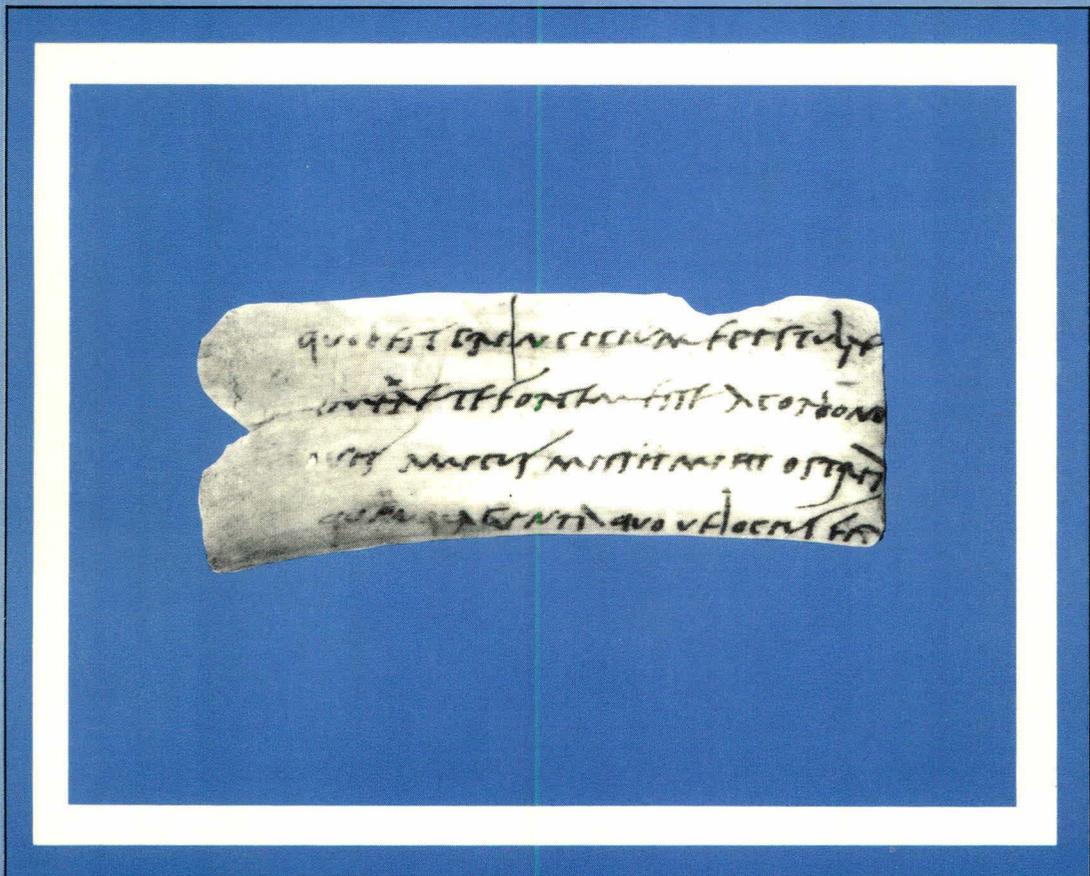


DISPLAY
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VINDOLANDA: THE LATIN WRITING-TABLETS

A. K. BOWMAN AND J. D. THOMAS



BRITANNIA MONOGRAPH SERIES
No.4

Published by the Society for the Promotion of Roman Studies
31 GORDON SQUARE LONDON WC1H 0PP

1983

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VINDOLANDA:
THE LATIN
WRITING-TABLETS

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By

ALAN K. BOWMAN and J. DAVID THOMAS

With Contributions By

J.N. ADAMS and RICHARD TAPPER

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The Vindolanda Trust

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PREFACE

The Vindolanda writing-tablets were discovered during the excavation seasons of 1973–4 and 1974–5. They are now in the possession of the British Museum, which acquired them by purchase in 1981. The long interval between discovery and publication requires a word of explanation. It is due not only to the fact that the editors were hampered by other commitments and by the difficulties inherent in material which is, for the most part, fragmentary and hard to read, but also to the amount of time which had to be devoted to the crucial processes of conservation and photography. In fact, it was not until 1979 that we were satisfied that we had obtained photographs which were the best possible with the techniques currently available. Even so, we are conscious of the possibility of improving our readings and it may be that further experimentation, especially with the stylus tablets, which we have so far been completely unable to read, will produce significant progress. But since there is no firm prospect of such progress, it seems pointless to delay the publication further.

Our debts, both to institutions and to individuals, are profound. First and foremost, we are grateful to the Vindolanda Trust and to the British Museum for putting this material at our disposal for publication. Generous financial support towards the expenses involved in conservation, photography and preparation of the manuscript has been provided by IBM (UK) Ltd., Rank Xerox (UK) Ltd., BP (Chemicals Division) and Kodak Ltd. The expenses of publication have been offset by grants from the Vindolanda Trust, the Administrators of the Haverfield Bequest and the Craven Committee of Oxford University.

Special mention should be made of the debt we owe to our photographic experts, Miss Alison Rutherford of the University of Newcastle-upon-Tyne, and Mr. Eric Hitchcock of University College, London. The fact that these texts can be read and published is due, in no small part, to their skill and patience. We are also indebted to Dr. A.E.A. Werner, Miss S. Blackshaw and Mr. W.A. Oddy who, with the facilities provided by the Research Laboratory of the British Museum, pioneered the technique for conservation of the writing-tablets. We are also grateful to Dr. Richard Tapper for his contribution on the botanical analysis of the tablets (incorporated in Chapter 1, Sections C and D), to Dr. J.N. Adams for contributing Chapter 5 on the language of the tablets, and to Professor Sheppard Frere for his help and advice in preparing this book for publication as a Britannia monograph.

Many scholars have contributed in various ways to improving our readings and interpretations of the texts. The sources of many such suggestions are acknowledged in the notes and we apologise for any which have accidentally been overlooked. Many helpful suggestions arose in the course of the seminars and lectures which we have been invited to give at, amongst other places, the Institute of Classical Studies (London), The Queen's College (Oxford), the Triennial Meeting of the Hellenic and Roman Societies (Oxford, 1975), the Universities of Trier, Kiel and Cologne, the University College of Wales at Aberystwyth, St. Andrews University and the Institute for Advanced Study (Princeton). To the latter institution Dr. Bowman is particularly grateful for a Visiting Membership in 1976 which enabled him to work on the tablets without

distraction and in the most congenial of surroundings; Dr. Thomas is similarly grateful to Wolfson College, Oxford, for electing him to a Visiting Fellowship in 1981.

Individual scholars to whom special thanks are due are: Professor Eric Birley, Mr. R.E. Birley, Professor A.R. Birley, Professor T. Julian Brown, Dr. Hannah Cotton, Professor J.F. Gilliam, Mr. Mark Hassall, Professor G.D.B. Jones, Dr. John Rea, Mr. J. Summerby, the late Professor Sir Eric Turner, Dr. Judith Turner, Dr. Michael Winterbottom and Mr. Richard Wright. To all these, and to the many others who also helped us, we are grateful for rendering this publication less imperfect than it would otherwise have been.

