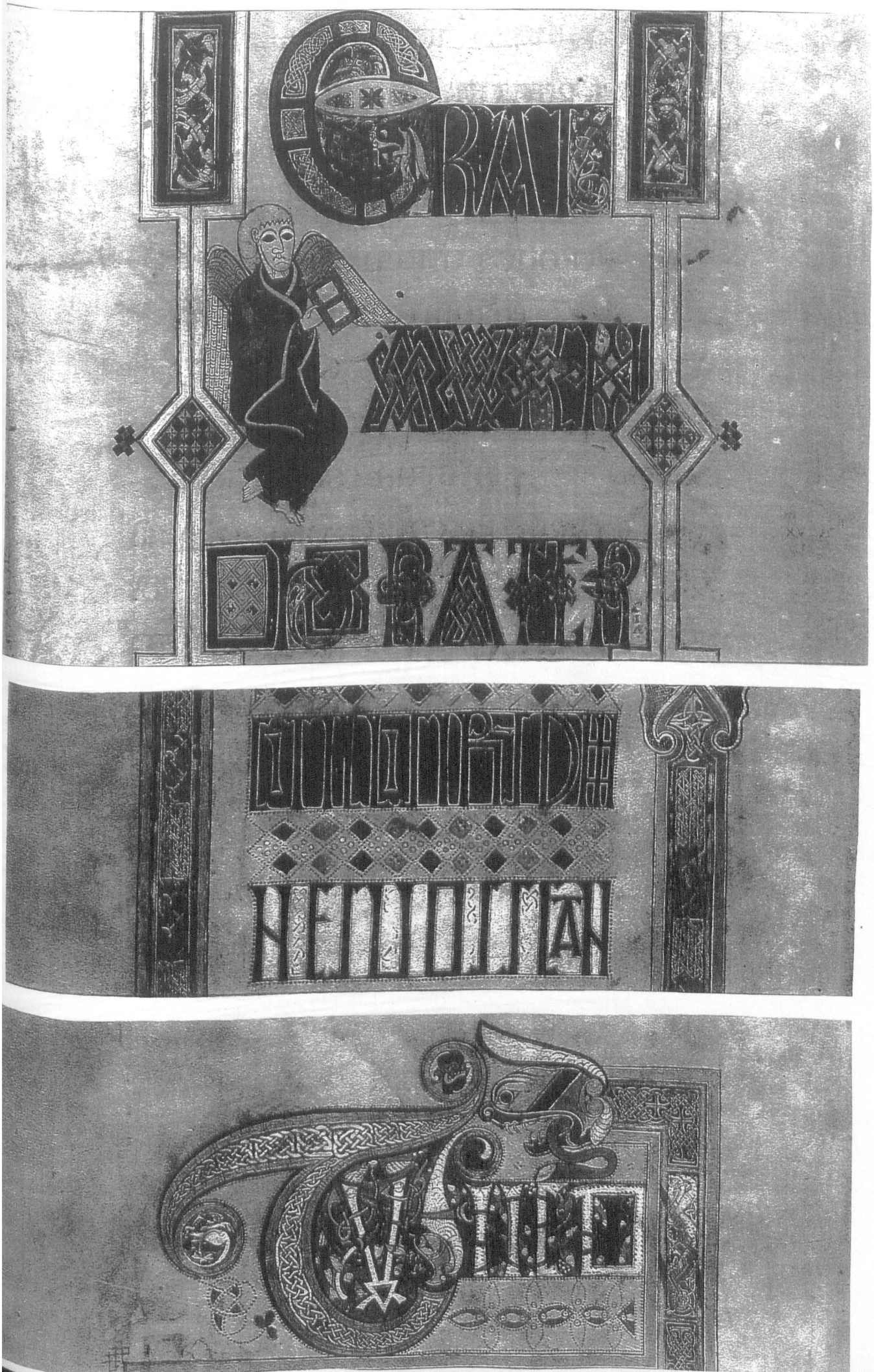


B



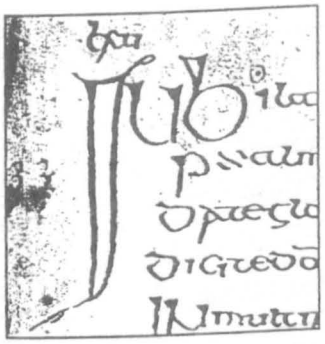
C

9: 5. Three types of display capital from the Book of Kells.



Fol. 15v

Fol. 22r



Fol. 26r

Fol. 30v

Fol. 36v

Fol. 32v

Fol. 40r

Fol. 43r

Fol. 43v

Fol. 52r

Fol. 55v

9: 6. A selection of display openings from the *Cathach*, showing *diminuendo* and the distortion of forms caused by drawing the larger letters in double outline.

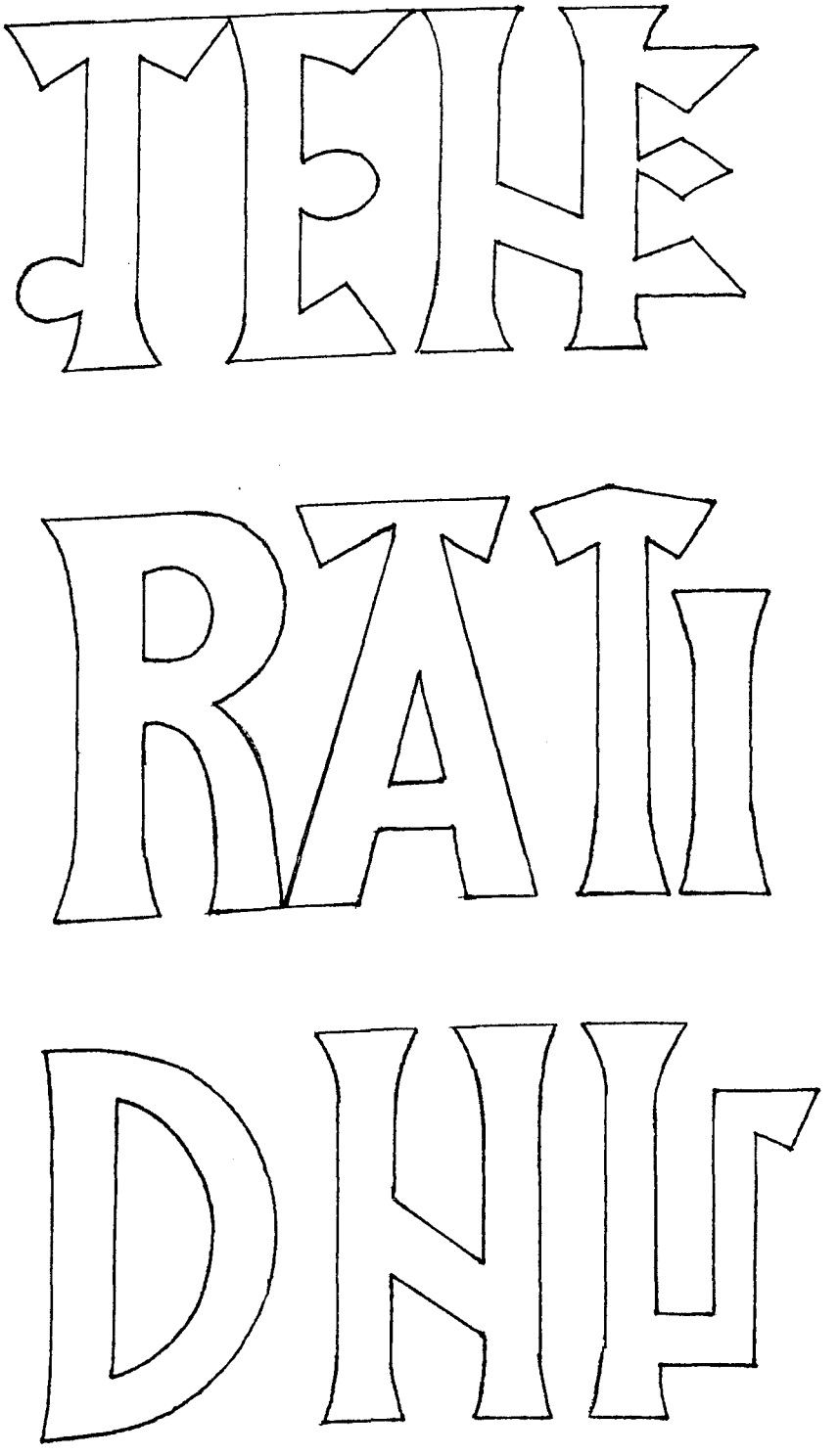
9: 7. The first display lettered opening of the Book of Kells, f.8r.

9: 8. Table of Hands in the Book of Kells, revised from Henry by Bernard Meehan.

Folio	*Hand*
1r	A
1v-6r	B
7v, 8r	?
8v-19v (11v, 13r, 15v, 16v, 18r rubrics by B)	A
20r-26v	B
27v, 28v	?
29r	B?
29v-31v	C?
32v	?
33r	B?
34r	B?
34v	B?
35r-87v	C
88r-125v (114v, addition by B)	D
125v-129r	B

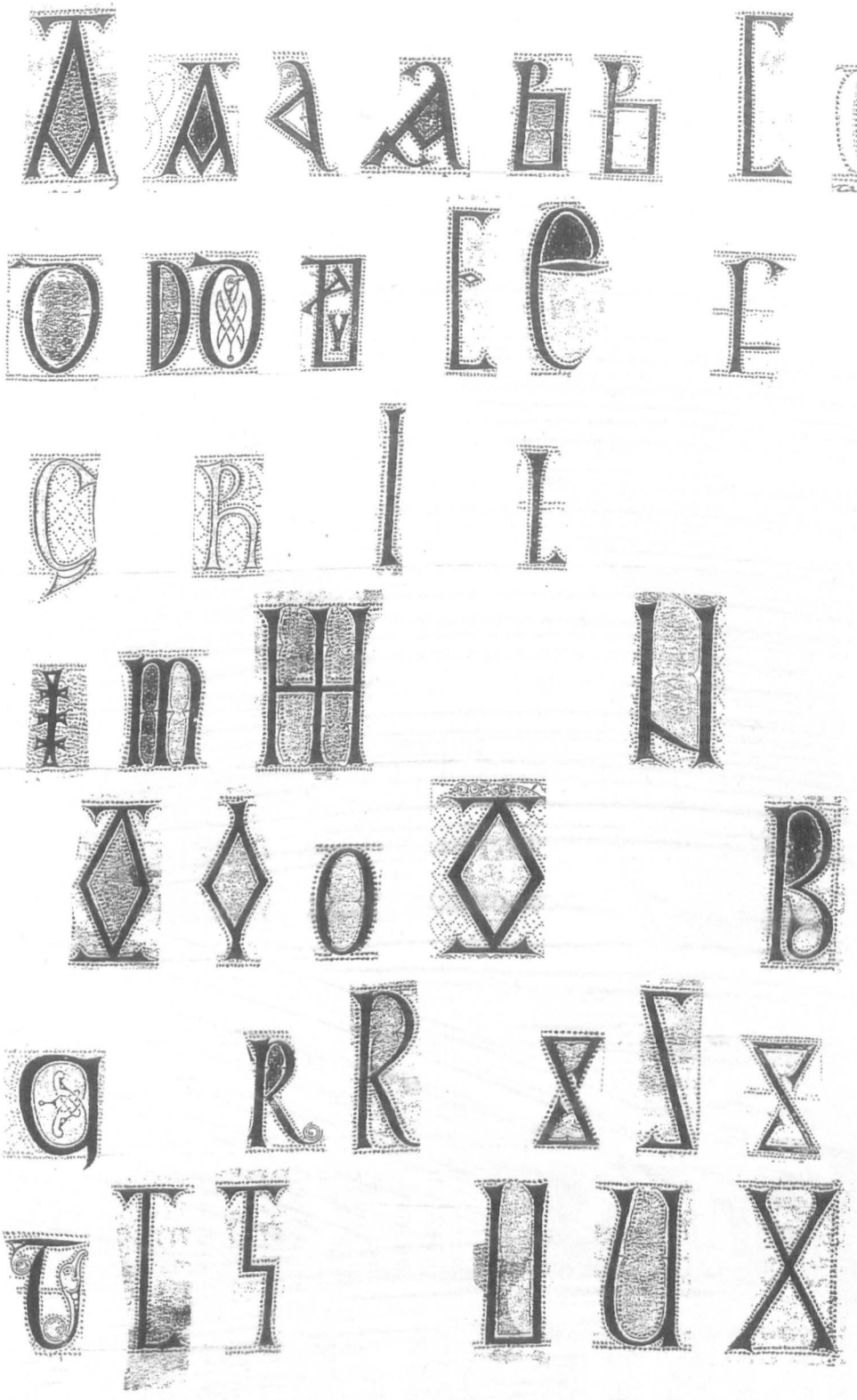
Folio	*Hand*
130r	B?
130v-140v	A
141r-163v	C
164r-187v (166v, 167r, 183r, additions by B)	D
188r	B?
188v	B
189-202r	C
202v, 203r	?
203v-243v?	C
243v?-289r	D
290r	B
292v-339v (327v, addition by B)	A

9: 9. Uncommon types of display letter in the Book of Kells. Enlarged detail f.29r. showing Type C alphabet letters **E** , **S**, **G** and **T** also found in the St Gall Gospels, a style used epigraphically on ECMs Tarbat no.10.

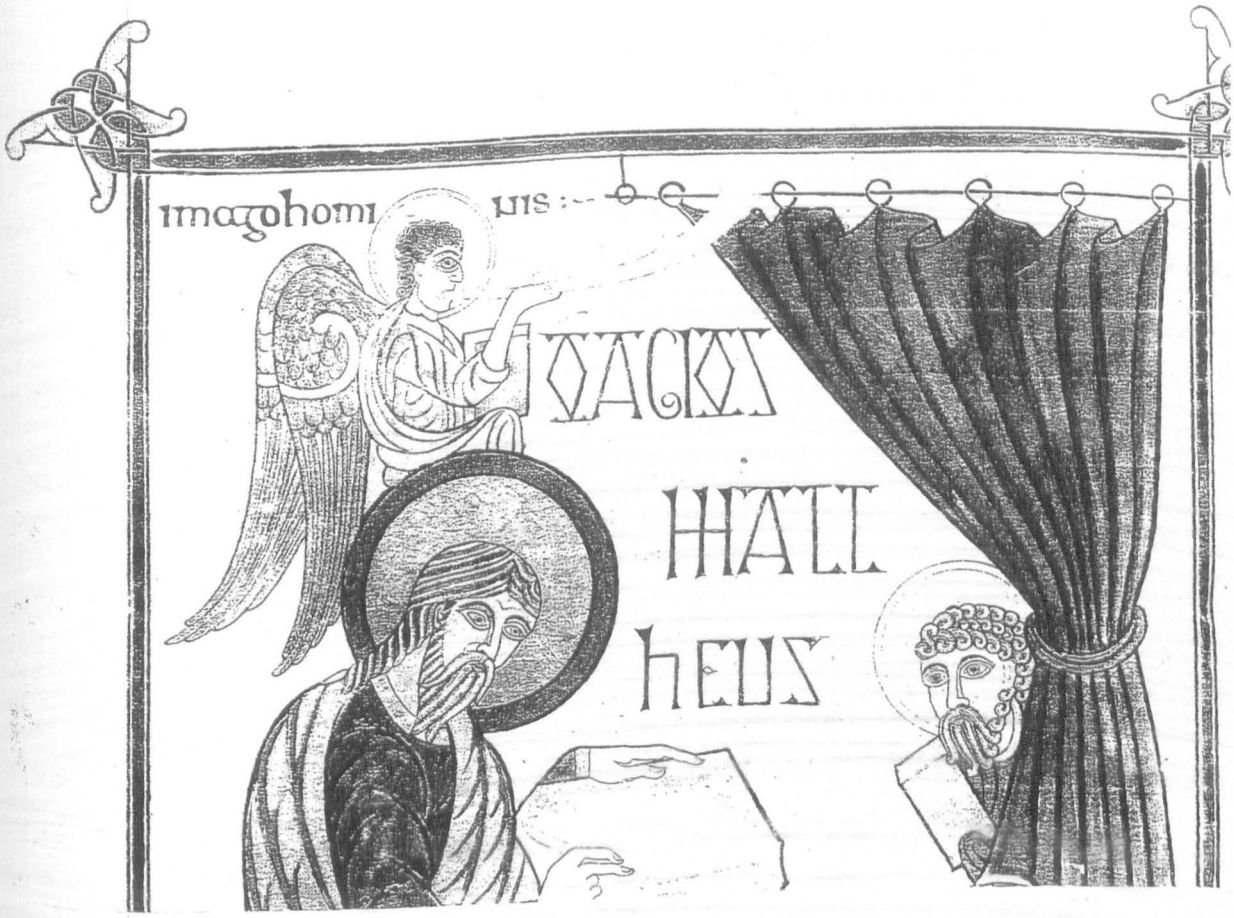


9: 10.The two types of geometric display letter in the Lindisfarne Gospels drawn together as comparative alphabets: the display letters of Eadfrith, the assumed main hand.

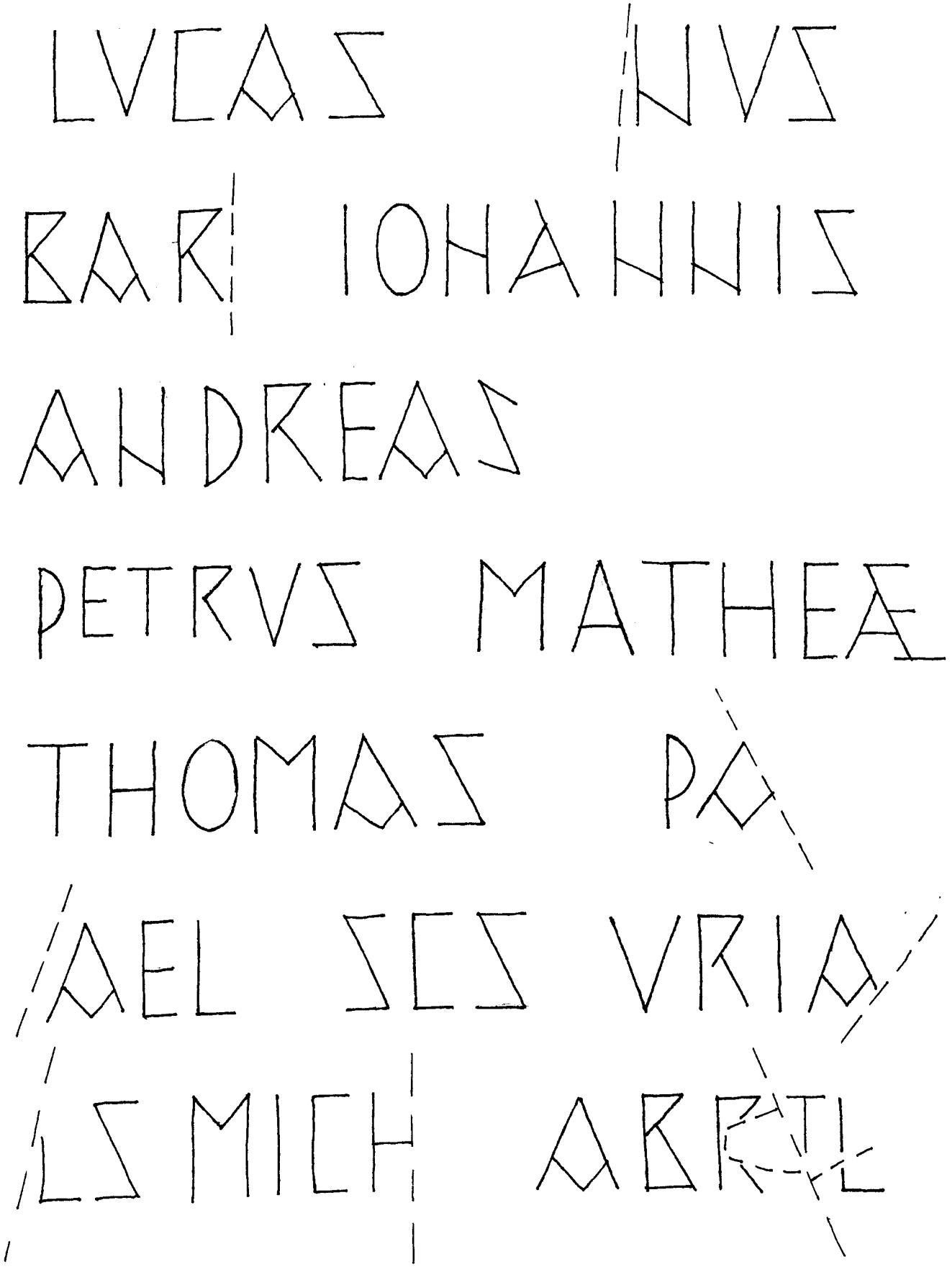
9: 11. The display hand of the 'Rubricator' of the Lindisfarne Gospels.



9: 12 A and B. The two alphabets above shown in context within the Lindisfarne Gospels. A shows the display hand of the main hand of the text., B shows the display hand of the 'Rubricator'.

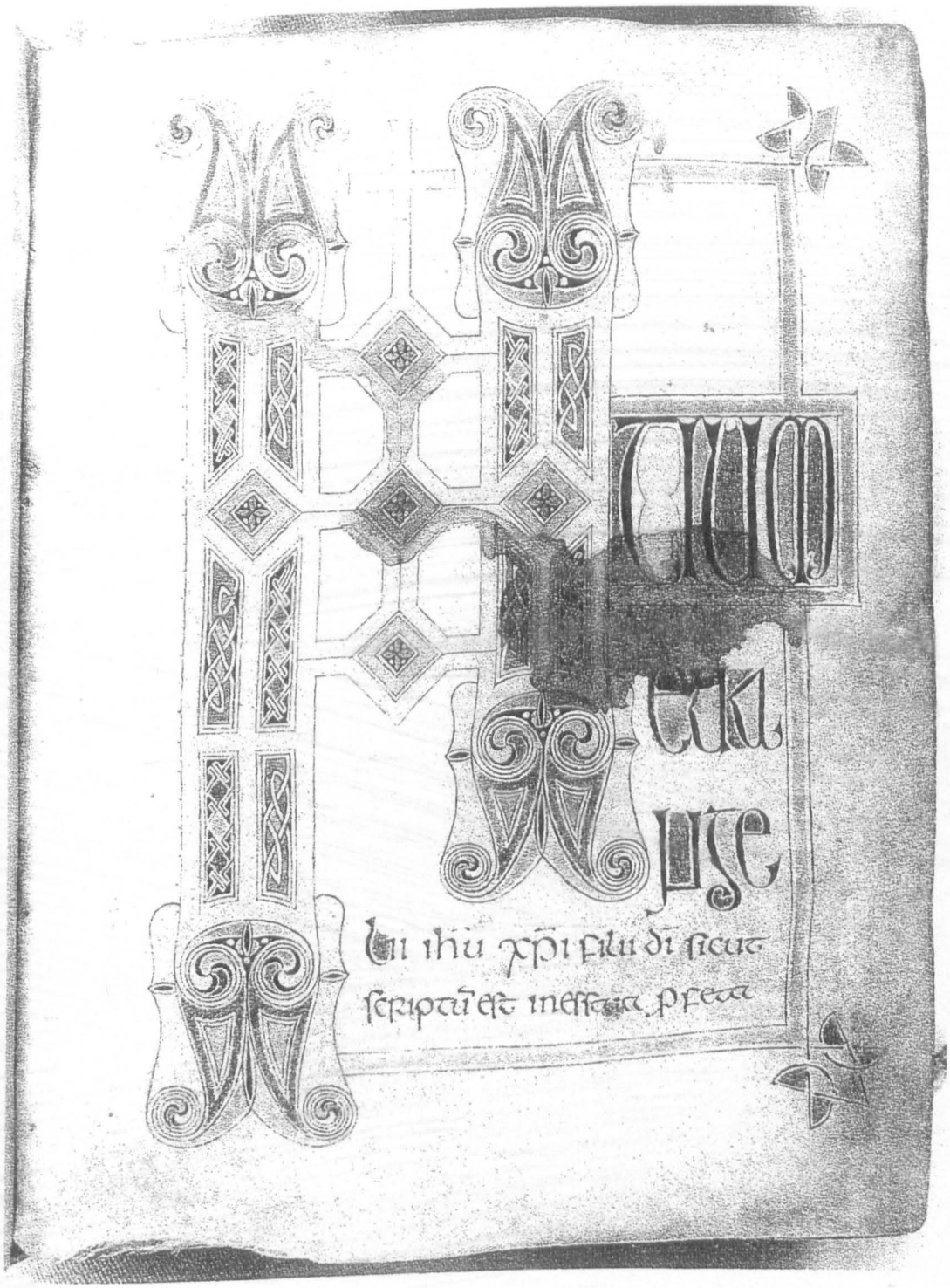


9: 13. The display capitals of St Cuthbert's coffin (after Battiscombe).



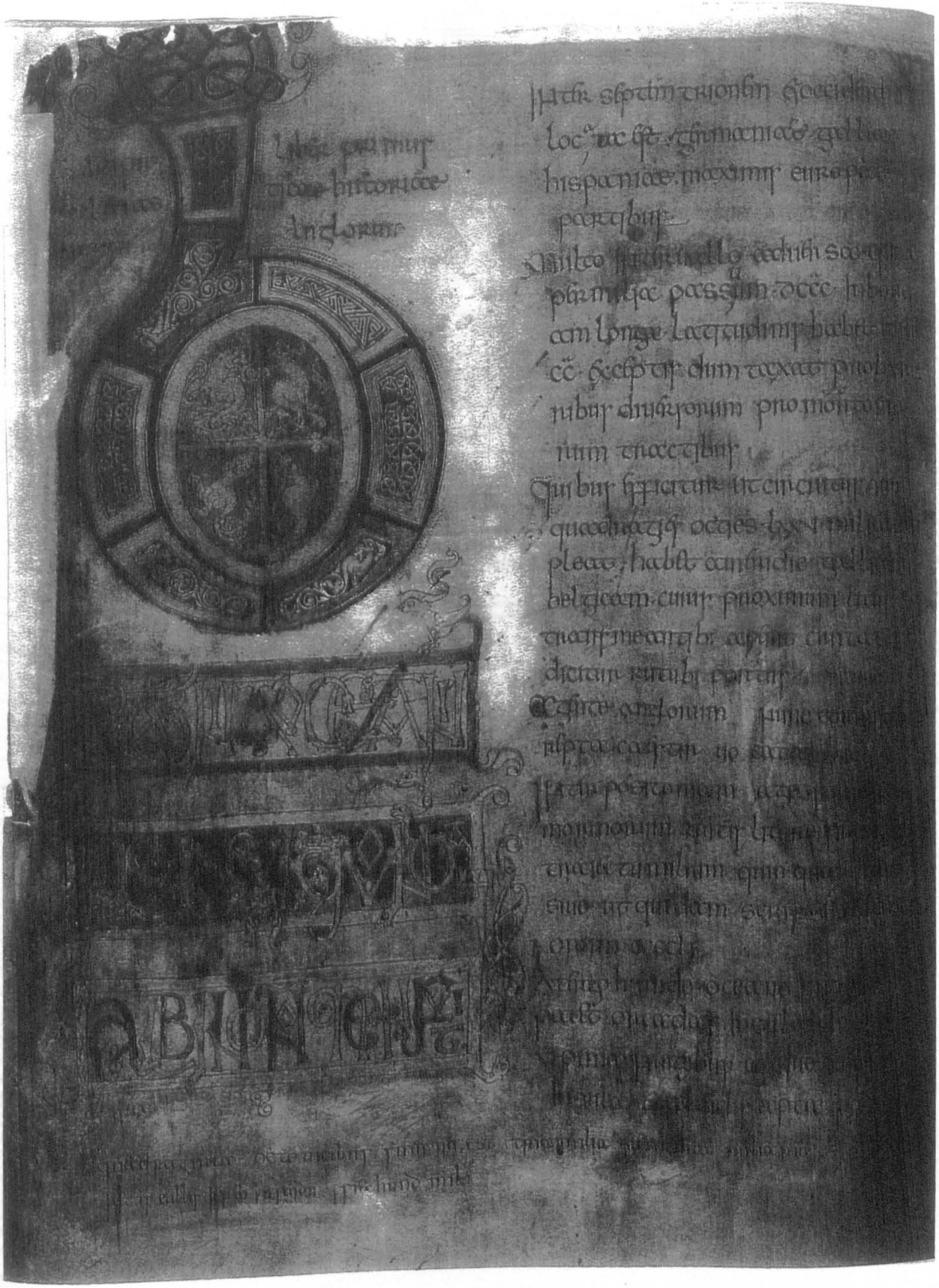
9: 14. The first display page of the Lindisfarne Gospels, f.3r.

9: 15. The display capitals of the Hereford Gospels, Hereford Cathedral Library, P.I.2, f.36r., showing artificial manipulation of serifs and artificial bracketing of the left bows of the **V** and the **A**, in line two at **EVANGE(li)**.



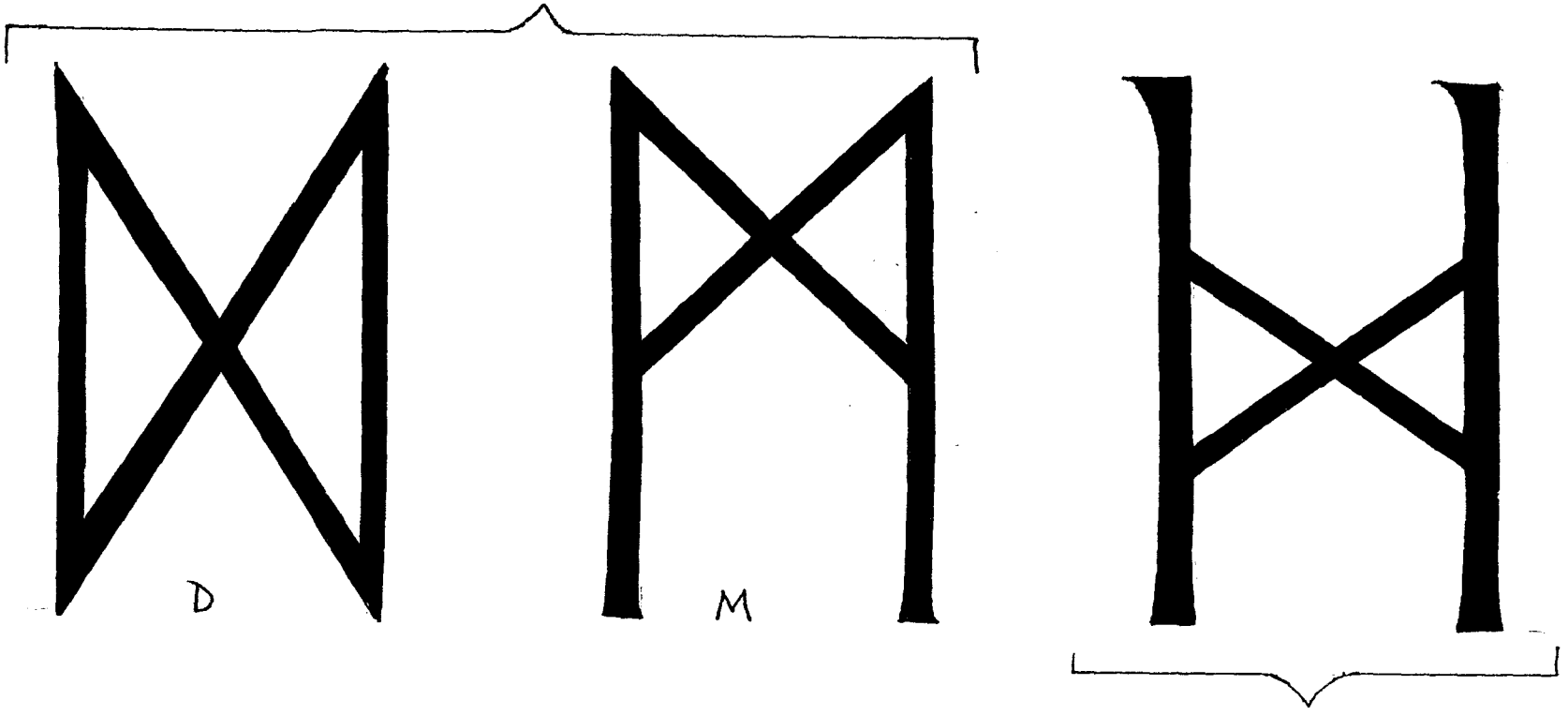
Hereford Cathedral Library, P. I. 2, fol. 36r (Voir p. 48-79)

9: 16. Display capitals from the *Tiberius* Bede, BL Cotton MS Tiberius C. ii, f.5 b. showing the extent of whimsical debasement of the geometric forms in Anglo-Saxon hands by the mid-ninth-century.



Opening of the *Historia Ecclesiastica* from the 'Tiberius' Bede (f. 5b)

9: 17. Diagram showing Runic-shaped letters used in the Lichfield Gospels, p.221.

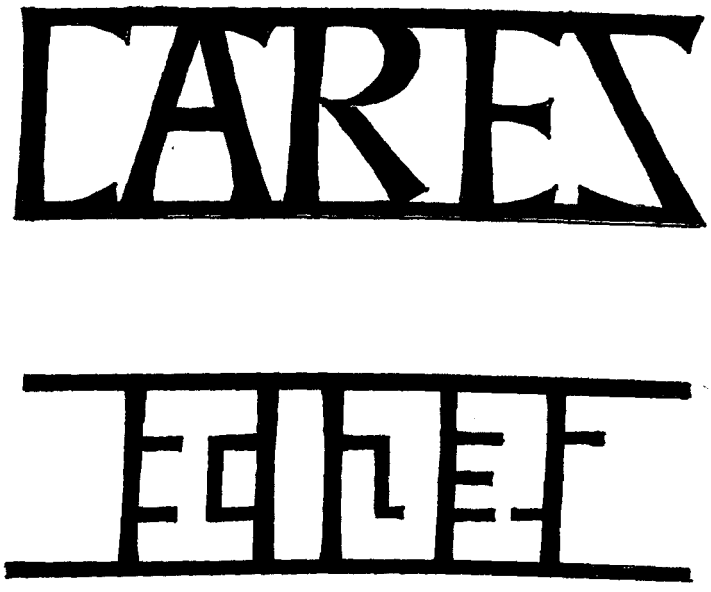


9: 18. Diagram showing Runic-shaped letter from the Book of Kells, f.8r.

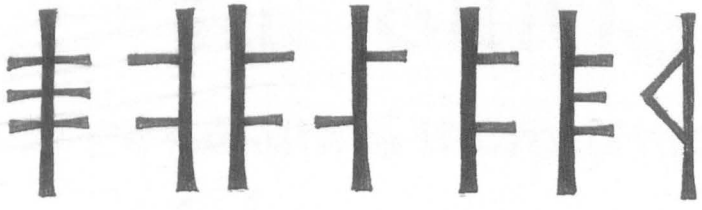
A C E N O S

9: 19. 'Type C' geometric capitals, shown in the sequence A, C, E, N, O, S; these are evidently survivors from the epigraphic alphabet variously described as 'barbaric' or 'Gaulish'

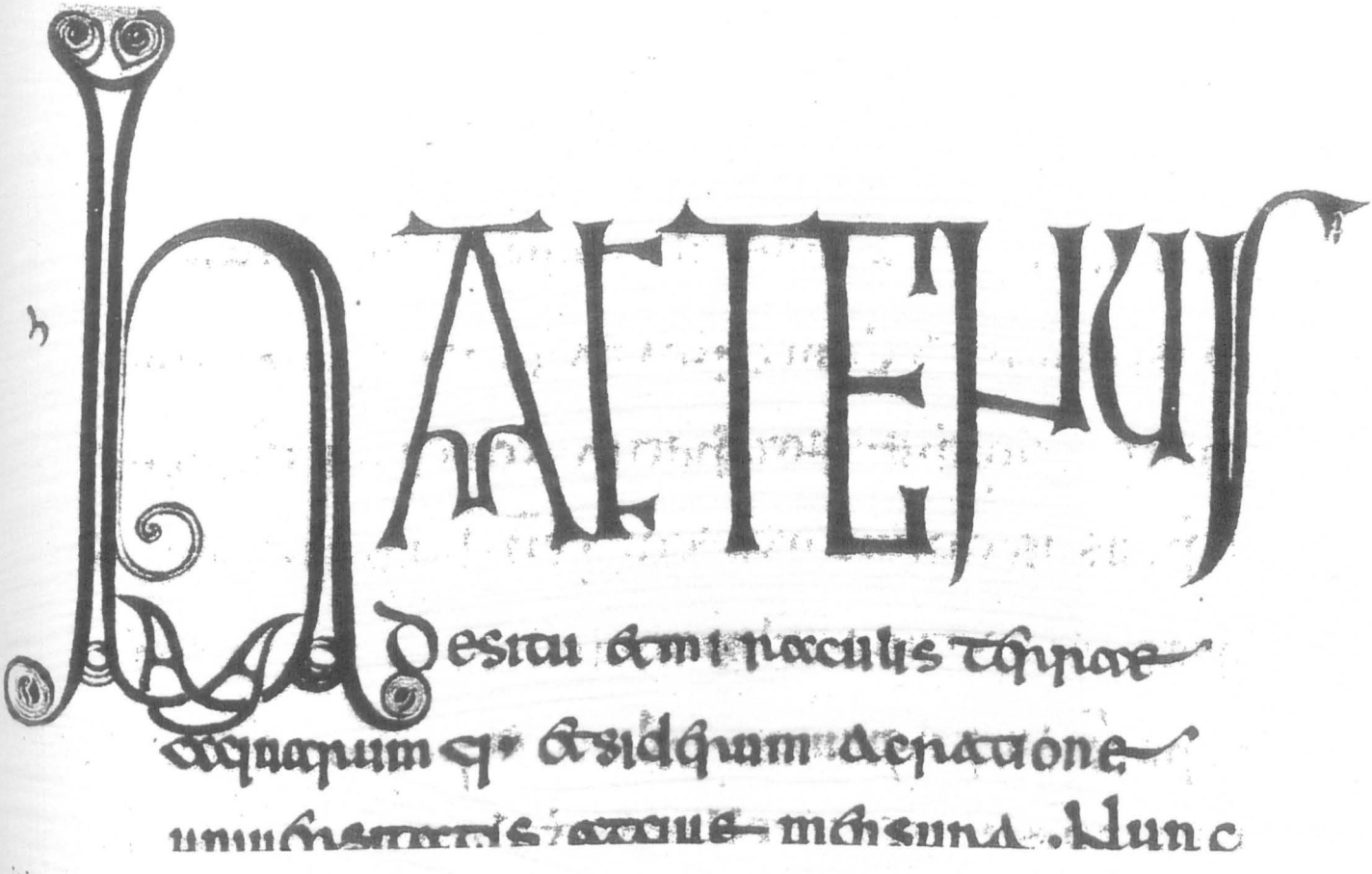
9: 20. Diagram showing A, Anglo-Saxon-style display letters in bands, and B, Type C geometric display letters in bands.