Acknowledgements are due to Mr. R.E. Birley for permission to reproduce Figs. 1-4; to the Vindolanda Trust and the Department of Photography, University of Newcastle upon Tyne for the plates of Tablets nos. 5, 10, 25, 38, 43, 45, 50, 62, 85, 86, 88 and to Mr. E. Hitchcock, of the Department of Photography, University College, London for the remainder; and to Mr. Andy Reid for the line drawing which is reproduced as Plate XV.

As a convenient abbreviation for citing the Vindolanda texts we suggest the form *Tab. Vindol.*

A.K. BOWMAN
J.D. THOMAS

November, 1982

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LIST OF ABBREVIATIONS

Papyrological publications are cited by the abbreviations given in E.G. Turner, *Greek Papyri, an Introduction* (2nd ed., 1980), pp. 159–79.

Other abbreviations are as follows:

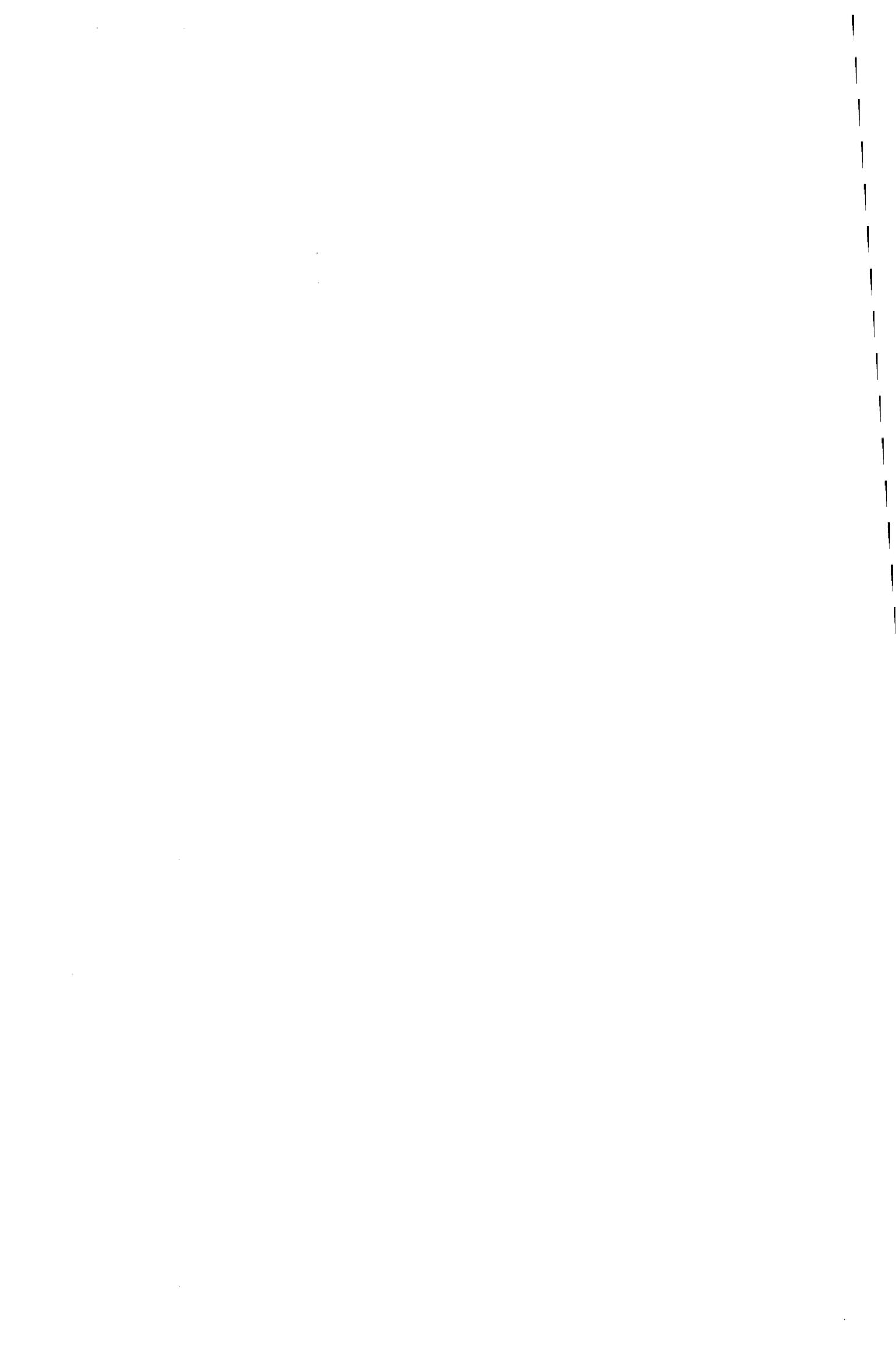
Adams, <i>VLLCT</i>	J.N. Adams, <i>The Vulgar Latin of the Letters of Claudius Terentianus</i> , <i>P.Mich.VIII</i> , 467–72 (1977)
<i>AEHE</i>	<i>Annuaire de l'Ecole pratique des Hautes Etudes</i>
<i>AJA</i>	<i>American Journal of Archaeology</i>
<i>AJP</i>	<i>American Journal of Philology</i>
André, <i>ACR</i>	J. André, <i>L'alimentation et la cuisine à Rome</i> (1961)
<i>ANRW</i>	H. Temporini, W. Haase (edd.), <i>Aufstieg und Niedergang der römischen Welt</i> (1972–)
<i>Arch. Aeliana</i>	<i>Archaeologia Aeliana</i> (Society of Antiquaries of Newcastle upon Tyne)
<i>Arch. Journ.</i>	<i>The Archaeological Journal</i>
<i>BASP</i>	<i>Bulletin of the American Society of Papyrologists</i>
<i>BICS</i>	<i>Bulletin of the Institute of Classical Studies</i>
Birley, <i>PRB</i>	A.R. Birley, <i>The People of Roman Britain</i> (1979)
Birley, <i>FRB</i>	A.R. Birley, <i>The Fasti of Roman Britain</i> (1981)
Birley, <i>RBRA</i>	E. Birley, <i>Roman Britain and the Roman Army</i> (1953)
Birley, <i>Vindolanda</i>	R.E. Birley, <i>Vindolanda. A Roman Frontier Post on Hadrian's Wall</i> (1977)
<i>BJ</i>	<i>Bonner Jahrbücher</i>
<i>BMQ</i>	<i>British Museum Quarterly</i>
Bowman-Thomas, <i>VWT</i>	A.K. Bowman, J.D. Thomas, <i>The Vindolanda Writing Tablets</i> (1974)
<i>BRGK</i>	<i>Bericht des römisch-germanischen Kommission</i>
Casamassima-Staraz, <i>SC</i>	E. Casamassima, E. Staraz, 'Varianti e cambio grafico nella scrittura dei papiri latini', <i>Scrittura e Civiltà</i> 1 (1977), pp. 9–110
<i>CE</i>	<i>Chronique d'Egypte</i>
Cencetti, <i>NP</i>	G. Cencetti, 'Note paleografiche sulla scrittura dei papiri latini dal I al III secolo d.c.', <i>Memorie dell'Accademia delle scienze dell'Istituto di Bologna. Classe di scienze morali</i> V.1 (1950) [publ. in 1951], pp. 3–54
<i>ChLA</i>	<i>Chartae Latinae Antiquiores</i> ; ed. A. Bruckner and R. Marichal
<i>CIL</i>	<i>Corpus Inscriptionum Latinarum</i>
<i>CIS</i>	<i>Corpus Inscriptionum Semiticarum</i>
<i>CJ</i>	<i>The Classical Journal</i>
<i>CLA</i>	<i>Codices Latini Antiquiores</i> ; ed. E.A. Lowe

- Cotton, *DLR* H. Cotton, *Documentary Letters of Recommendation in Latin from the Roman Empire* (*Beiträge zur Klassischen Philologie* 132, 1981)
- CP* *Classical Philology*
- CPL* *Corpus Papyrorum Latinarum*; ed. R. Cavenaile (1958)
- CQ* *Classical Quarterly*
- CRAI* *Comptes rendus de l'Academie des Inscriptions et Belles-Lettres*
- CW* *Cumberland and Westmorland Antiquarian and Archaeological Society. Transactions*
- Devijver, *PME* H. Devijver, *Prosopographia militiarum equestrium quae fuerunt ab Augusto ad Gallienum* (*Symbolae*, Series A, 3, 1976)
- Domaszewski-Dobson, *RRH*² A. von Domaszewski, B. Dobson, *Die Rangordnung des römischen Heeres* (2nd ed., 1967)
- Gradenwitz, *LVL* O. Gradenwitz, *Laterculi vocum latinarum* (1904)
- A. Holder, *AS* A. Holder, *Altceltische Sprachschatz* (1896–1913)
- P. Holder, *AAT* P.A. Holder, *Studies in the Auxilia of the Roman Army from Augustus to Trajan* (*British Archaeological Reports, International Series* 70, 1980)
- IEJ* *Israel Exploration Journal*
- ILS* H. Dessau, *Inscriptiones Latinae Selectae*
- Jackson, *LHEB* K.H. Jackson, *Language and History in early Britain* (1953)
- JAOS* *Journal of the American Oriental Society*
- JEA* *Journal of Egyptian Archaeology*
- JRS* *Journal of Roman Studies*
- Kajanto, *LC* I. Kajanto, *The Latin Cognomina* (1965)
- Lauffer, *DP* S. Lauffer, *Diokletians Preisedikt* (1971)
- Mallon, *PR* J. Mallon, *Paléographie romaine* (1952)
- Negotia* *Fontes iuris romani anteiustiniani*, III; ed. V. Arangio-Ruiz
- OLD* *Oxford Latin Dictionary*
- PBA* *Proceedings of the British Academy*
- RE* Pauly-Wissowa-Kroll, *Real-Encyclopädie der classischen Altertumswissenschaft*
- REL* *Revue des Études Latines*
- RhM* *Rheinisches Museum*
- RIB* *The Roman Inscriptions of Britain*, I; ed. R.G. Collingwood and R.P. Wright (1965)
- Rivet-Smith, *PNRB* A.L.F. Rivet, C. Smith, *The Place-names of Roman Britain* (1979)
- RMR* R.O. Fink, *Roman Military Records on Papyrus* (*Philological Monographs of the American Philological Association*, No. 26, 1971)
- Roxan, *RMD* M.M. Roxan, *Roman Military Diplomas 1954–1977* (*University of London, Institute of Archaeology, Occasional Publication* 2, 1978)
- Schulze, *LE* W. Schulze, *Zur Geschichte lateinischer Eigennamen* (1933)
- Seider, *PLP* R. Seider, *Palaeographie der lateinischen Papyri* (1972–81)
- Tjäder, *MIöG* J.-O. Tjäder, 'Die Forschungen Jean Mallons zur römischen Palaeographie', *Mitteilungen des Instituts für österreichische Geschichtsforschung* 61 (1953), pp. 385–96
- Tjäder, *NLP* J.-O. Tjäder, *Die nichtliterarischen lateinischen Papyri Italiens aus der Zeit 445–700*, I (*Skrifter utgivna av Svenska Institutet i Rom* 4°, XIX:1 1955)
- TLL* *Thesaurus Linguae Latinae*
- Turner, *RV* E.G. Turner, *The Terms Recto and Verso, the Anatomy of the Papyrus Roll* (*Actes du XV^e congrès internationale de papyrologie*, edd. J. Bingen, G. Nachtergaele, 1^e partie, *Papyrologica Bruxellensia* 16, 1978)

- Väänänen, *LVIP*³ V. Väänänen, *Le latin vulgaire des inscriptions pompéiennes* (*Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin, Klasse für Sprachen, Literatur und Kunst, Jahrgang 1958, Nr. 3, 3rd ed., 1966*)
- Väänänen, *ILV*³ V. Väänänen, *Introduction au latin vulgaire* (*Bibliothèque française et romane, série A, Manuels et études linguistiques 6, 3rd ed., 1981*)
- Watson, *RS* G.R. Watson, *The Roman Soldier* (1969)
- Webster, *RIA*² G. Webster, *The Roman Imperial Army of the First and Second Centuries A.D.* (2nd ed., 1979)
- YCS *Yale Classical Studies*
- ZPE *Zeitschrift für Papyrologie und Epigraphik*

PART I INTRODUCTION





I. ARCHAEOLOGY AND CONSERVATION

A. THE DISCOVERY OF THE WRITING-TABLETS AND THE ARCHAEOLOGICAL CONTEXT

The first of the Vindolanda writing-tablets was discovered in March, 1973, by Robin Birley in the course of his excavation in a deep trench at the south-west corner of the third-century fort at Vindolanda.¹ Birley describes the object as 'two small thin fragments of wood which looked rather like oily plane shavings'. These slivers, when gently prised apart, proved to contain writing on their inner faces but this rapidly began to fade on exposure to the air.² This first example, published below as No. 38, was the forerunner of over two hundred fragments (inventoried as Nos. 1-83) discovered during the excavation season of 1973. The curtailed excavation season of 1974 produced very few further finds but in the following year more extensive digging resulted in the discovery of several hundred more fragments, bringing the inventory numbers up to 202. Although this batch did contain some interesting texts, it is fair to say that the majority of our better tablets come from the finds of the first season.³ Any statement about possible future discoveries can only be speculative, but it does seem very likely that there are considerable numbers of writing-tablets still in the ground in this area of the site. The great expense involved in this operation (both in excavating to the necessary depth and in conserving the finds) makes it difficult to predict when large-scale excavation might be resumed.⁴

The nature of the collection cannot properly be described without some analysis of the archaeological context.⁵ The tablets were almost all⁶ found in a deep section which was cut, as has been said, at the south-west corner of the third-century fort (see FIG. 1). The material from this area (of various kinds, organic and artificial) belongs to a sequence of forts dating to the pre-Hadrianic period. It is probable that two separate forts should be identified, the second being much larger than the first and having at least two, perhaps three, phases of occupation. Table I shows how the phases are archaeologically distinguished as well as the approximate dates assigned to them.⁷