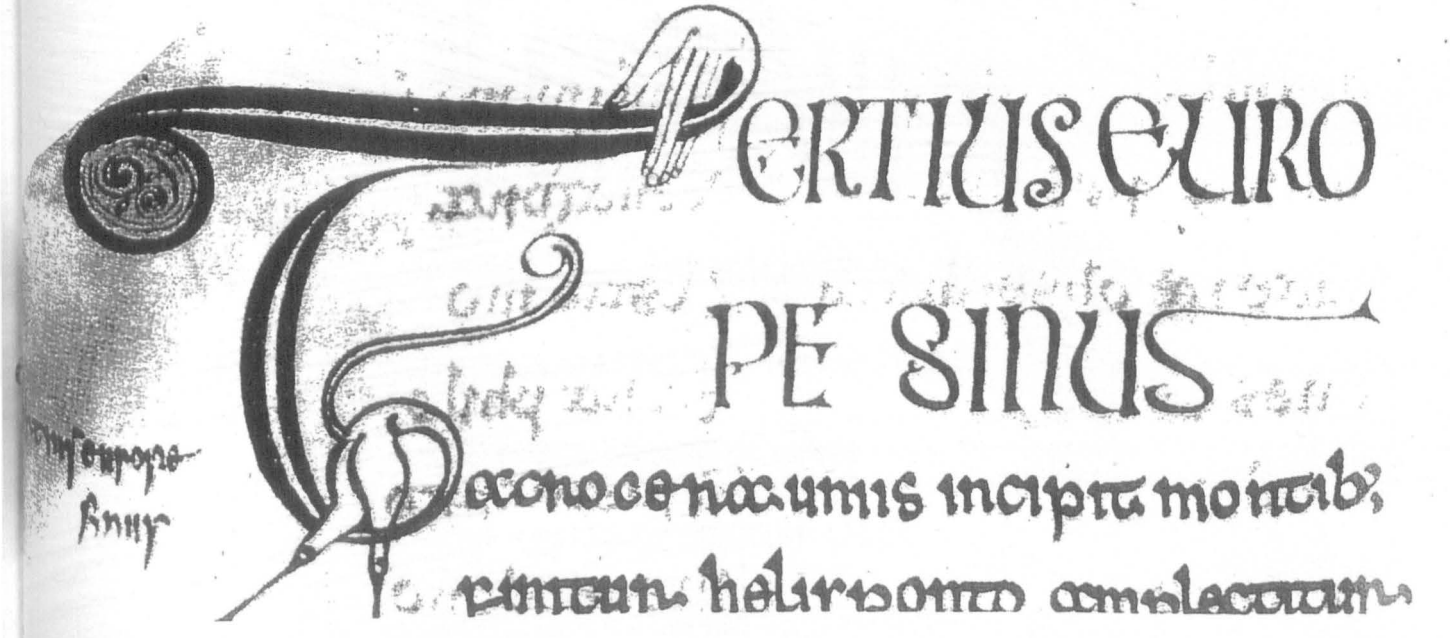
9: 21. A, The Lindisfarne Gospels, f. 95, showing use of ogham-like three bar M in a terminal compound with the 'U' of 'INITIUM'; with diagram B, letters taken from f. 95 and 139



9: 22 A, MS Leiden, Voss. Lat. F. 4, f 9v. showing the gradual abandonment of strict geometric display letters for more fantastically shaped forms, though in the display letter C we still find a letter from the Type C alphabet; B, from f.20 v. in the same manuscript shows that the fantastic decoration was of a higher standard than the display lettering.

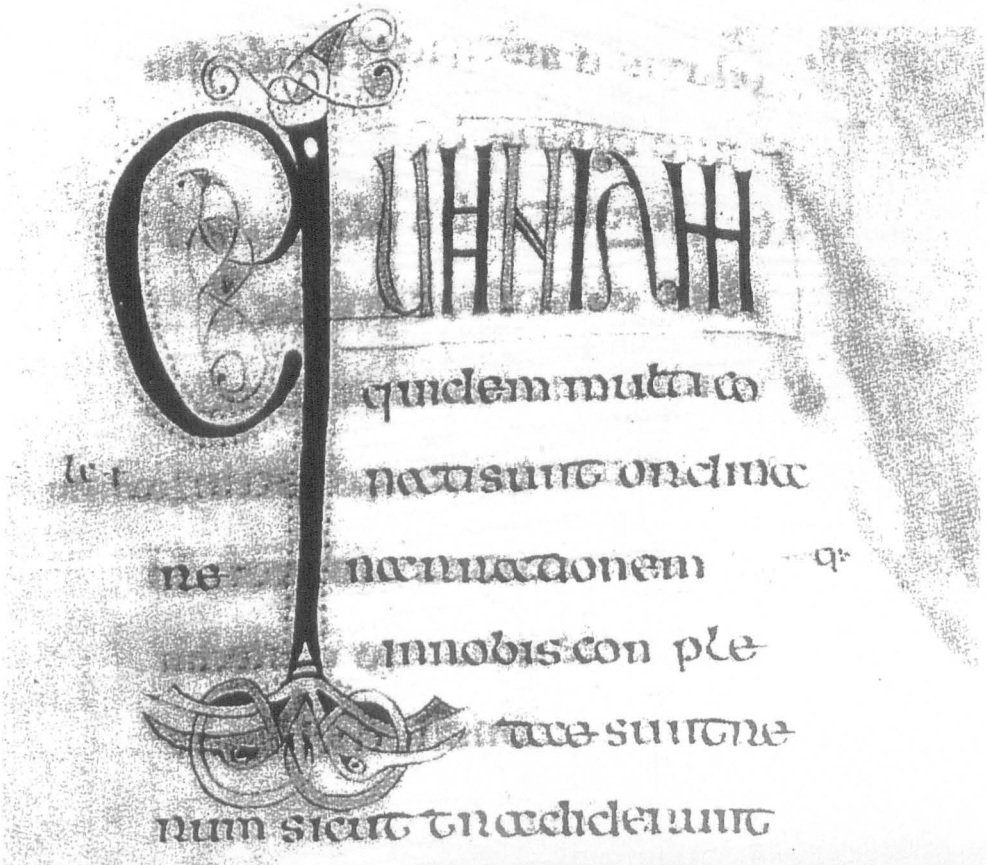


itial H. Leiden, Universiteitsbibl., Voss. Lat. F. 4, f. 9^{v} (cat. 18)

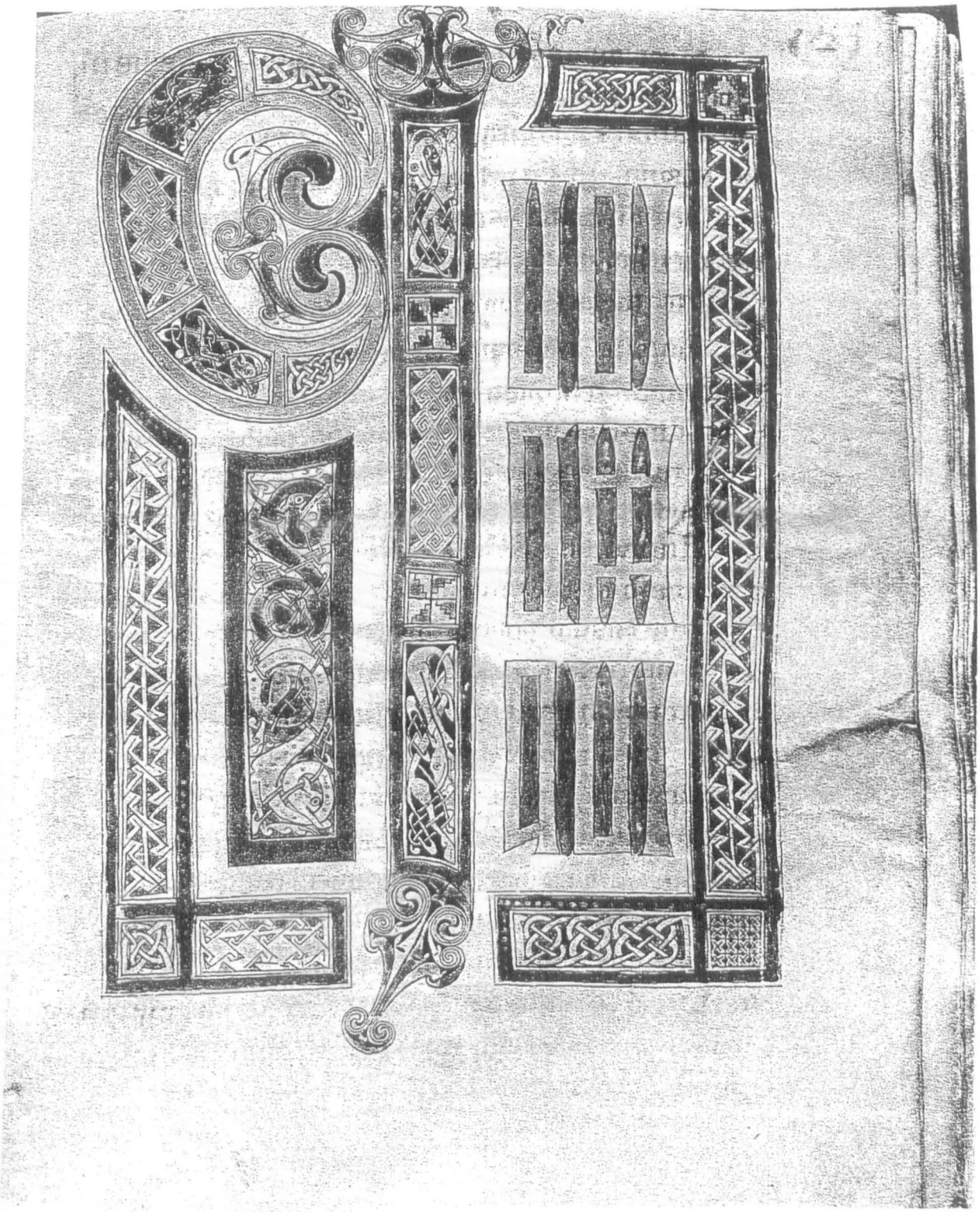


9: 23 A, the *christi autem* from London BL, Royal 1. B. VII, f. 15v, showing the mistaken use of *pi* as a Greek version of roman 'R' in XPI, and the bungling of the geometric 'A' of *autem* as an 'H' form. These are signs that scribes no longer had command of a system. The line of display script from the same MS CHECK ALEX f, shows a *Quoniam* that mixes a gate **M** with a Type C **O** and a fancifully deformed **A**.

Initial X. London, B.L., Royal 1. B. VII, f. 15^{v} (cat. 20)



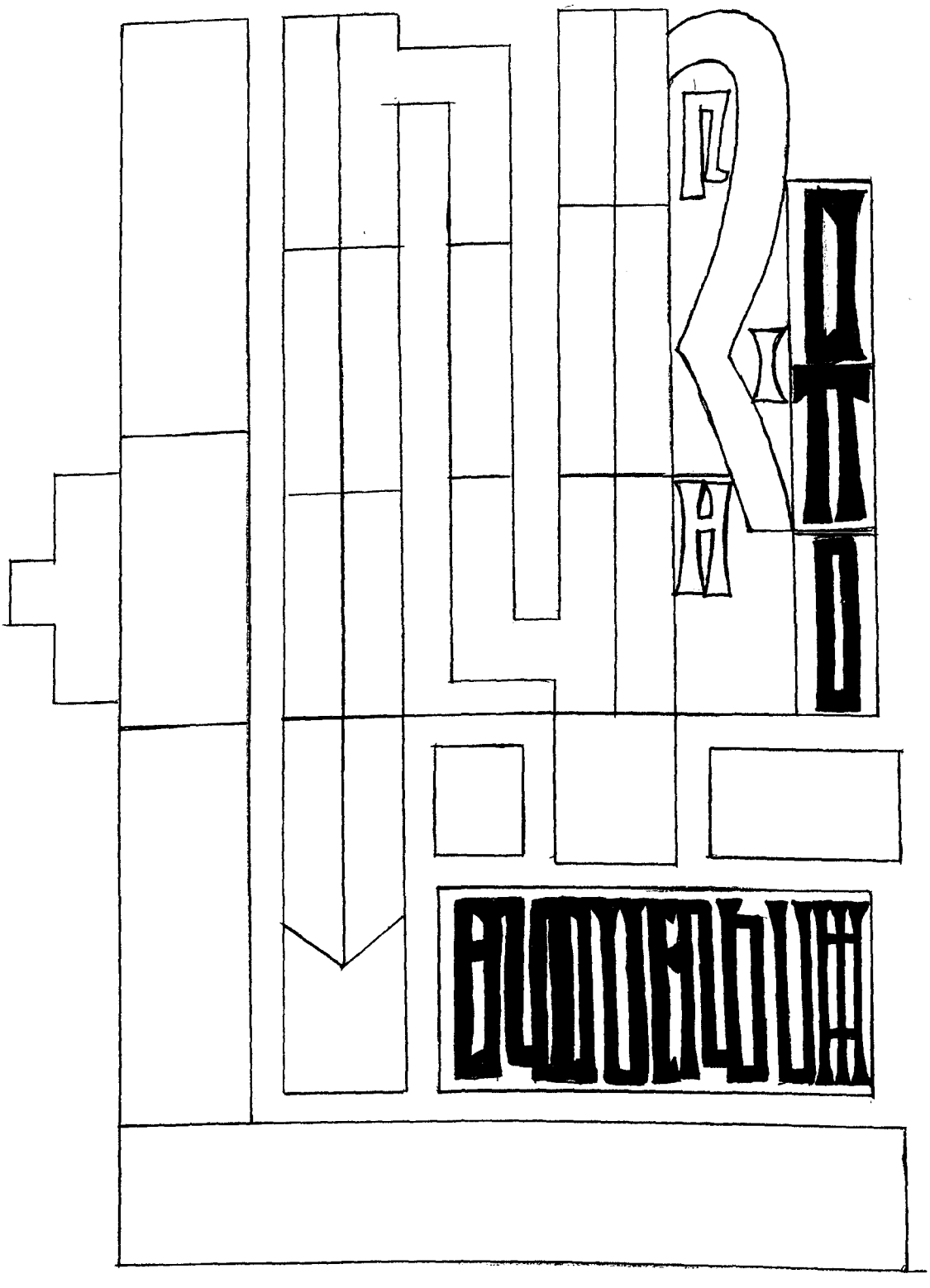
9: 24. Strict geometric display letters in the St Gall Gospels



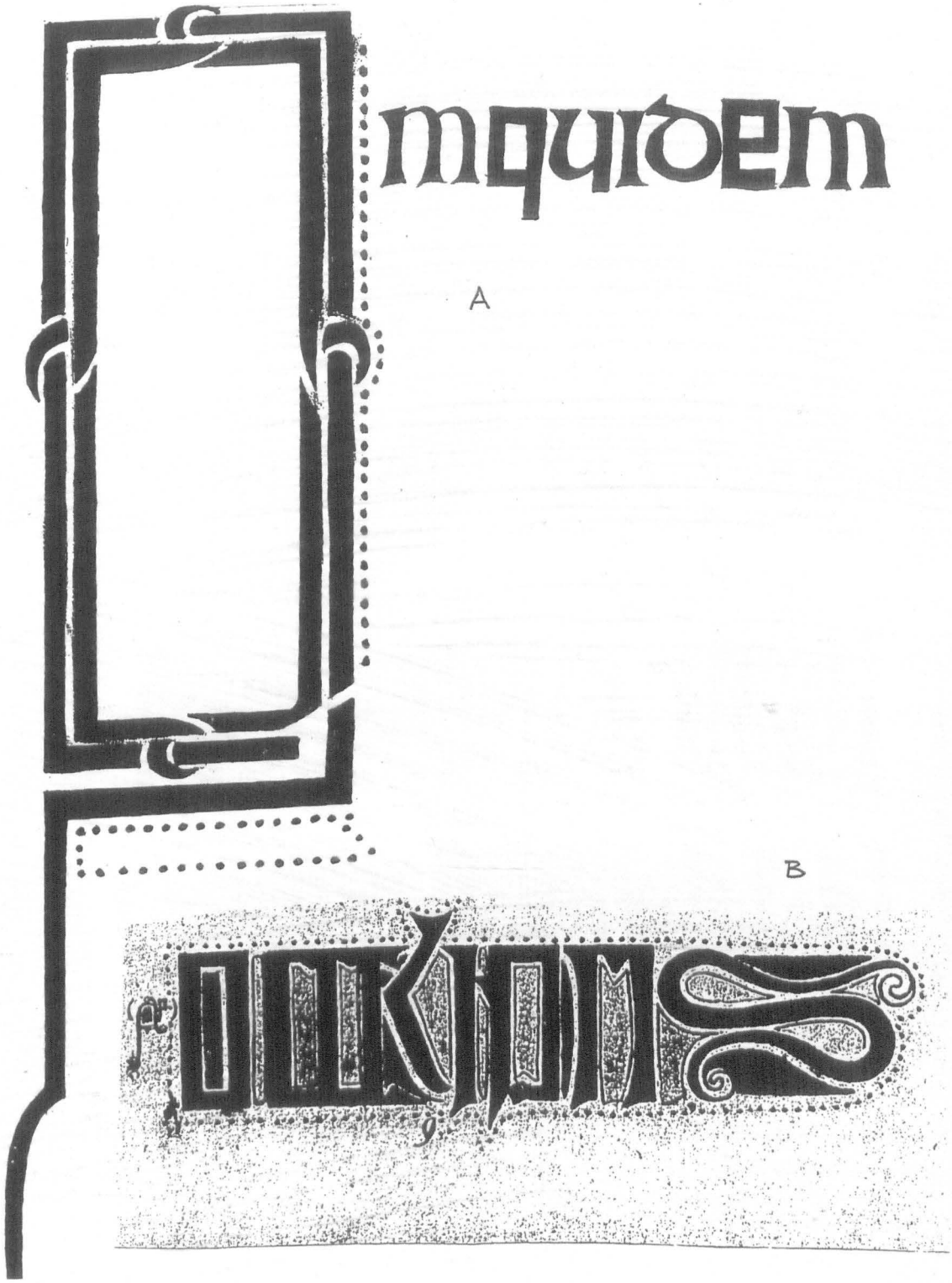
9: 25. Disintegrated geometric display letters in the St Gatien Gospels, f.52v. There has been a loss of understanding of design and legibility, compared to 9: 24 above.