1. Much of the material in this section relies upon the account given by Birley, *Vindolanda*, chs.VI-VIII. See also Bowman-Thomas, *VWT*, pp.3-7 and *Historia* 24 (1975), pp.463-7.
2. This tablet was inventoried as No. 15. For a fuller description of the circumstances of the discovery see Birley, *Vindolanda*, p.132.
3. Many of the individual inventory numbers contained fragments of more than one writing tablet. In some cases (e.g. No. 4) fragments of the same tablet turned up in different inventory numbers. Some pieces which were originally inventoried as writing-tablets turned out, on further examination, to be merely fragments of wood. A considerable number of fragments contained no writing; we have made no attempt to describe them; most of them are not included in the table on p. 20.
4. The problems of conservation were considerably eased by a generous gift from BP Chemicals Ltd. Birley remains in no doubt that there are still more writing-tablets awaiting discovery.
5. See Birley, *Vindolanda*, ch.VI.
6. For the 'strays' see below, p. 20. Birley, *Vindolanda*, p.133 describes one of these (No. 113) as having been found in the Diocletianic ditch, but there is no doubt from the character of the handwriting that it cannot date to this late period; it is almost certainly contemporary with the rest of the tablets. Most of the tablets were found in the larger of the two stippled areas shown on FIG. 1 (p. 21).
7. It should be stressed that the dates are only approximate, but the occurrence of the name of the governor

TABLE I

First Fort

Period I Layer 12 *ca.*A.D.80–95 First building occupation-level

Second Fort

Period IIA/B Layers 10/8 *ca.*A.D.95–105 Second building occupation-level

Period III Layer 6 *ca.*A.D.105–15 Third building occupation-level

Period IV Layers 5A/B *ca.*A.D.115–25 Possible further occupation of third level

Table II shows the distribution of writing-tablets in the various archaeological layers. The leaf tablets are designated L and the stylus tablets S.⁸ The former category includes some blank fragments but excludes a number of pieces of wood which appear not to be from writing-tablets (this explains why the total is less than the original 202 inventory numbers).

TABLE II

	<i>Layer 10</i>	<i>Layer 8 or 10</i>	<i>Layer 8</i>	<i>Layer 6</i>	<i>Layer 5A/B</i>	<i>Uncertain</i>
S	–	–	1	8	1	1
L	11	7	59	4	2	1

It will be observed that writing-tablets are present in all phases of the pre-Hadrianic period except that which represents the first fort. The majority of tablets comes from Layers 10/8 (*ca.*A.D.95–105) and of these most originate in Layer 8. Most of the small number of stylus tablets, however, come from the later phase represented by Layer 6 (*ca.*A.D.105–15). No doubt this is pure chance and of no significance from the point of view of the type of writing-materials used at different periods. We must, of course, take into account not only the ‘vertical’ but also the ‘lateral’ distribution of the tablets. As may be seen in FIGS. 1–3 the great majority of these tablets was found in a fairly restricted area, with the exception of two odd tablets which were some considerable distance away.⁹ The clustering is suggestive but we cannot be sure of the significance of the ‘strays’ until further excavation has taken place. As for the place of concentration, it seems more than coincidence that the tablets were deposited in the same small area over several occupation-levels, but we find this very difficult to explain convincingly. Birley has suggested that the find-spots might be characterised as follows:

Period IIA/B	Layers 10/8	a <i>fabrica</i>
Period III	Layer 6	building of unknown use (perhaps a barracks)
Period IV	Layers 5A/B	building of unknown use (perhaps a barracks)

If this is correct, we might tentatively suggest that the tablets from Layers 10/8 come from a rubbish dump in an area near the *fabrica* (which itself might be close to the *praetorium*). This may account for the presence of urine and excreta in the deposit and also for the fact that some of the tablets show signs of burning.¹⁰ The tablets from Layers 6 and 5 will then be simply the occupation-debris of what was possibly a barracks building.

It is therefore clear that the collection as a whole cannot be described as archival — we do not have the Romano-British counterpart of the ‘Files of *cohors XX Palmyrenorum*’.¹¹ There are, however, three small archives in the collection: groups of letters connected with Flavius Cerialis (Nos. 21–29), with Crispinus (Nos. 30–33) and with Flavius Genialis (Nos. 34–6). We think that

Marcellus (who must be L.Neratius Marcellus, see No. 37.14 and note) in a tablet from Layer 8 may be taken to confirm their relative accuracy.

8. For a detailed explanation of the difference between stylus tablets and leaf tablets see below, pp. 36–45.

9. See note 6.

10. E.g. Nos. 51, 107.

11. See below, p. 46.

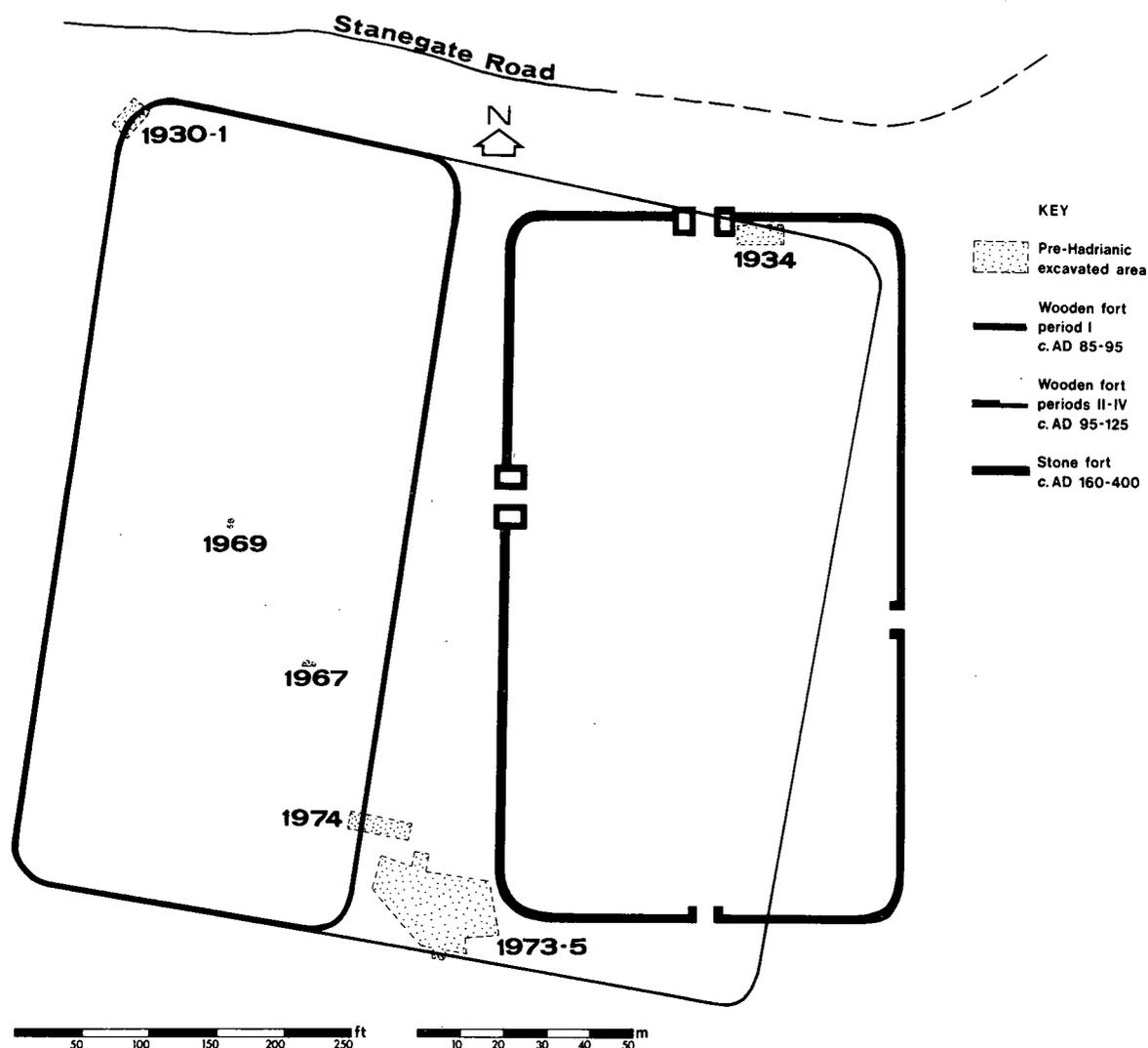


FIG. 1 (Birley, *Vindolanda*, fig. 26): Plan of the pre-Hadrianic forts in relation to the third-century stone fort. The writing-tablets were found in the areas at the south end excavated in 1973, 1974 and 1975.