Opening page to St. Luke. Paris, Bibl. Nat., nouv. acq. lat. 1587, f. 52^{v}

9: 26. Late geometric capitals in the McRegol Gospels, showing the page layout as a diagram. Although the scribe has an understanding of individual letter shapes he masses them in such a way as to make them too dense to read at all easily.

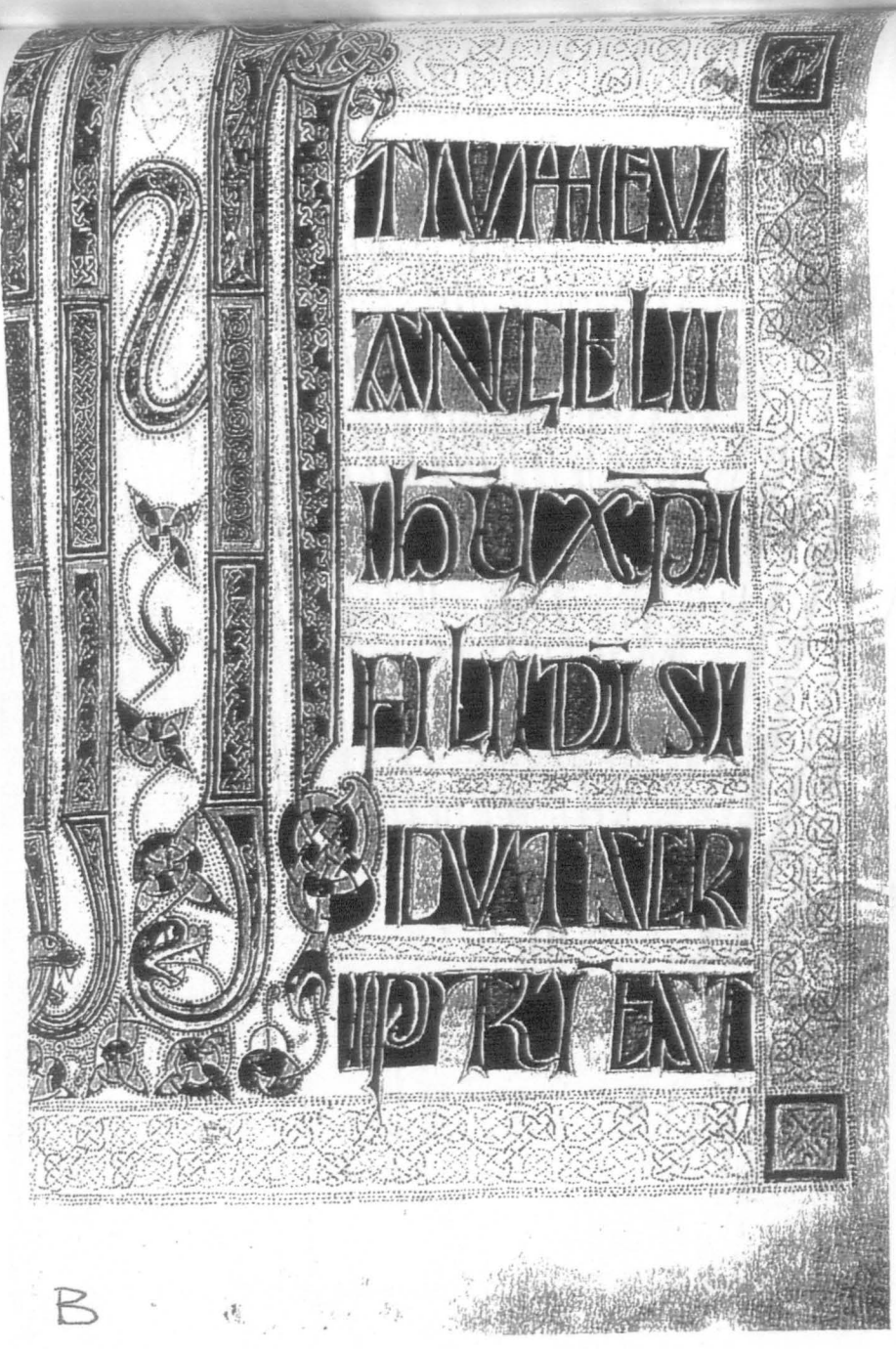


9: 27A, Geometric display letters still being used in the Gospels of MacDurnan, with a minuscule manuscript hand; although the understanding of balance in shape has been lost, this design still adheres to the mixed alphabet system, seen in the Book of Kells, of alternating curvilinear and geometric letters; and B, shows the use of geometric letters in the heading '(Ap)OCALYPSI(S)' in the Book of Armagh, a manuscript written in acomplished minuscule.



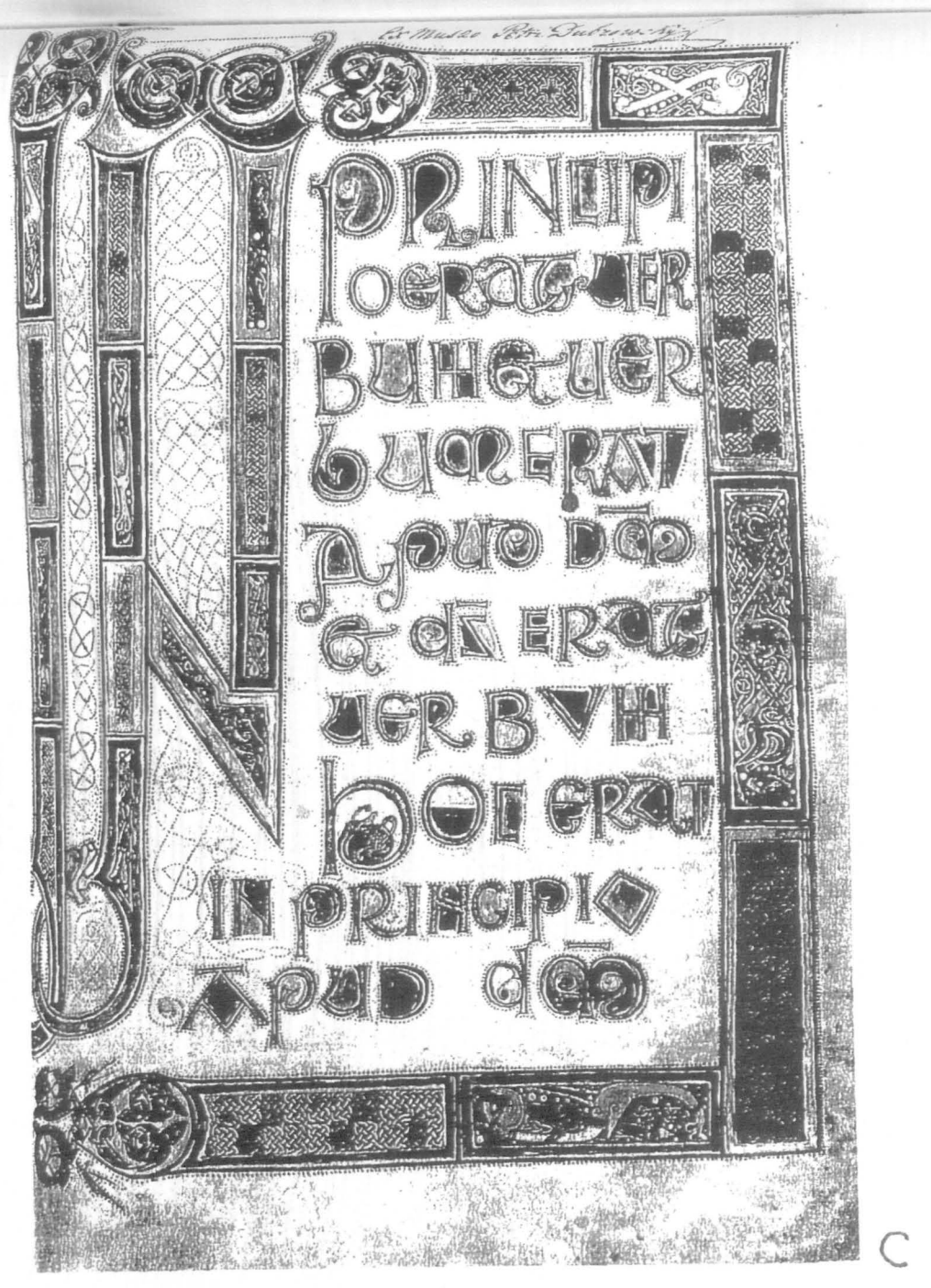
9: 28. The Leningrad Gospels employs three different rubricators for its display capitals: A shows disinegration and an inclination to the curvilinear, B shows a more strictly integrated geometric style, retaining three-bar 'M', and C approaches each letter as a separate work.

Opening page to St. Matthew. Leningrad, State Public Lib., Cod. F. v. I. 8, f. 18



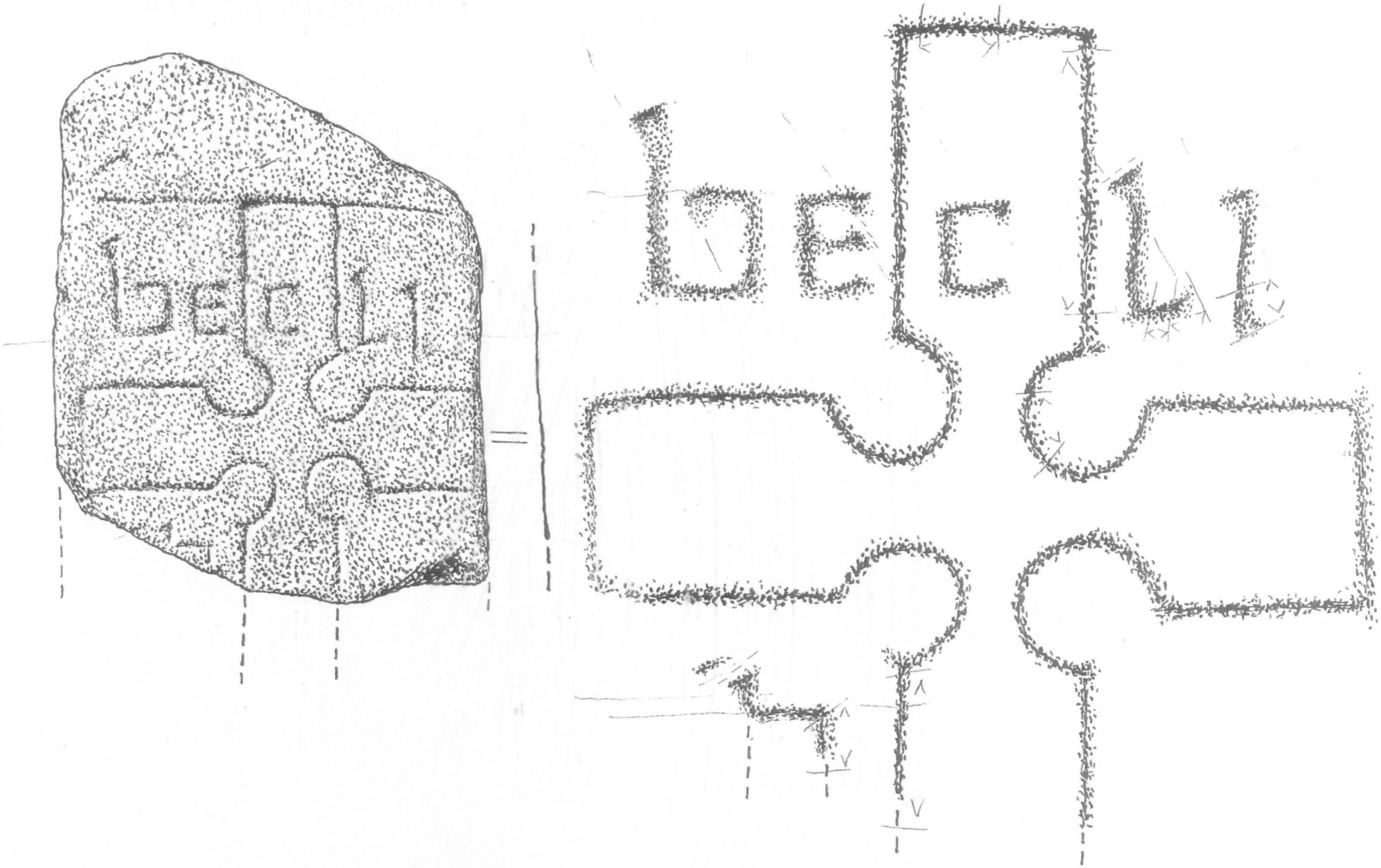
B

Opening page to St. Mark. Leningrad, State Public Lib., Cod. F. v. I. 8, f. 78



C

Opening page to St. John. Leningrad, State Public Lib.,

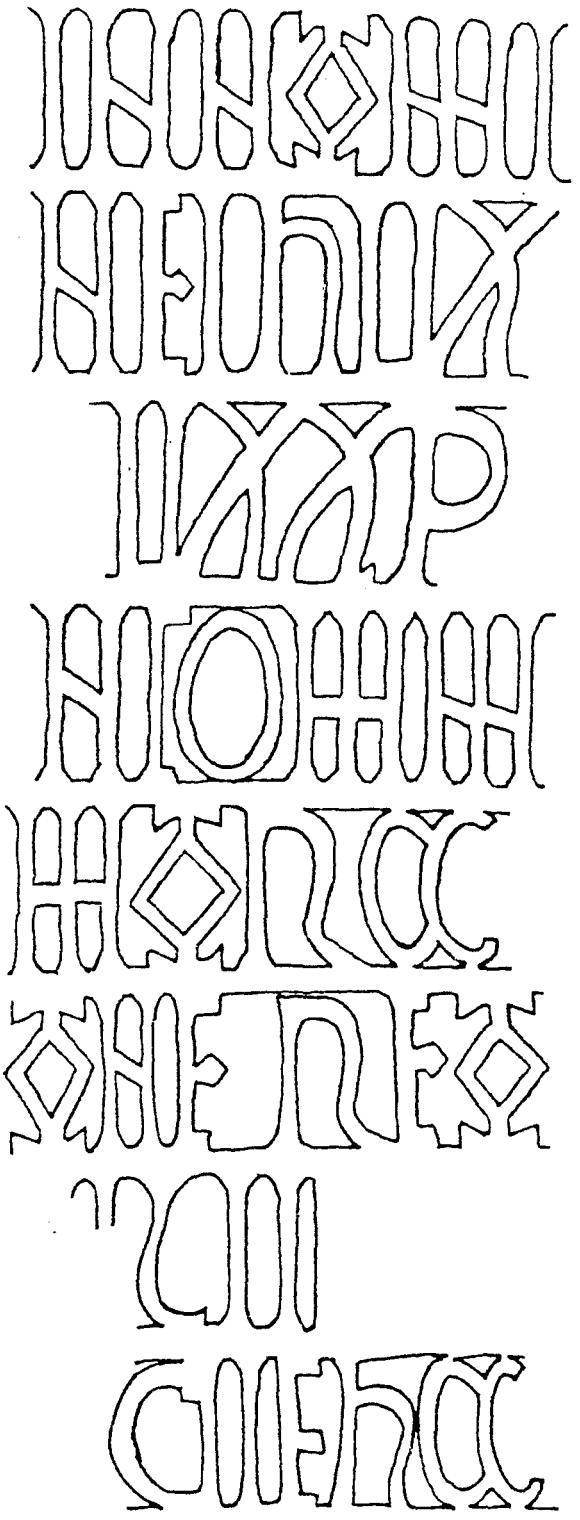


10: 1. The geometric display capital inscription from Dull Church, Perthshire, drawing by I. G. Scott.

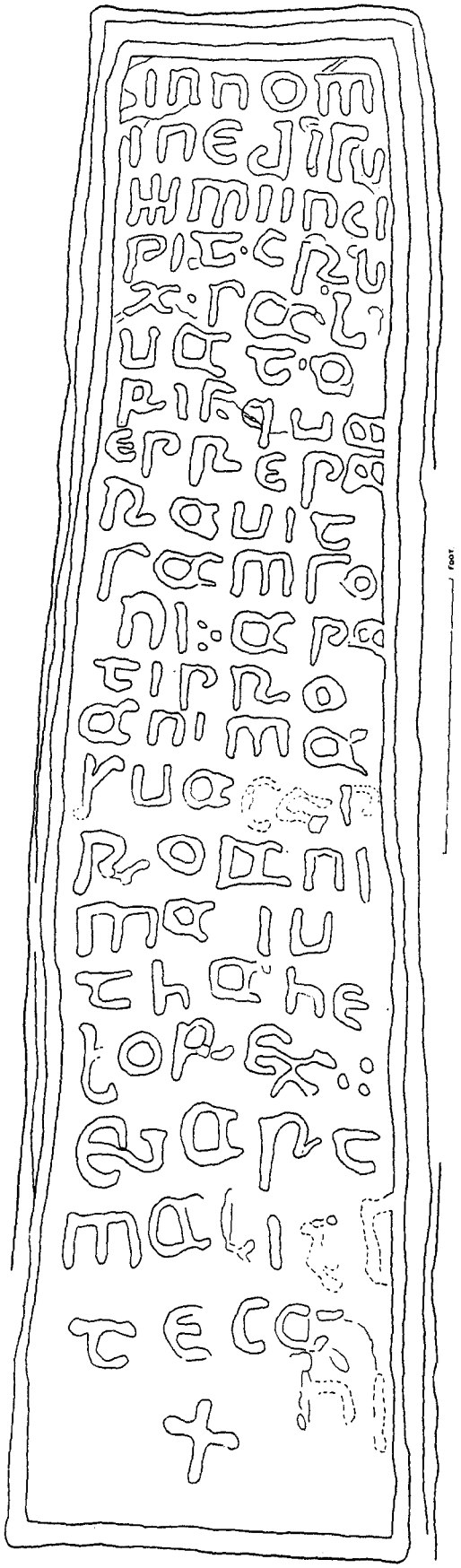
I·G·S·'03

10: 2. The fish-tail line-ends of the Lethnott inscription, enlarged from the block in ECMS.