the first two were *praefecti* of the units stationed at Vindolanda during the period represented by layers 10/8 (ca. A.D. 95–105).¹² We have no clue to the position of Flavius Genialis.

In order fully to understand the circumstances in which this collection of written material was preserved we have recourse to the expertise of the environmental scientist as well as to that of the archaeologist.¹³ The timber buildings close to the south end of the pre-Hadrianic forts contained layers of flooring which were composed predominantly of compacted bracken. This flooring, belonging to a timber building of Period II (Layer 8), contained the first writing-tablets to be discovered in 1973. Apart from the bracken, the flooring contained straw and many other organic components (gorse-pods, heather, twigs) and the residue of human occupation, bones, oyster-shells, large quantities of leather, jewelry, cloth, wooden objects such as flesh-strippers and slickers and a considerable quantity of human excrement.¹⁴ In addition, the layers were heavily saturated with urine, probably a legacy (like the flesh-strippers) of the tanning process which seems to have been carried out in the *fabrica* near this area. Pupae of a species of stable-fly were also found in a fine state of preservation.¹⁵

12. See below, pp. 47–8. Each of the archives may, of course, contain many more of the tablets than we can now assign to them. But we cannot connect any of the documents (as opposed to the letters) to any of the archives.

13. On this aspect see in general M. Seaward, *The Vindolanda Environment* (1976) and his article in F.H. Perring (ed.), *The Biology of Bracken* (1976).

14. See Birley, *Vindolanda*, pp. 122–6.

15. Birley, *Vindolanda*, p. 124.

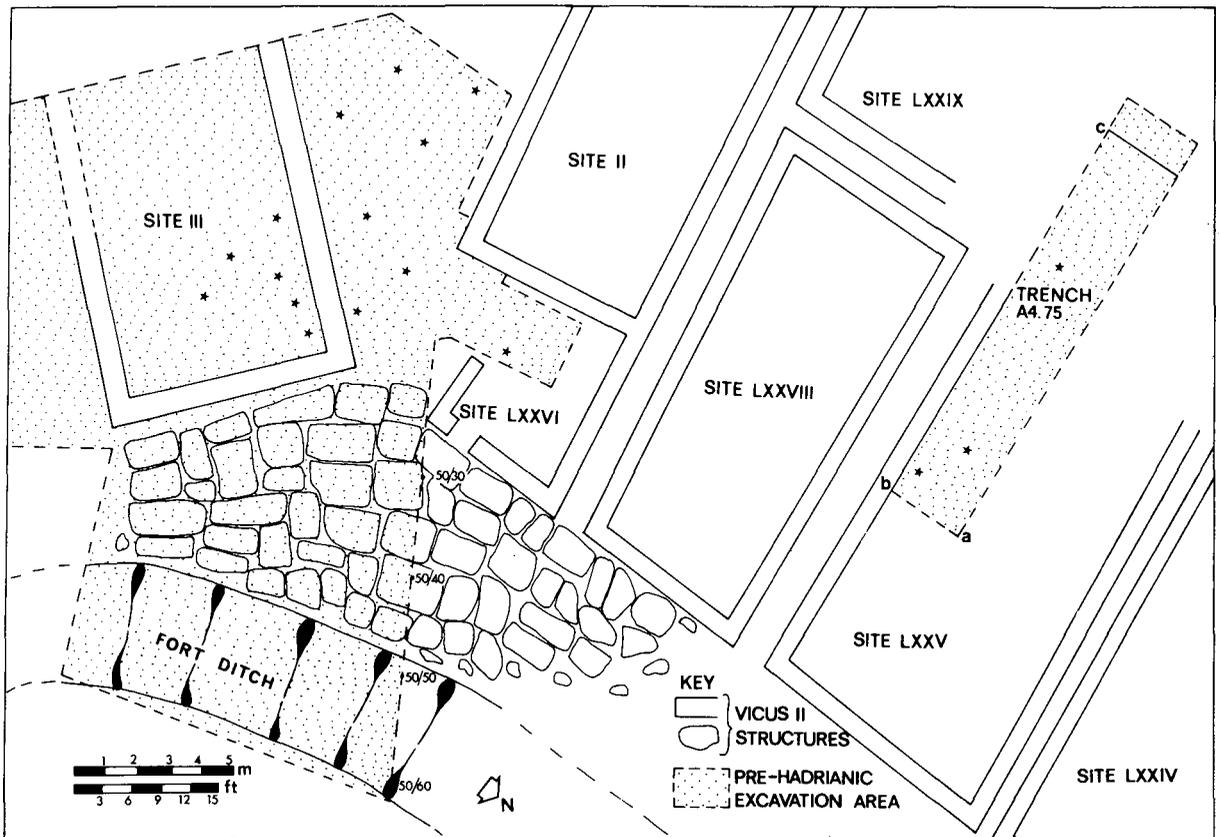


FIG. 2 (Birley, *Vindolanda*, fig. 28): Plan of the pre-Hadrianic excavation-areas in relation to the later structures of the civilian settlement. This shows the lateral location of the writing-tablet deposits (marked *). Those in the area of Site III are from Layers 10 and 8 (ca. A.D. 95–105); those in Trench A4.75 are from Layers 6 and 5 (ca. A.D. 105–25). The context of the two isolated examples found near the fort's ditch is uncertain, but they seem likely to be from the same general period (i.e. pre-Hadrianic).

Several factors seem to have contributed to the survival of the writing-tablets in such a good state. First, there are clay compactions between the levels of occupation, and these created pockets of anaerobic conditions in which the tablets lay. Within these pockets, the presence of organic materials within the soil is also significant. The chemical conditions were created by the presence of bryophytes, whose green coloration was still apparent, straw, excreta and urine. Tannin produced by the organic materials (assisted by the presence of leather) enhanced the preservative factors. Finally, there are traces of vivianite or iron phosphate, which is partly caused by the accumulation of bones of horses, oxen, pig and duck.¹⁶ There can be no doubt that these conditions are responsible for the relatively fine state of preservation of the tablets and it is probably worth making a comparison with conditions at Vindonissa, where considerable numbers of writing-tablets were found in the 1920s amongst the contents of a rubbish dump.¹⁷

We should note, however, that the conditions in which the tablets from Layers 6 and 5 were found do differ significantly from those in Layers 10 and 8. The floors of Layer 8 were composed almost exclusively of bracken and were thinner than those elsewhere, whereas those of Layers 6 and 5 were made principally of straw and contained no traces of urine or excreta. On the whole, we suppose that the anaerobic conditions in Layers 10 and 8 had the effect of preserving the writing which, in several cases, rapidly began to fade on prolonged exposure to air. But since this

16. On the animal remains see G. Hodgson, *The Vindolanda Animals* (1976).

17. For the presence of clay soil and organic remains at Vindonissa see A. Gansser-Burckhardt, *Das Leder und seine Verarbeitung im römischen Legionslager Vindonissa* (Veröffentl. der Gesellschaft pro Vindonissa i, 1942), pp.11–12. For the writing-tablets from Vindonissa see below, p. 34. For the conditions in general, perhaps compare Alcester: P.J. Osborne, *Britannia* ii (1970), pp.156–65. See also Ch.2, note 41.

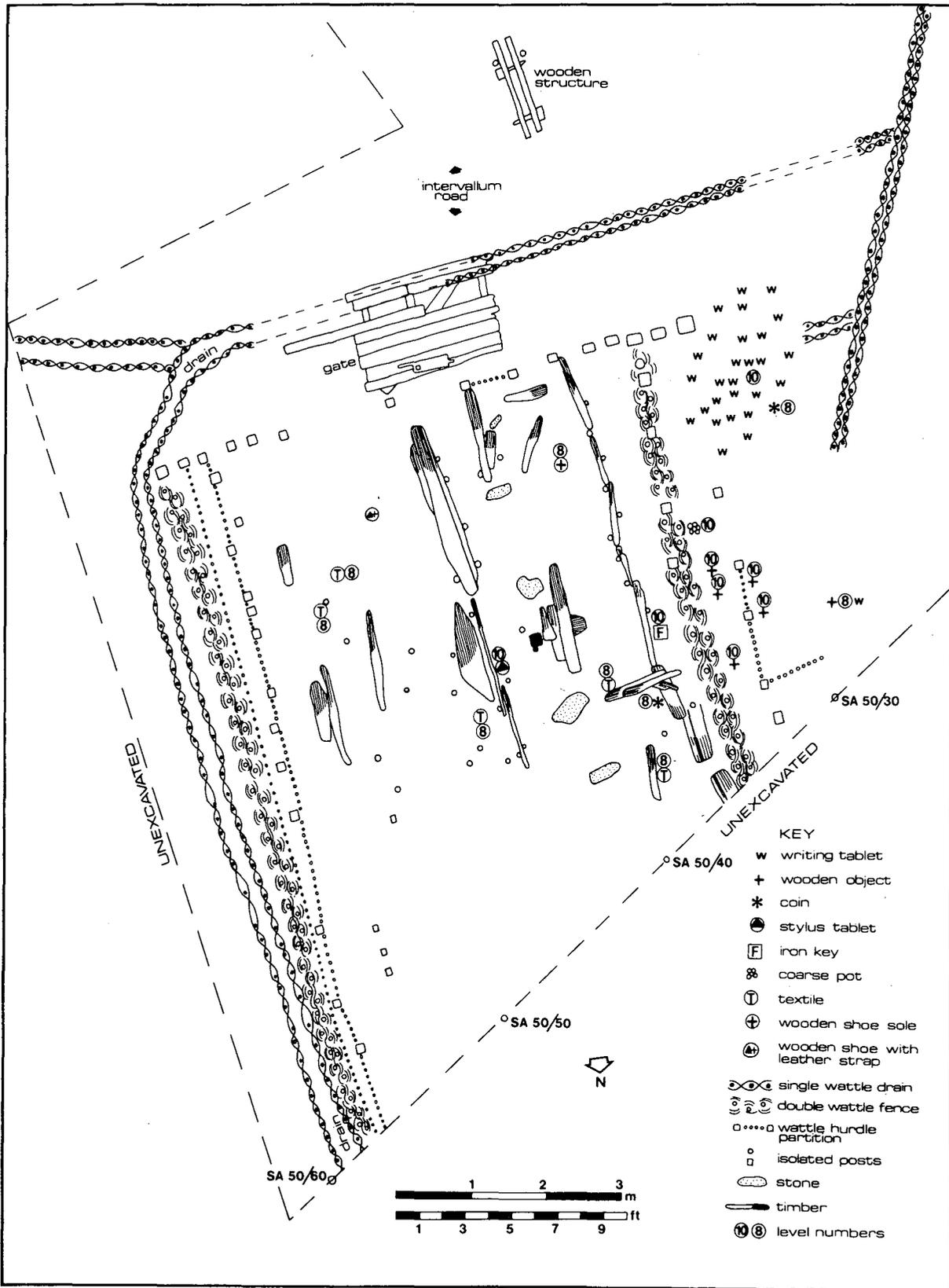


FIG. 3 (Birley, *Vindolanda*, fig. 30): Plan showing the location of the writing-tablets found in Layers 10 and 8. The visible structures are thought to be the remains of a *fabrica*.

phenomenon was not consistent and since equally well-preserved examples were found in Layer 6, we cannot make any generally valid deductions.¹⁸

It may be that the failure to discover similar written material on a significant scale at other sites is due not so much to the fact that tablets have not survived in the ground as to the fact that excavators have probably failed to recognise them for what they are.¹⁹ Recent discoveries at Ribchester and at Lechlade suggest that in future such finds might be more frequent.²⁰

B. EXCAVATION, CONSERVATION AND PHOTOGRAPHY

The great depth at which the tablets lay and the extremely waterlogged conditions which obtained in the deep sections were not the only difficulties encountered in excavating the writing-tablets. The bracken flooring was heavily compacted, matted and tangled and could not easily be dissected *in situ*. Trowelling was not a suitable technique for such delicate objects and it was therefore found more convenient to cut the flooring in sections, like peat, and then to dissect each section individually, carefully extracting the tablets from the organic matter which clung to them.²¹ The compaction of the flooring in antiquity probably caused some fractures in the tablets. The process of extraction will have increased the amount of fragmentation, but there is no reason to believe that any material has been lost. We should not necessarily assume that every piece was complete when it was thrown on to the dump. Excavation-techniques did improve during the course of the 1973–5 seasons, to the extent that it later proved possible to attempt recovery of the tablets *in situ*. If there are yet more tablets in the ground, the methods so far used should prove equally effective in recovering them.

The conservation process which has been developed to deal with the tablets is also a considerable achievement. In the case of papyri, which are preserved in dry conditions, deterioration of the fibre and fading of the writing occurs, if at all, only over a very considerable period of time. This is not true of the writing-tablets which have survived in damp, anaerobic conditions. There is a marked tendency for the writing to fade on exposure to the air and for the wood to disintegrate, though this is not uniform (we do not know why). Although stylus tablets have been successfully conserved,²² we do not know of any successful attempt with objects as thin and as fragile as the Vindolanda tablets. There are, of course, very few similar tablets (see below, p. 36) but the writing on the comparable example found in the City of London did not survive the attempts to preserve it.²³ It is therefore a notable achievement on the part of the staff of the British Museum's Research Laboratory that a process was developed to conserve the tablets which involved very little or no shrinkage (a maximum of about 5 per cent) and no loss of visible writing on those fragments where it survived.²⁴ The process is a simple one which involves prolonged soaking of the tablets alternately in baths of ether and methyl alcohol. It may now be regarded as a standard procedure for such objects. All of the finds from the seasons 1973–5 have now been processed in this manner with no observable deterioration, although when the tablets are dry they become quite brittle and lighter in weight. In most cases the cleaning process which had taken place prior to conservation had removed the adhering dirt, but even after conservation it was possible to remove any remaining debris, if necessary, by careful

18. To this extent we must modify our original impression of the importance of the organic remains as a factor in preserving the writing-tablets.