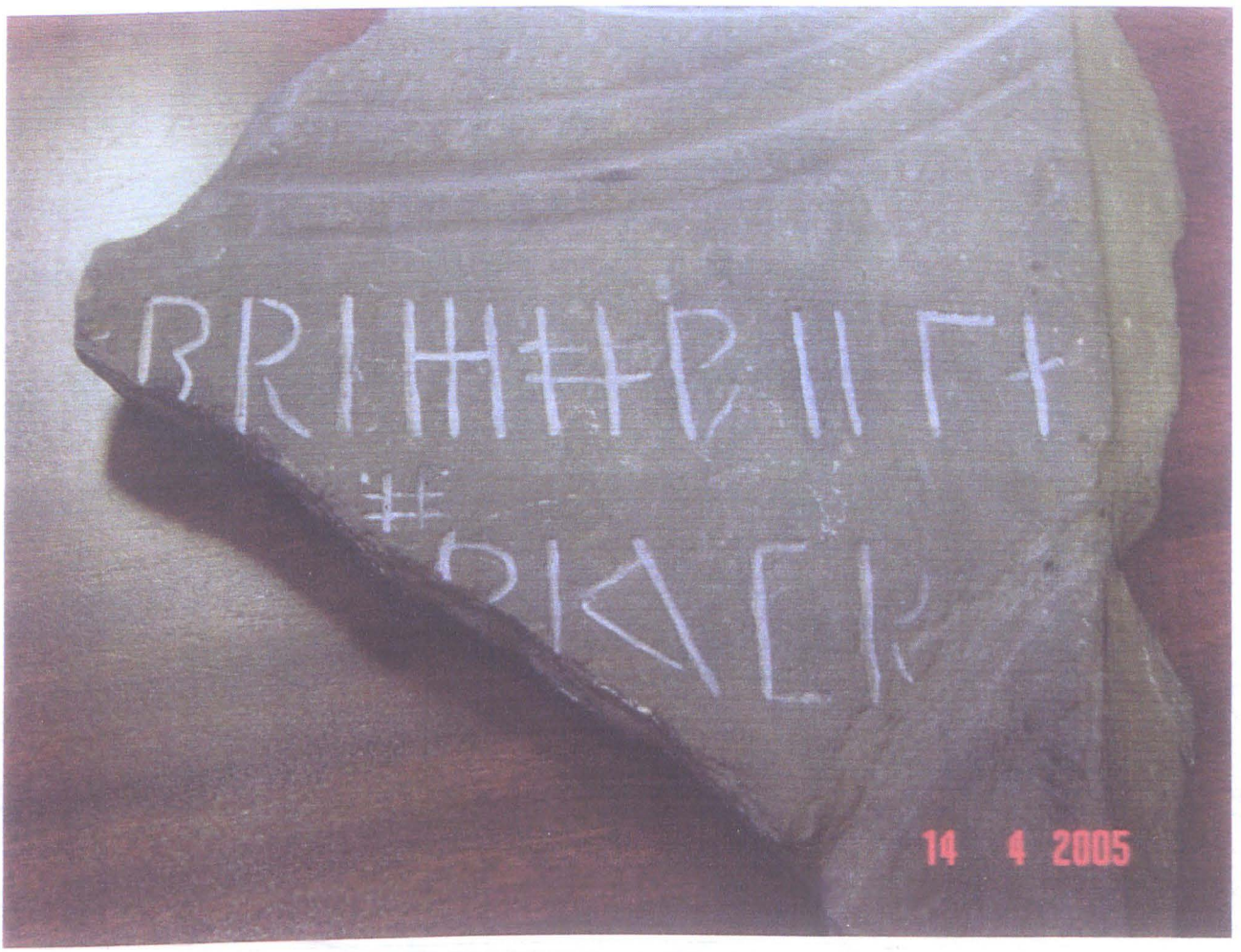
10: 3. The Tarbat inscription, drawn by J. Higgitt.

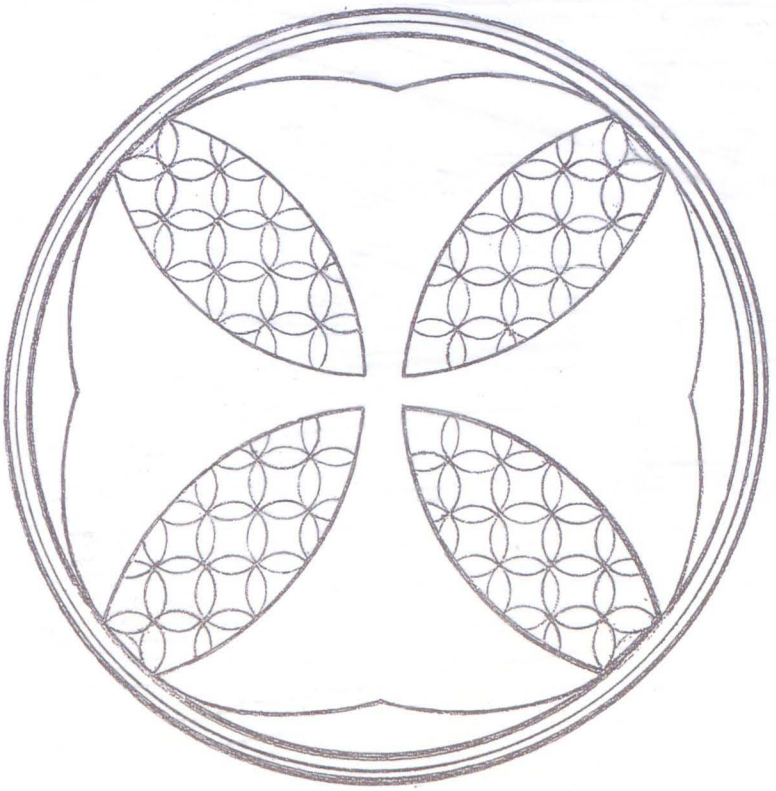


10: 4. The Abbot Samson cross inscription, drawn by Nash-Williams.

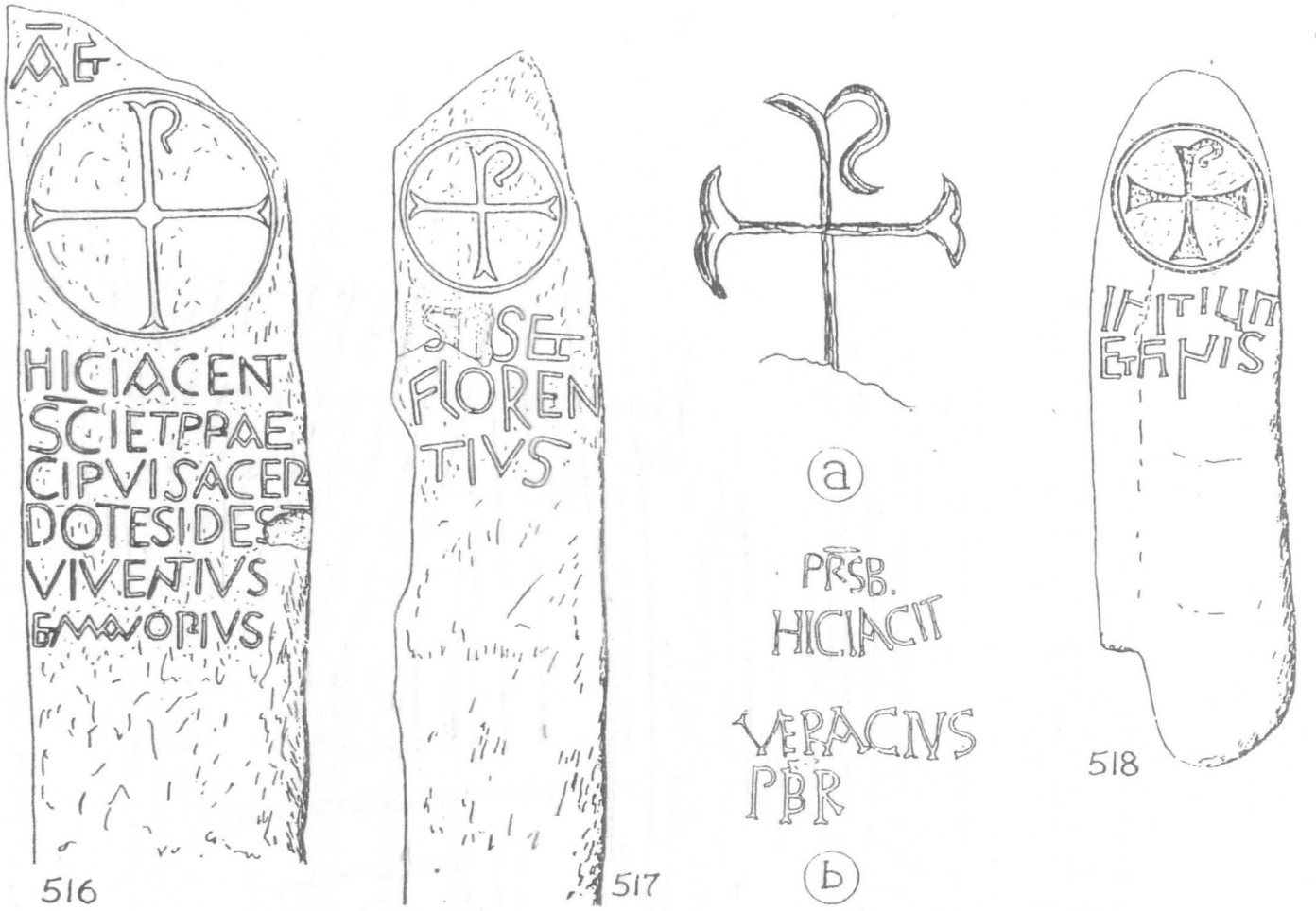


10: 5. The Nendrum inscription, fragments: A, the display capitals, and B, the decorative device.





10: 6. The *Cummene* and *Ladcen* inscription, after ECIM.



10: 7. Three Kirkmadrine, Galloway inscriptions contemporary with the ECMW Group I period, showing early association of boxed letterforms and compounds employing half-size letters with the Greek letters of the *chi-rho* and the *alpha* and *omega* symbols. After Charles Thomas. The latest, CIIC 518, is dated to *c.*600.

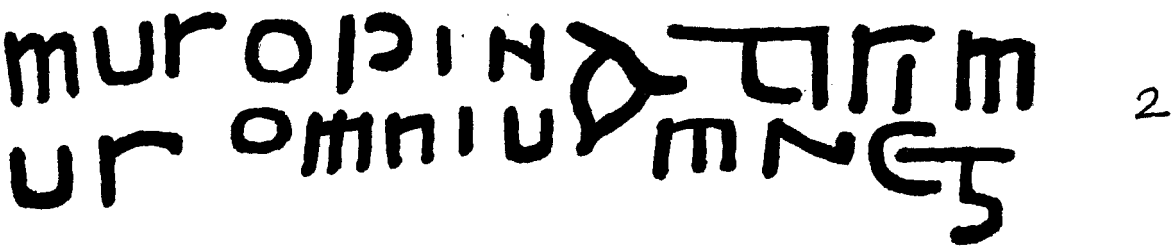
10: 8. Isle of Man, Kermode's drawing of Maughold 27.

10: 9. Comparative diagram of geometric letters in stone and in manuscript:

10: 10. Four types of angular letter in epigraphy:

1

1. minuscule 'h' in ECMW 316, and minuscule 'h' and footed 'T' in ECMW no. 305.



2

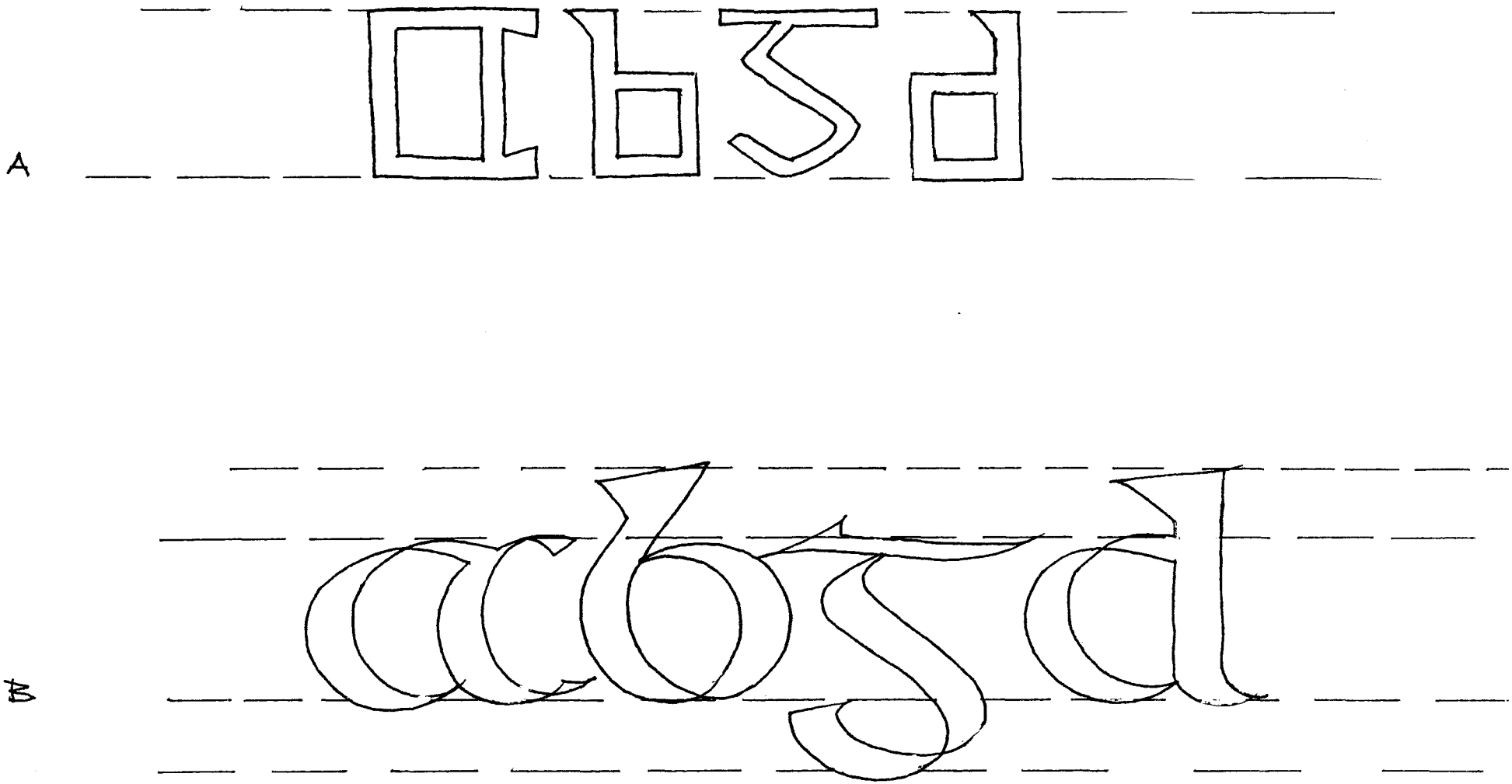
2. Footed 'T' minuscule 's', three-barred 'm' in ECMW no.13.

3

3. Fishtail serifs, minuscule diamond-bodied 'd', three bar 'm', and Type C 'E' and 'C' in the Lethnott inscription, Forfarshire.

4

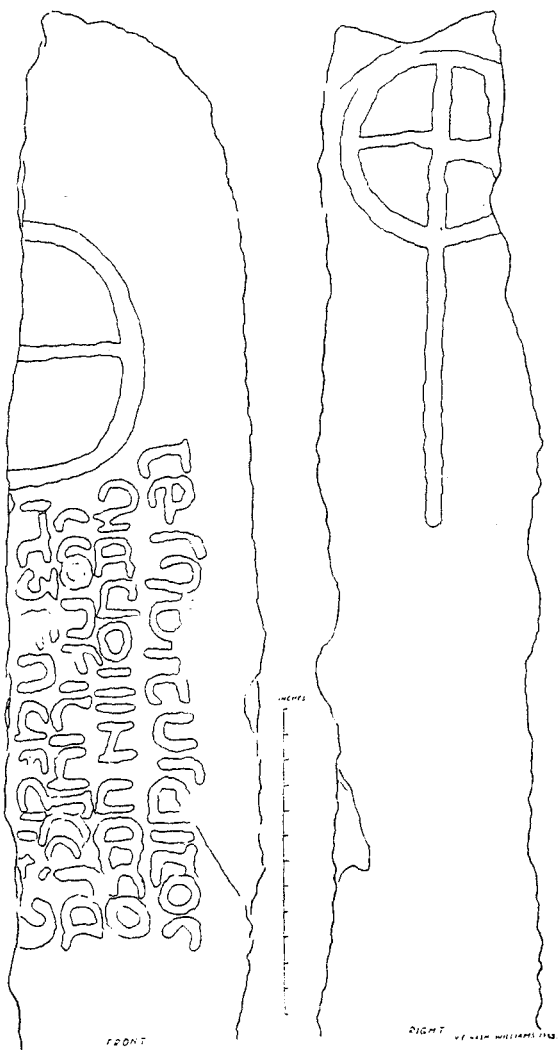
4. Angularised minuscule 'g', 'r', 'm', 'b' and 's' in ECMW no. 301.and minuscule boxed 'e' with geometric display 'N' in ECMW no.133.



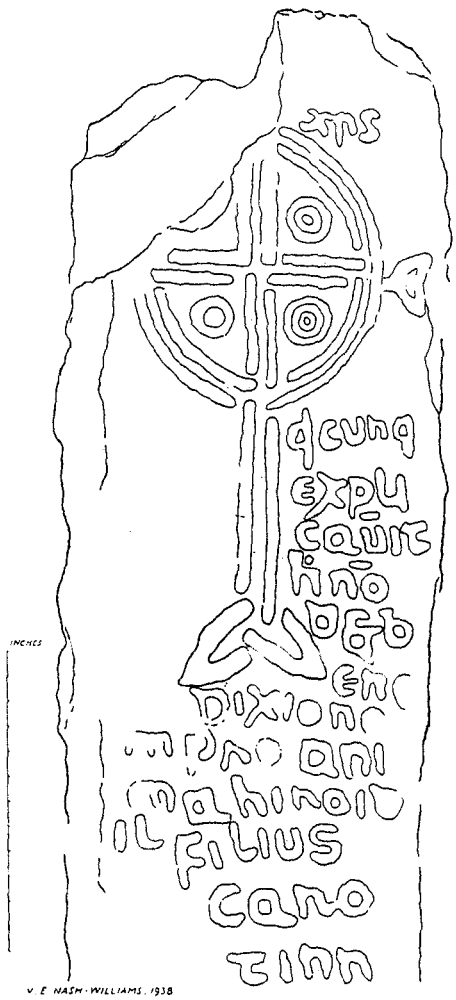
10: 11. Diagram showing A, a two-line layout, and B, a four-line layout.

10: 12. The Llanllŷr inscription, ECMW no. 124.

10: 13. The Llanwnnws inscription. ECMW no. 125.



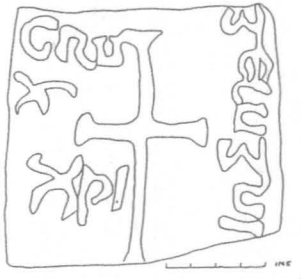
No. 124.



No. 125.

10: 14. The *Tome* inscription at Port Talbot. ECMW no. 259.

No. 259 (inscription).



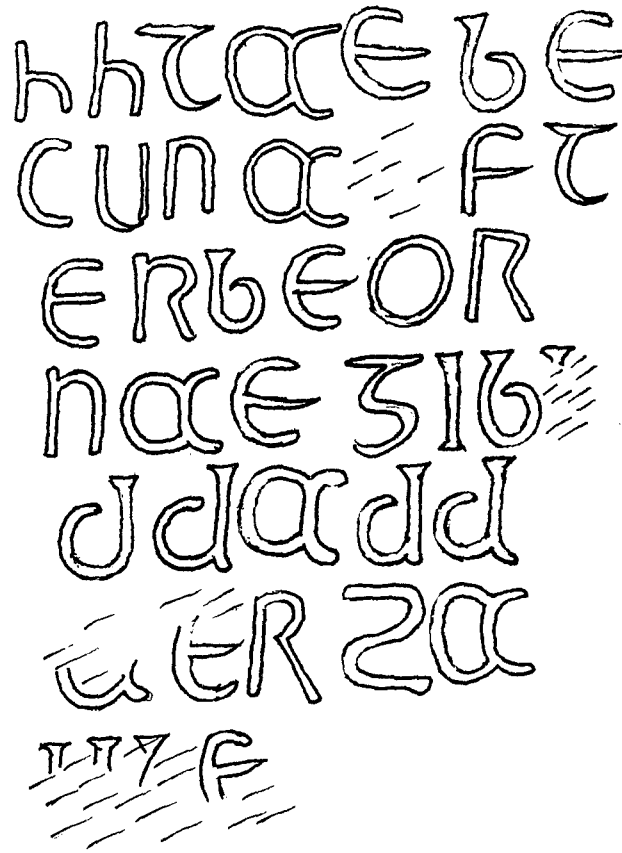
No. 260.

A

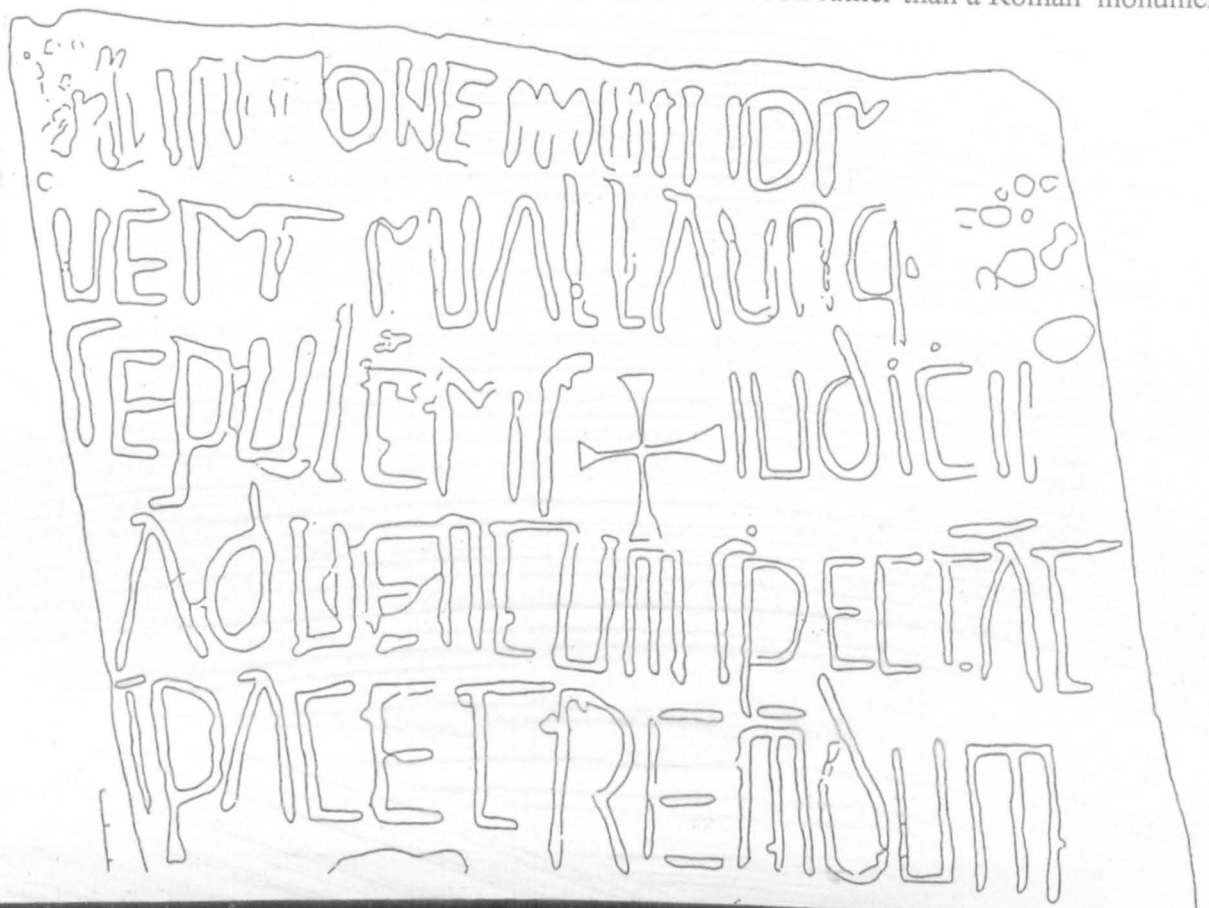
B

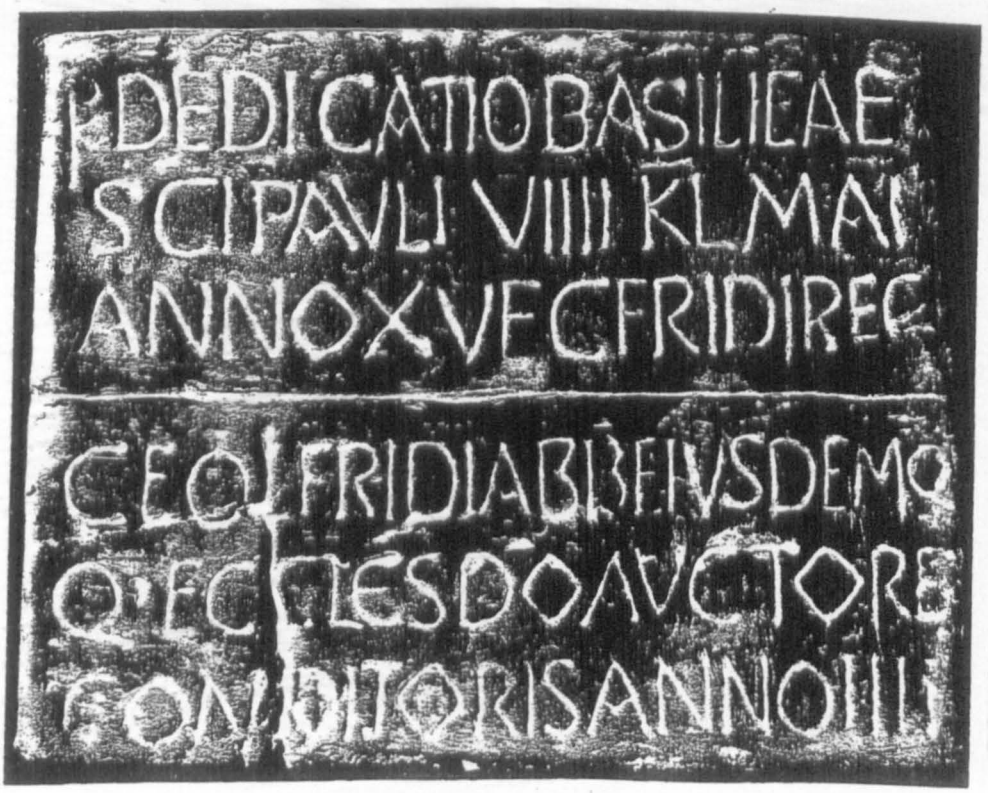
10: 15A. The *Geligui* inscription at Port Talbot, ECMW no. 260, with B, a painted version of the *crux christi* made with an elder-stem pen that functioned on a stone surface as well as sugar paper.

10:16A. Anglo-Saxon mixed-alphabet inscription Dewsbury I, Okasha no. 30; 10:16B, Anglo-Saxon mixed-alphabet section from Falstone, Okasha no.39, from a bi-alphabetic inscription in Anglo-Saxon and Runic.



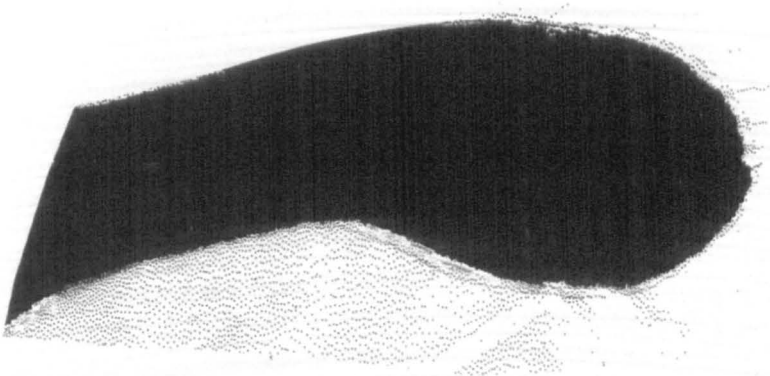
10: 17A. The Llanlleonfel inscription, ECMW no.62, compared to the St Paul's Jarrow dedication slab, 10:17B, Okasha 61. Equally ambitious, the Roman-style letters of the St Paul's inscription contrast with the freer mixed-alphabet composition of the Llanlleonfel design. The core of forms of the latter, with their oblong-based U, P, C, M, S and T, their angularised minuscule 'r' and 's' create a monumental effect that is utterly different to the Jarrow inscription. It uses manuscript contractions and emerges from a book-using milieu that has taken its monumental letter models from a vernacular book rather than a Roman monument.



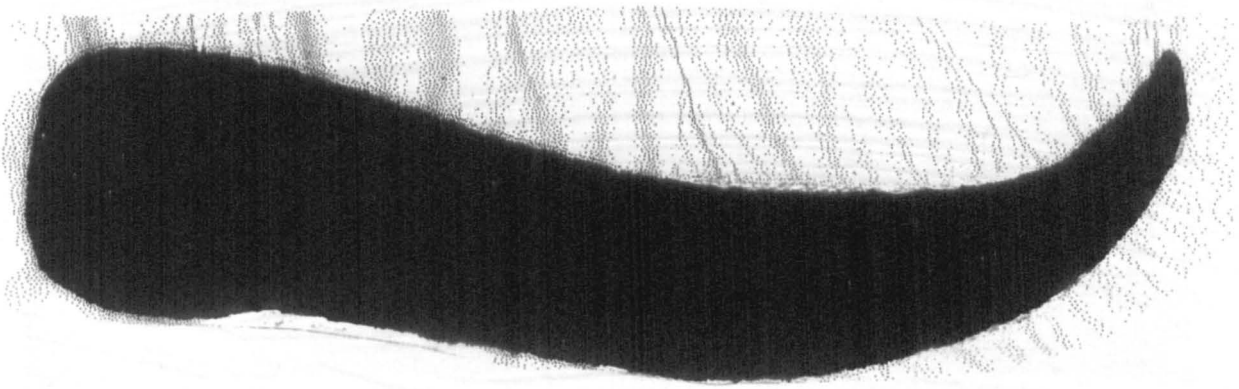


Appendix 1. Practical experiments.

1. To show brush lettering on stone, and the effect of 1. Rolling the brush into a stroke-entry 2.Lifting off the brush, as the stroke is pulled, to acheive a thinning 'tail' 3. Brushed letters on a poor-surfaced Pennant sandstone showing rolled entry into 'l' and the effect of halting the stroke with the stock in full contact with the surface, at the finish of the 'e' bow and the 'eg' ligature bar, producing the clotting of paint that gives a lobed line-end.



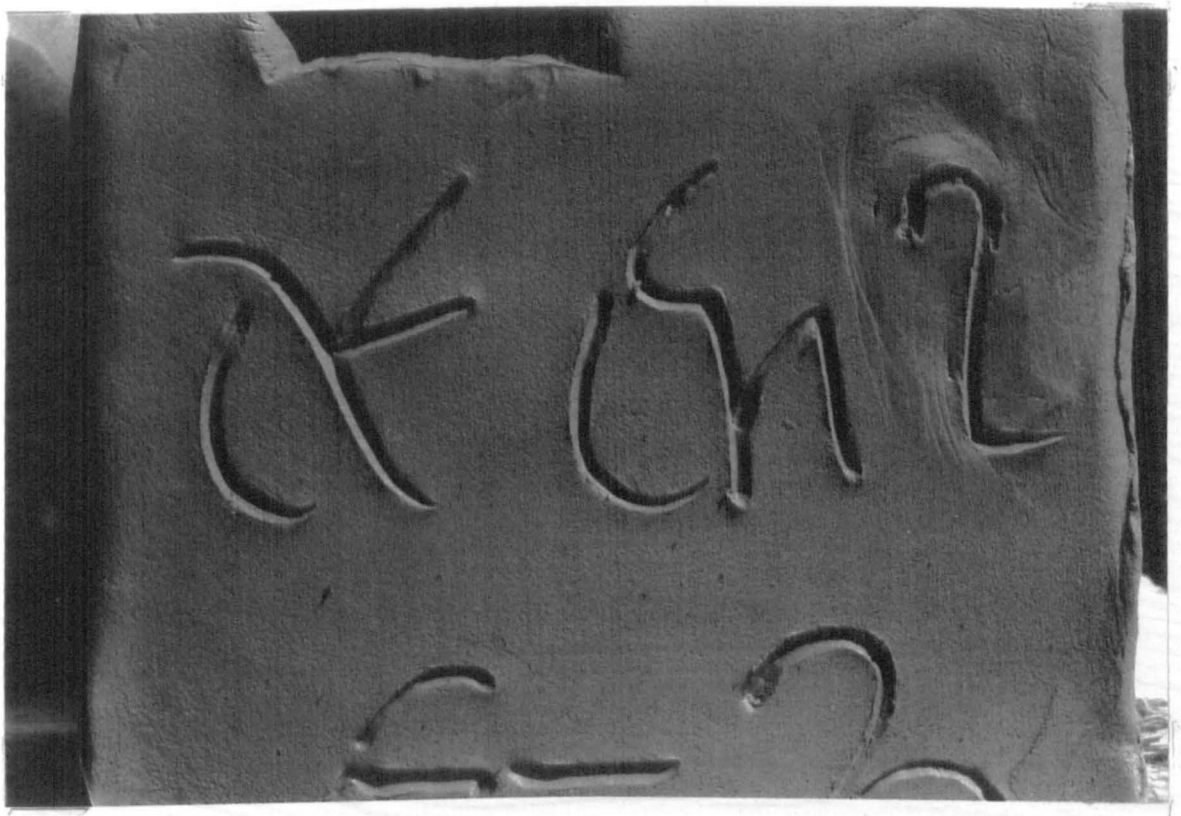
1



2

3

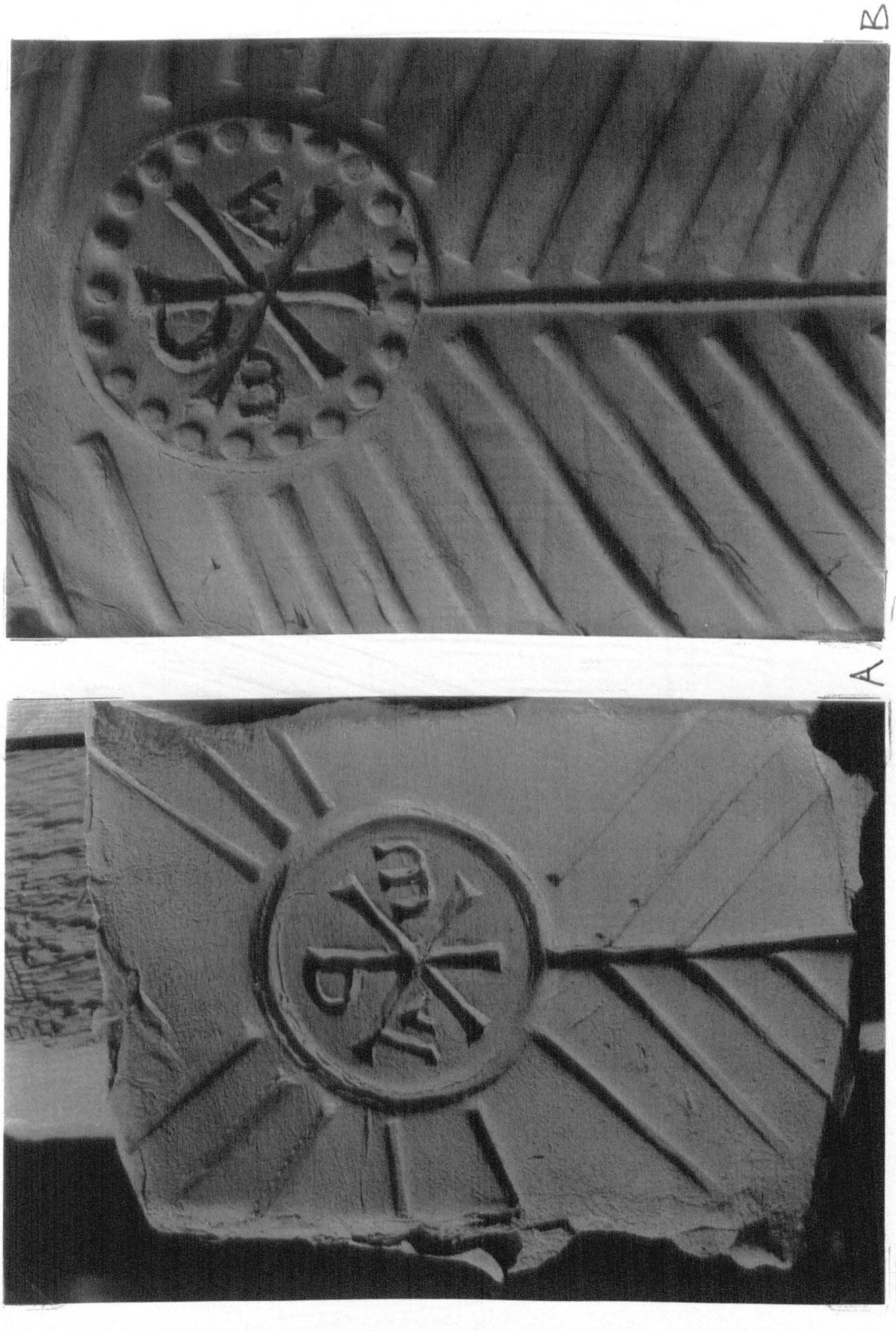
2. Light cursive letters written with a stylus in clay, showing the effect of stylus writing in wax. Looped entries are freely made. 1. Shows the ligaturing of 'e' and the square-footed turn out of the 'l' which is a feature of Rustic written with a stylus. 2. Showing the extent to which curved strokes may be thrown with ease, in the 'b', and the 'ec' ligature which we find transferred to stone in the period before the establishment of a canonical half-uncial.