19. Corbridge is an exception, see C.M. Daniels, *Arch. Aeliana* (fourth series) xlvi (1968), 115 ff. Daniels describes the tiny fragments found there as 'inscribed' and we therefore presume that they are stylus tablets; they were part of a hoard of wooden objects buried in a wooden chest soon after A.D.98.

20. Information on Ribchester kindly supplied by Dr. T.W. Potter and on Lechlade by Dr. R.S.O. Tomlin (cf. below, p. 35).

21. Birley, *Vindolanda*, pp.133–4.

22. For example the London tablet conserved by Mr. Leo Biek of the Ministry of Works (E.G. Turner, *JRS* xlvi (1956), pp.115–8).

23. O. Skutsch, E.G. Turner, *JRS* l (1960), pp.108–11.

24. See S. Blackshaw, *Studies in Conservation* 19 (1974), pp.244–6. From 1974 onwards the conservation process was carried out on site at Vindolanda and was assisted by a generous gift of chemicals from BP Chemicals Ltd.



FIG. 4 (Birley, *Vindolanda*, figs. 33-4): Plans showing the variety of objects found in the flooring of Layers 6 and 5 (ca. A.D. 105-25).

use of a fine point (e.g. a needle) and a soft brush. Any danger of scraping away the surface could be lessened by using a microscope (10x magnification was normally sufficient).

The visibility of ink writing on some of the tablets suggested, by analogy with papyri, that (even in those cases where the ink had subsequently faded) infra-red photography might succeed in rendering it visible again. This technique did prove successful in many cases and the photographs were generally sufficiently good for transcriptions to be made without recourse to the original tablets except for the purposes of checking for odd bits of dirt, or pitting, which could look like ink on the photographs.²⁵ Even so, some problems still remain unsolved. (1) Those cases in which the ink has faded so badly that even the infra-red film could recapture only faint traces; there seems to be nothing we can do about these. (2) The scratches on the stylus tablets are, of course, not susceptible to infra-red; with these it is merely a case of adjusting the lighting to achieve the best possible relief. (3) There were several pieces of which the photographs did not show a clear differentiation between the writing and the background; the writing appeared fuzzy and it was suspected that the infra-red radiation was not being adequately reflected by the wood (in contrast to the absorptive qualities of the ink);²⁶ in some of these cases further significant progress was made by using ultra-violet light with the infra-red film and a Kodak Wratten 87 filter.²⁷

C. TECHNICAL ANALYSIS

The physical characteristics of the writing-tablets, particularly those of the leaf type, are of some importance. The plane dimensions of the complete diptychs, where they are preserved or can safely be inferred, show only small variations. The largest are of the order of →20 cm by ↓9 cm, the smallest of the order of →16.5 cm by ↓6 cm (the arrows indicate the direction of the grain of the wood in relation to the measurement). More striking, in a significant number of examples, is the extreme thinness, less than 0.25 mm; the majority of the leaves are of the order of 1 – 2 mm in thickness, some are as much as 3 mm. The surface of the leaf is generally very fine-grained and smooth and, with a few possible exceptions, had clearly been prepared expressly for writing in ink.

The following features of wood anatomy have proved most useful in identifying the tree species from which the Vindolanda leaf tablets were cut:²⁸

1. The arrangement of vessels within each annual ring.
2. The structure of vessel endplates.
3. The formation of medullary rays.
4. The size and distribution of pits in vessel side-walls.

Other features of wood anatomy were also recorded when present. The samples were finally identified by comparing their wood anatomy with published descriptions and by comparing them with reference slides of wood taken from different tree species.

Thin sections were taken from the leaf tablets by hand, using a sharp razor. Sectioning was confined to the edges of the tablets, taking care to avoid areas where text covered a break in any

25. The photography was done by Miss Alison Rutherford of the Department of Photography of the Medical School, Newcastle University.

26. See A. Rutherford, *Medical and Biological Illustration* 1975, 25, pp.41–5.

27. Further experimentation by Mr. E. Hitchcock, of the Department of Photography at University College, London, shows that the results obtained from the standard technique for photographing papyri (use of infra-red film) produced a marked improvement in some cases. Those examples in which the ink appeared on previous photographs to be fuzzy did not markedly improve. We are now satisfied that no further significant improvement is likely with techniques currently in use. We owe a profound debt of gratitude to the technical expertise of Miss Rutherford and Mr. Hitchcock, without which it would hardly have been possible to read more than a handful of the writing-tablets.

28. Details of wood structural anatomy and development may be found in the following books: K. Esau, *Plant Anatomy* (1953) and *Anatomy of Seed Plants* (2nd ed., 1977), A. Fahn, *Plant Anatomy* (2nd ed., 1974), M.H. Clifford in H. Godwin, *The History of the British Flora* (1956).

fragment. The written surface of the tablets was not sampled, to avoid damaging the text. Sections running parallel to the grain of the wood were obtained relatively easily, but transverse sections running across the grain were extremely difficult to make since the wood lacked strength and crumbled easily. However, with care, transverse sections were taken from most of the sample tablets.

In order to prepare slides, sections were taken from the dry tablets by hand, using a double-ground razor. These were then placed in a mixture of glycerin and ethanol (1:1 by volume) to prevent any possible damage to the highly desiccated wood slivers through hygroscopic movements. Sections were left in this mixture for between thirty and ninety minutes, and were finally mounted on microscope slides in Canada Balsam mountant and dried at 60° C. In initial preparations some sections were bleached for thirty minutes in a 1% solution of sodium hypochlorite in glycerin. This removed all pigmentation from the sections but made the tissue structure less visible. Photomicrographs were taken on Pan F film using a Zeiss photomicroscope II.

Eleven leaf tablets have been examined botanically, eight by Dr. Tapper and three by Dr. J. Turner, who has also examined two stylus tablets.²⁹ Of the leaf tablets, nine have been positively identified as being cut from alder or birch, while from two it has proved impossible to obtain sufficient detail to permit firm identification.

The characteristic features of alder and birch are shown in Table III.

TABLE III

	<i>Alder</i>	<i>Birch</i>
Annual ring structure	diffuse porous	diffuse porous
Vessel endplates	scalariform, 12–25 bars	scalariform, 12–25 bars
Vessel pit dimensions	1.4 × 2.5 μm to 3.6 × 3.6 μm	similar dimensions to alder
Vessel diameter	36 to 72 μm	maximum diameter c.100 μm
Medullary rays	all uniseriate	uniseriate and multiseriate rays up to four cells wide

Both woods are diffuse-porous, possessing vessels scattered throughout each year's growth. The endplates of the vessels are scalariform in both species and have between 12 and 25 slit-like perforations. The pits in the side-walls of vessels are also similar in the two species. In both cases they are arranged in close reticulate pattern, between anastomosing bands of thickening in the vessel wall. They are circular to elliptical in shape, the average dimensions being 3.6 μm × 1.4 μm. However, detailed observations suggest that, while the dimensions of the pits are the same in both species, pits in vessels of birch tend to be polygonal rather than with a smooth outline.