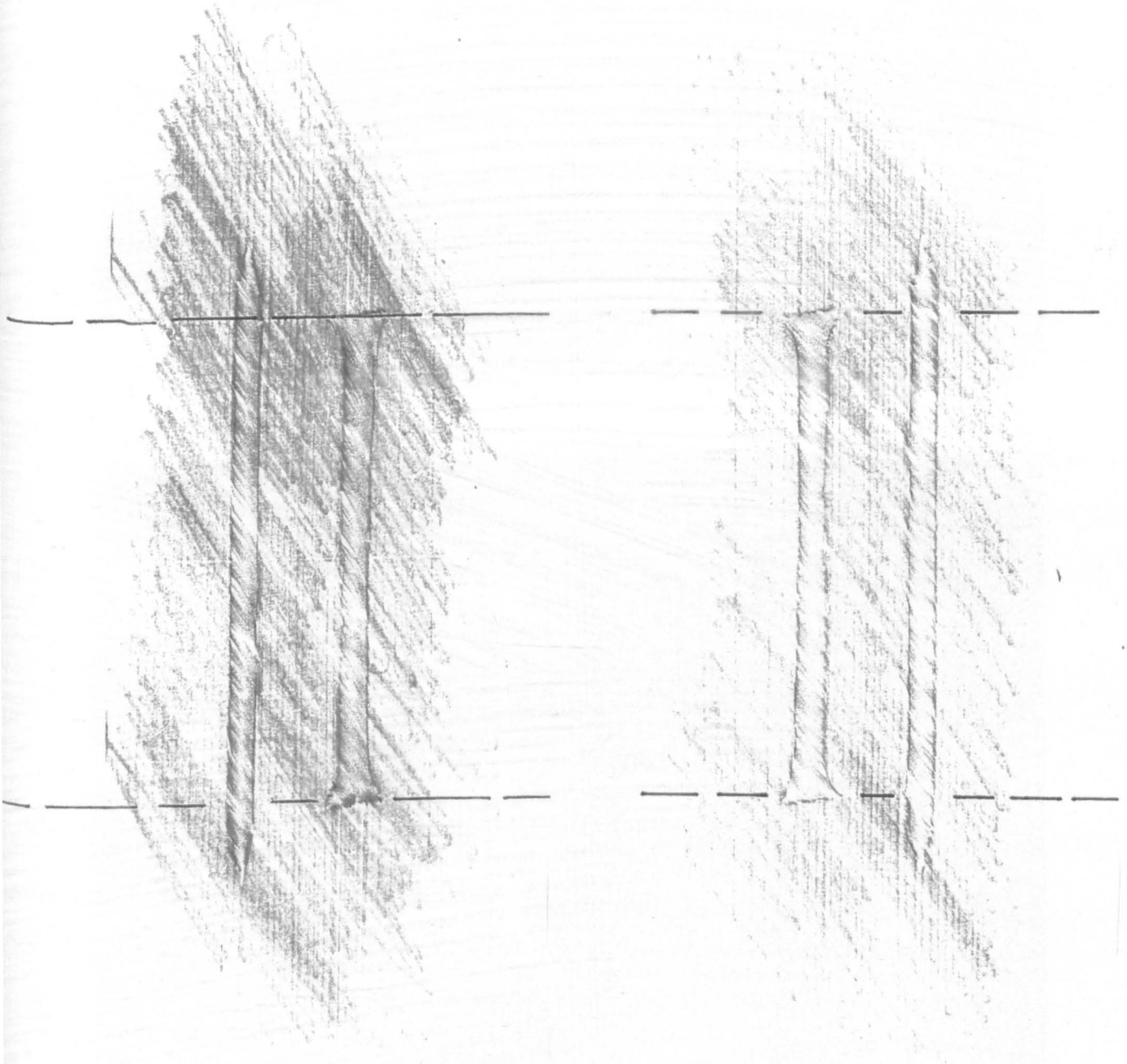
1

2

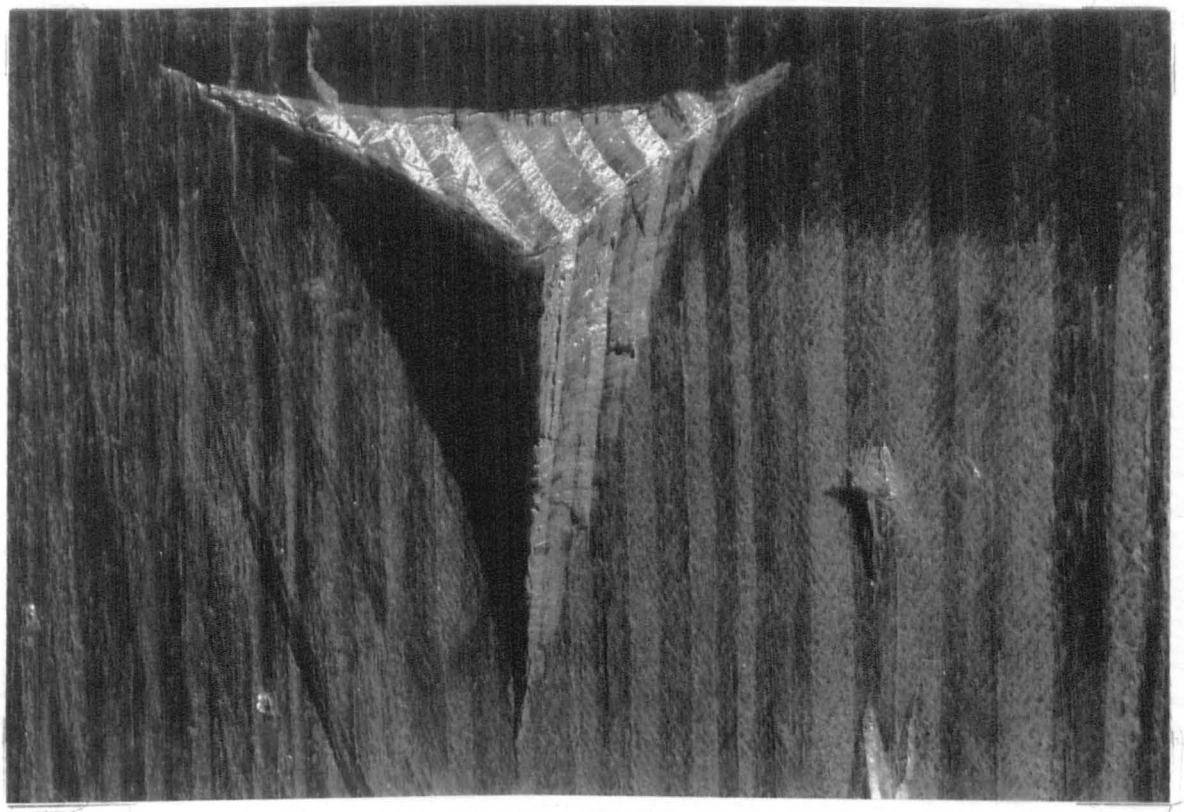
3. Replica votive plaques cut in clay with a chip-carving knife. Once hard it was possible to make foil impressions from the surfaceof the clay. A.The alpha shows a different solution to the avoidance of a straight bar joining the diagonals. B. The common solution of angle-bar alpha is shown in this example.



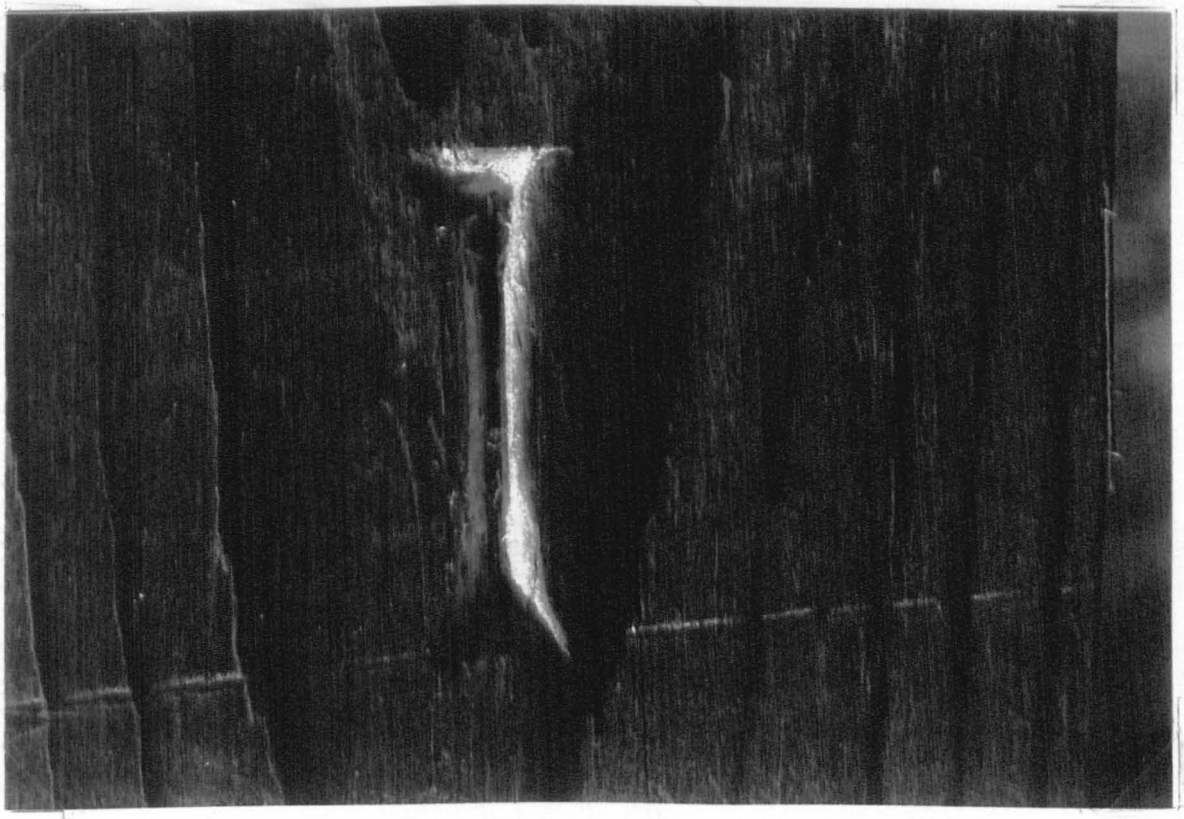
4. Rubbings of two examples of the letter 'I', cut in seasoned oak on vertical grain, once with a stop at each end and once without stops. On a three inch letter, such as this, if the downstroke was not provided with stops, then the stroke ripped up the grain of the wood by about half an inch in each case.



5. Line endings knife-cut in wood. 1. Well seasoned fine-grain pine showing the kind of pyramidal stop used by woodcarvers such as that found on the Lemanaghan bog staff. 2.Poor quality softwood showing simple angled stops with a curved cut into the downstroke from each end.

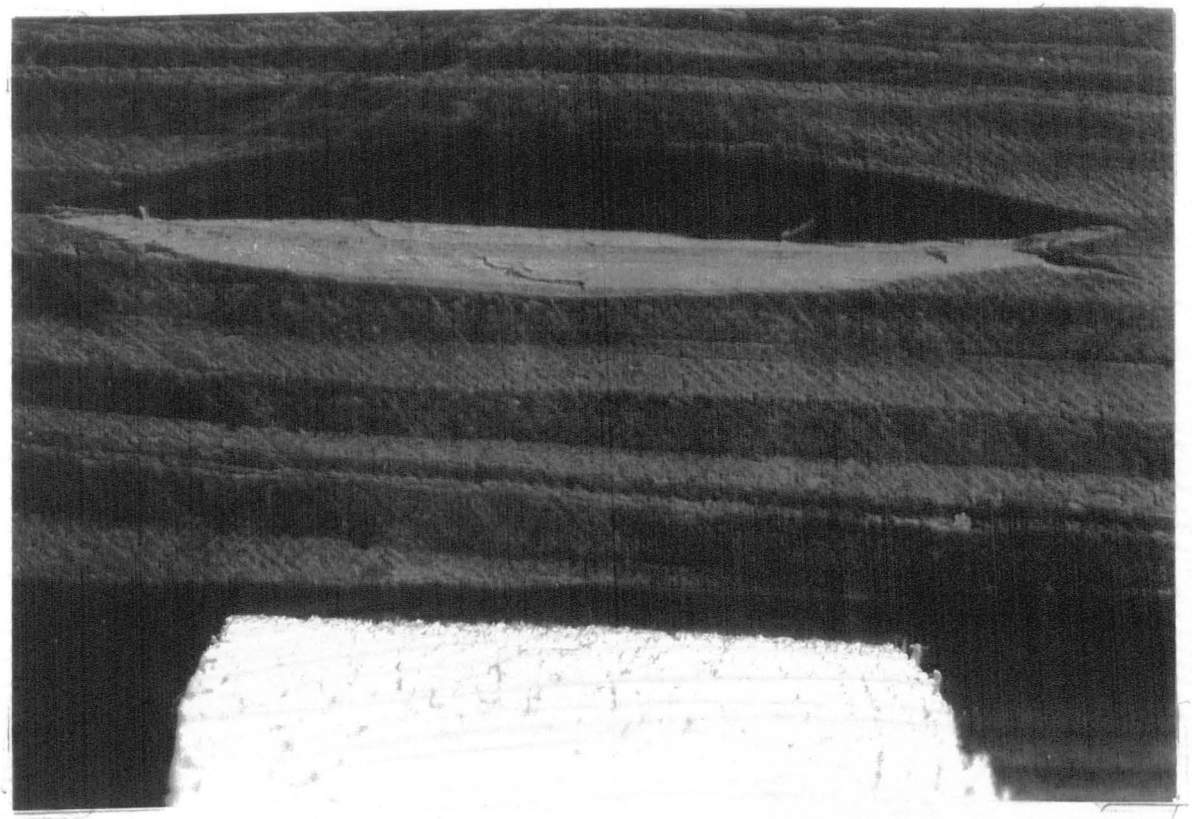


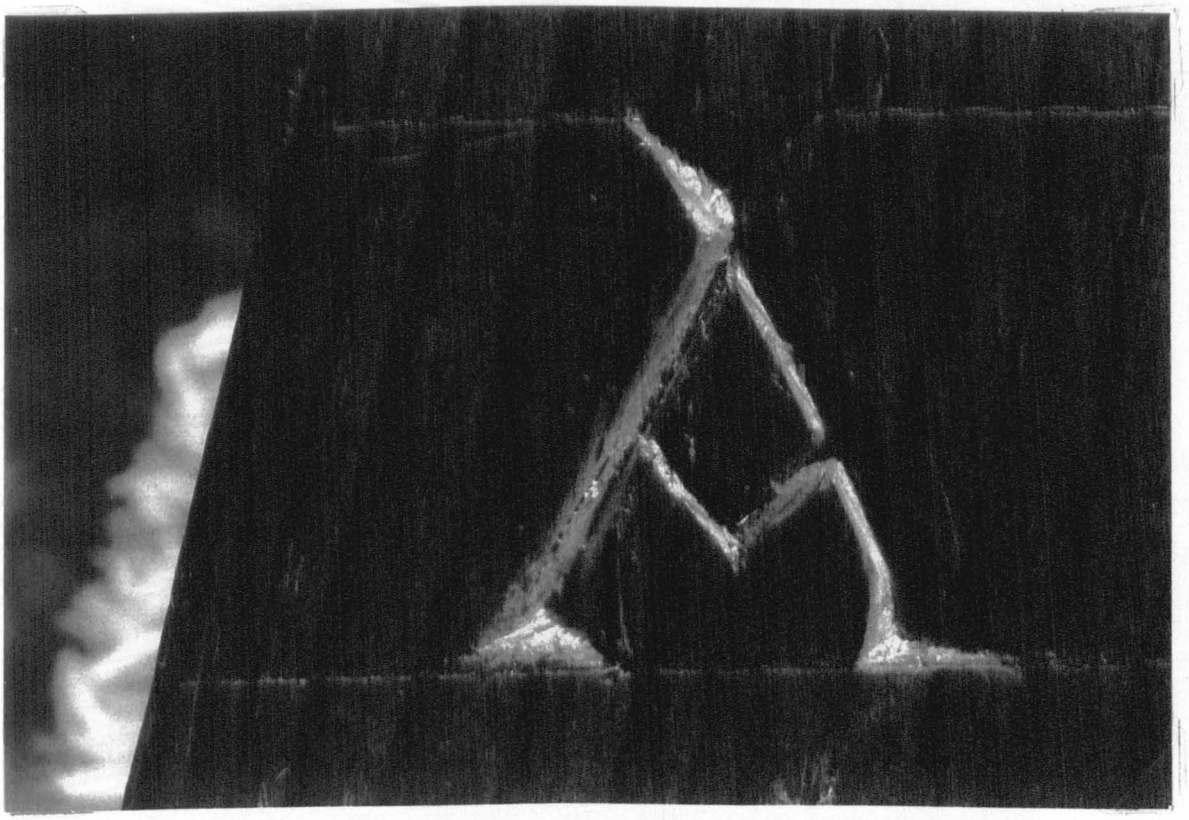
1



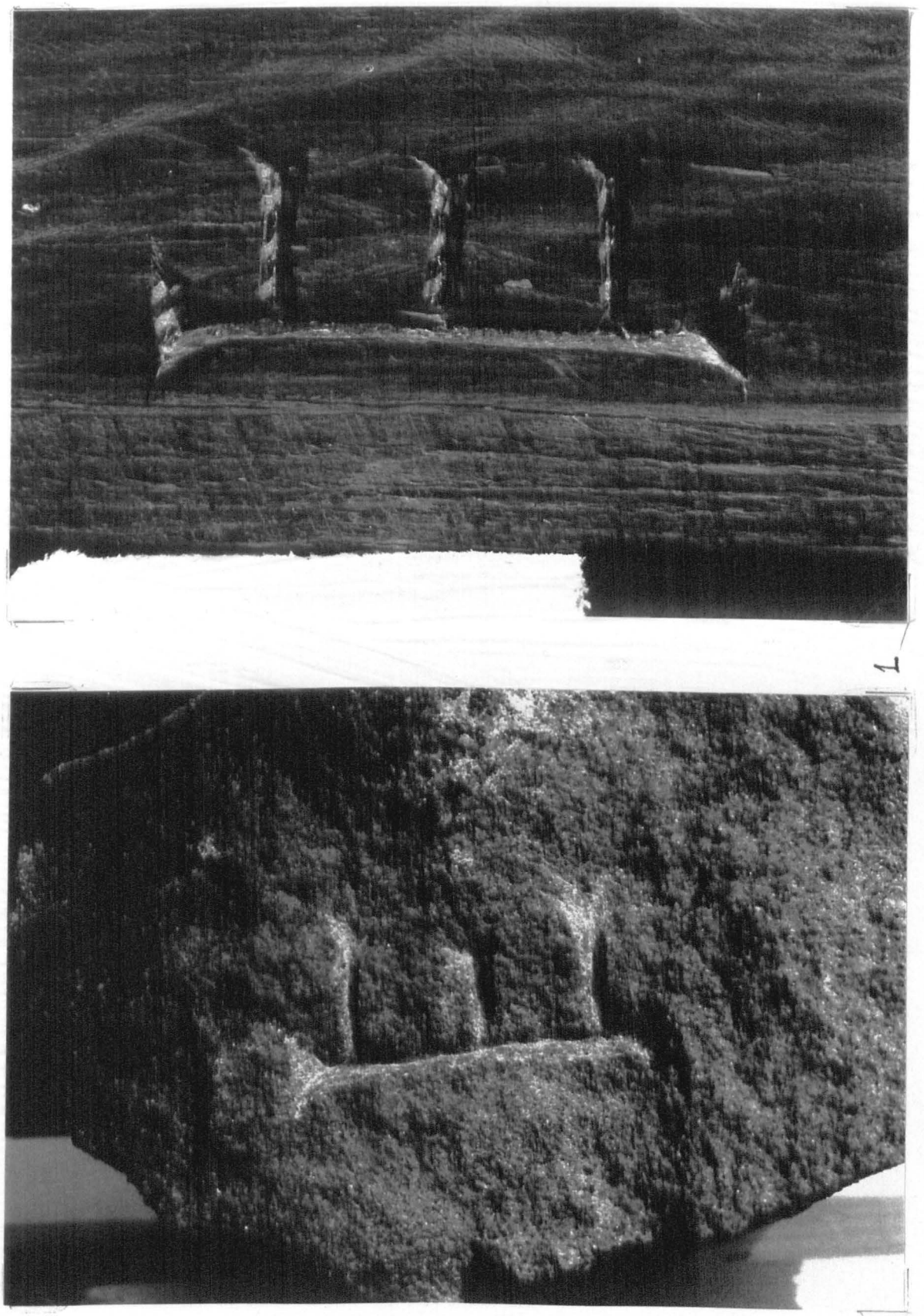
2

6. A.. Lentoid bar chip-carving knife-cut in pine. B. Angle-bar A chip-carving knife-cut in softwood.

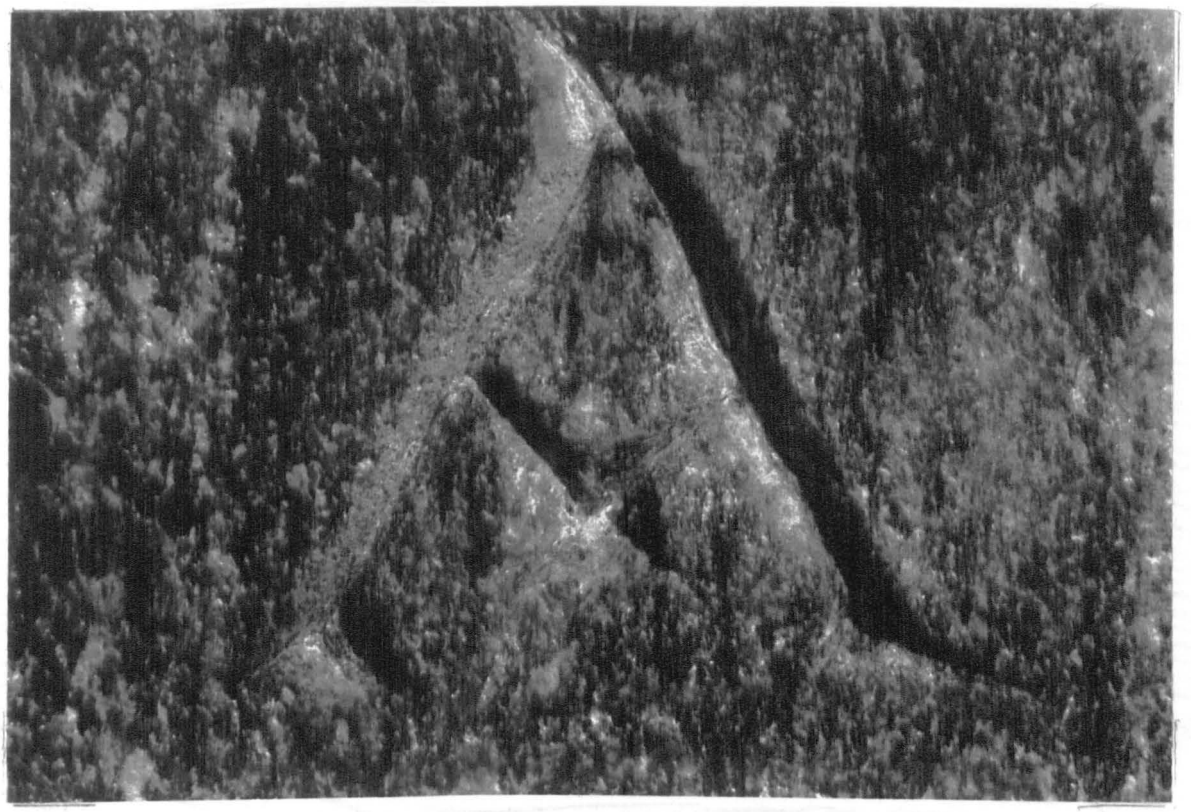




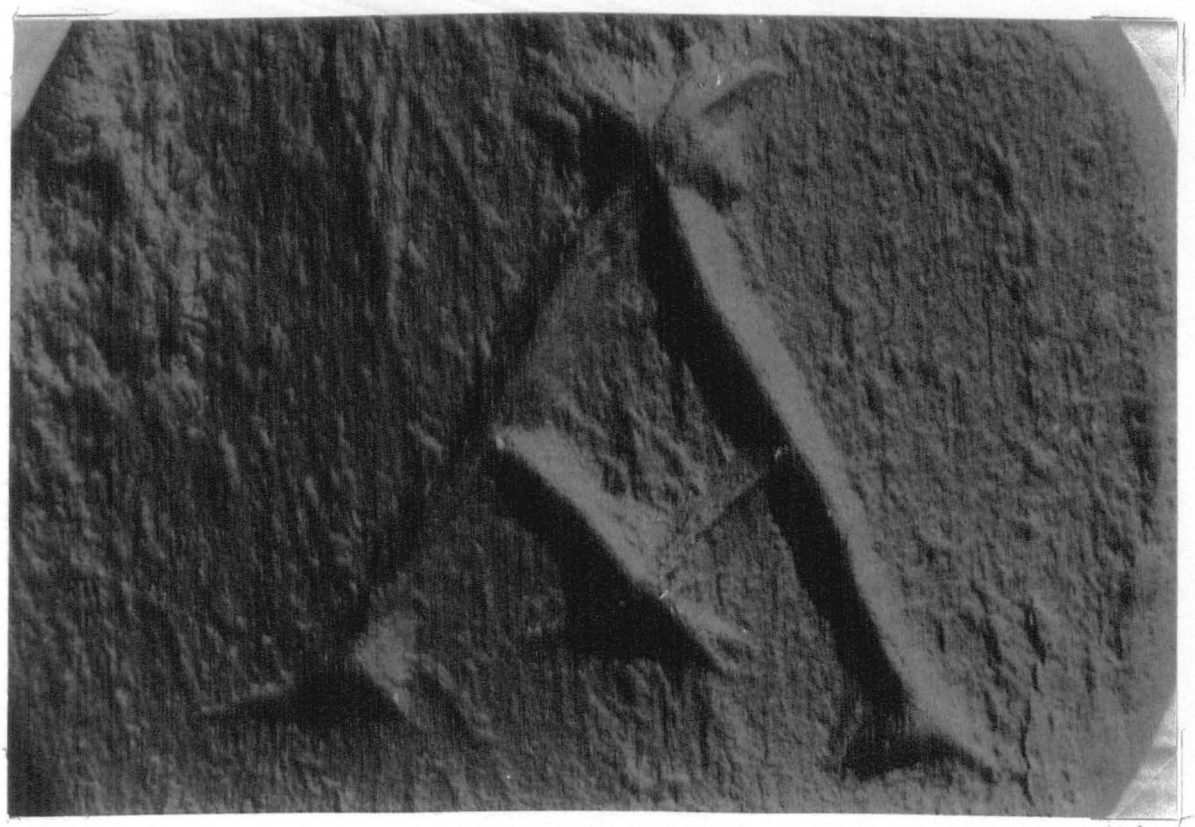
7. Letter 'E' shown cut in 1. Quarella stone, to demonstrate the advantage of isolating the serifs from the secondary strokes. 2. Cut in pine down the grain, showing the sharpness of cut across the grain, and the relative softness down it.



8. A. Letter 'A' knife-cut in steatite (Shetland soapstone), showing the clean detail possible without chisel work B. Showing a well-defined impression from the above in clay.

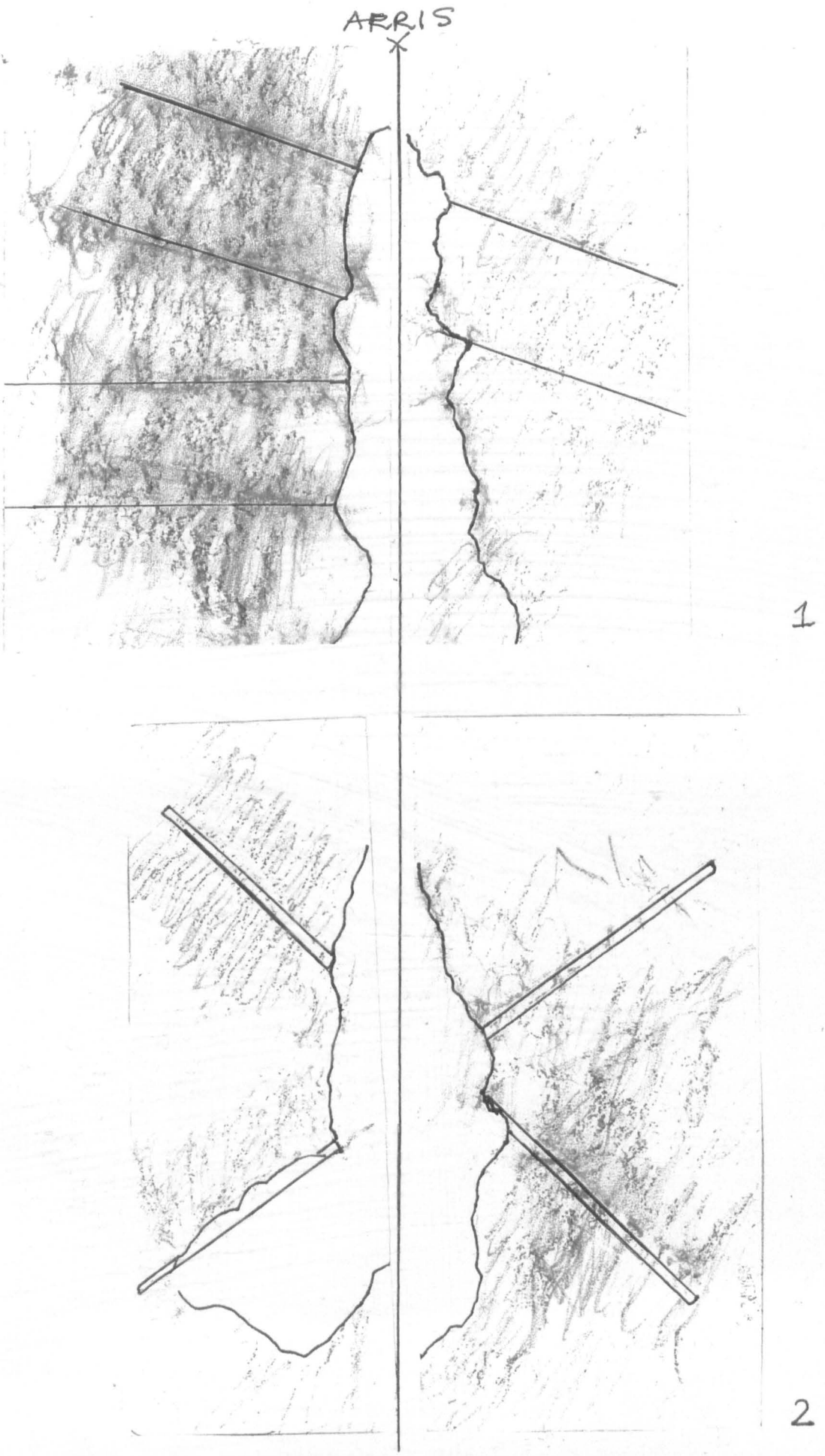


A



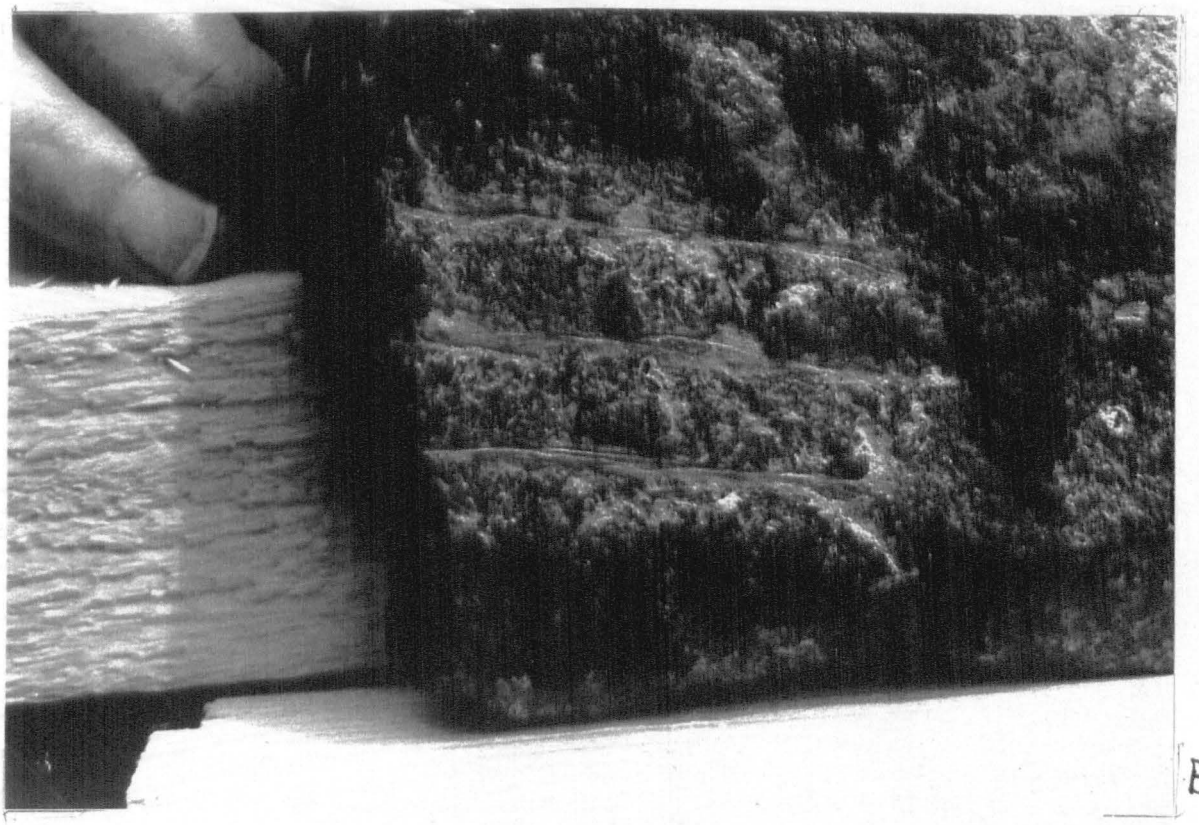
B

9. Rubbing from an ogham inscription in Sutton stone, showing 1. the destruction of the arris, rendering the ogham illegible when strokes are hammered right up to the edge. 2. An 'X' shaped ogham character with the diagonals intersecting on the arris, showing similar destruction.



10. Experimental ogham characters in A. Sutton stone made by scoring rather than chiselling, resulting in less destruction of the arris. B. Three ogham strokes taken to the edge of an adamantine whinstone, made by violent chiselling. It was not possible to damage the arris.

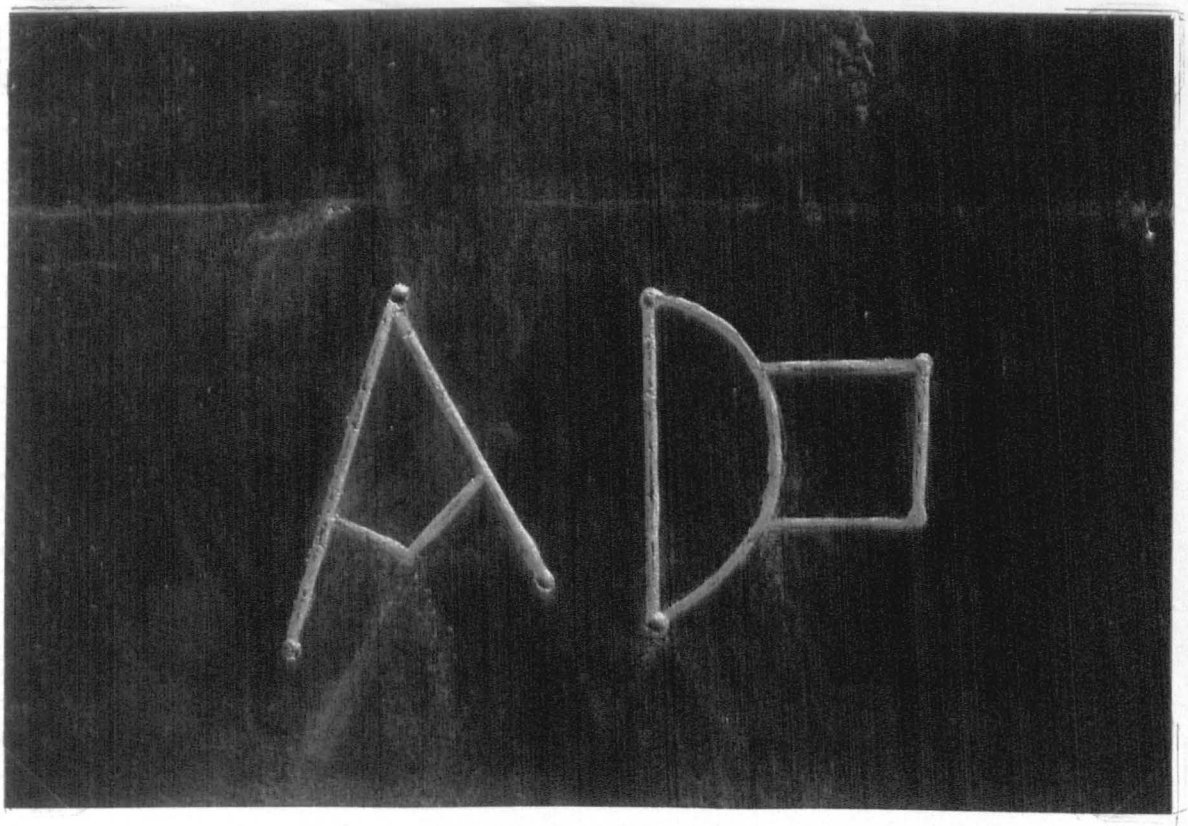
A



B

11. Letters made using the bore and score technique, replicating the Brittany 'Beladore' inscription.1. Isle of Man shaley slate. The surface of this stone makes it necessary to mark the ends of the letterform first, to prevent slipping. Boring by drill or awl is an effective method of limiting the scores. 2. The same letters bored and scored in fine quality Bethesda slate.

1



2

12. Letters cut with a round-end chisel in Bloomhill sandstone, from Clonmacnoise, showing the finish possible with a tool that is not sharp-edged. The bifurcated serif in B was made with no spalling at the junction with the bow of 'h'. The angular letters of A were significantly easier and quicker to incise.

A

B