A major difference between wood anatomy in alder and birch is the presence of medullary rays that are up to four cells wide in birch, while those in alder are never more than one cell across. In some parts of alder wood, especially near places where a branch diverges from the main trunk, the medullary rays may be closely aggregated to each other, but this was not observed in samples taken from the leaf tablets which were examined.

Leaf tablets cut from alder (*Alnus glutinosa*)

Seven out of the eleven leaf tablets which have been examined are made of alder. Positive identification was made from the presence of uniseriate, homogeneous medullary rays only, which distinguishes alder wood from that of birch, and by the presence of scalariform endplates with at least 12 bars. Tearing in the sections limited the number of bars that could actually be counted (PL. XIV, 3 and 4). Apart from birch, no other tree species in which scalariform endplates are common possesses homogeneous medullary rays.

29. We are also grateful for the work done by Drs. W.A. Charlton and J.H. Tallis of Manchester University (see Bowman-Thomas, *Historia* 24 (1975), p.471).

The diameter of vessels ranged from 35 to 72 μm , and this range was fully spanned by vessels from tablet No. 45. Most of the tablets showed a less extreme range, while tablet No. 38 was found to possess smaller vessels ranging from 35 to 50 μm in diameter. Pit dimensions were variable from 1.4–3.6 μm across and were circular to elliptical in outline. Medullary rays are shown (i) in cross-section, (ii) tangential longitudinal section (TLS) and, in side view, (iii) radial longitudinal section (RLS). All rays observed were homogeneous and uniseriate. The uniseriate rays were mostly 10–12 cells high, with occasional rays of 8 cells or less. They are darkly coloured from the accumulation of staining matter during the long period over which the wood has been buried. In a few sections the rays are bent and distorted (presumably as a result of desiccation followed by burial) compared to sections of modern wood.

Side-views of the rays are shown in PL. XIV, 2 (RLS), in which the ray cells can be seen lying horizontally over vertically-arranged vessels and tracheids. Plasmadesmata connections between ray cells are visible in PL. XIV, 2 and have the appearance of short chains of beads. These connections permit horizontal movement of water and other materials along the rays.

Most of the alder tablets consist of small fragments approximately 2 mm in thickness, which possess a fairly uniform writing surface. They are almost all wedge-shaped, being rather thicker at one end than the other. Two of the tablets possess additional features of note. Tablet No. 5 has a thin sliver of bark attached along one of the sides. The width of this strip is no more than 3 or 4 mm and indicates that the bark of the alder from which this tablet was cut was rather thin. The surface of the tablet also includes several small knots. Tablet No. 43 bears what appear to be horizontal cutting marks on its surface.

Leaf tablets cut from birch (*Betula spp.*)

Only two tablets cut from birch have been identified. In tablet No. 29, which was examined, transverse sections (TS) clearly revealed the presence of an annual ring (PL. XIV, 7). This was the only ring seen in any of the tablets, and appears to run obliquely across the edge of the tablet, rather than parallel to it. Similar rings must be present in the alder and other tablets, but have not been observed because of the difficulty of preparing transverse sections. A uniseriate ray and multiseriate rays can clearly be seen traversing the layer of small-diameter tracheids formed at the end of the growing season and they pass into wood formed in the succeeding year. The vessels are large in this sample, with the largest in the spring wood attaining a diameter of more than 100 μm .

The pits in the side-walls of vessel elements are polygonal rather than circular in outline in this tablet. Fungal spores are also found in sections taken from it and indicate that the tablet was attacked by a saprophytic fungus either before burial or following excavation.

Other leaf tablets

Two leaf tablets have not been positively identified. Dr. Turner describes Tablet No. 22 as being cut from a diffuse-porous hard wood, which possesses uniseriate, homogeneous rays and multiseriate, slightly heterogeneous rays up to 4 cells in width. The pits appeared large and alternate, but no endplates were found, and so little was examined that the absence of spiral thickening could not be taken as conclusive.

Some features of Tablet No. 39 are illustrated in PL. XIV, 8–10. A uniseriate ray is shown in cross-section but in side-view it appeared that more than one layer of cells was present in the medullary rays, when the plane of focus was altered. The rays are homogeneous to very slightly heterogeneous. A significant characteristic of this wood is the presence of large elliptical pits, shown in PL. XIV, 10, which are about three times the size of those of birch or alder. Endplates were not found in any sections taken from this tablet. Without observations of the vessel endplates and of greater detail in the medullary rays, the wood cannot be firmly identified. However, the presence of large pits suggests that Tablet No. 39 may be made from willow (*Salix sp.*).

Stylus tablets

Tablets No. 117 and 113 were examined by Dr. Turner, who identified the wood as either

larch (*Larix*) or spruce (*Picea*) from the presence of resin ducts and the pitting of the tracheids. These tablets are more than 7 mm thick, with the centre hollowed out to hold wax.

D. MANUFACTURE OF TABLETS AND GENERAL CONCLUSIONS

We must assume that the tablets bearing documentary texts (Nos. 1–20) originated at Vindolanda, whilst the letters (with the exception of No. 37) will have been written elsewhere. It is reasonable to suppose that the tablets were cut and prepared from timber growing near to where they were used. In the case of the documents, the tablets on which they were written were no doubt manufactured at Vindolanda, though this is impossible to prove and we do know of writing-tablets as manufactured objects of trade.³⁰ There is evidence for a soldier in Egypt being seconded to the duty of paper-making, and a passage in the *Digest* which lists *immunes* includes *et qui siluam infidunt*.³¹ There is no doubt that military units must have had the technology to manufacture leaf tablets. What we do not know is whether any of the letters at Vindolanda originated outside military circles. The raw materials, at any rate, were certainly there in antiquity and both alder and birch still grow alongside Hadrian's Wall today.

Large quantities of alder and birch pollen are present in peat deposits dating from the Roman period in this area and indicate that both tree species were common throughout the occupation of Vindolanda by the Romans.³² Deforestation was widespread during the latter part of the Roman period in Britain and was mainly associated with an increase in agriculture, indicated by greater prominence of graminaceous pollen and of pollen from arable weeds in peat built up at this time. Some timber would have been used for building purposes. The leaf tablets show that small amounts of timber were used for other purposes and, from examination of the relationship between the cut surfaces and wood anatomy in the tablets, it is possible to outline the way in which they were manufactured.

The tablets would have been extremely supple when first cut and were capable of being folded across the grain without breaking. Similar folds parallel to the grain tear easily. Leaf tablets must therefore have been cut from the outer sapwood of green timber to obtain the necessary suppleness. The majority of tablets have to be reconstructed from small fragments retrieved in the excavation, but Tablet No. 5 is an almost complete diptych and in Tablet No. 39 we have the full width of a diptych. The dimensions along the grain are as follows: in No. 5, not more than about 16 cm, and in No. 39, not more than 19 cm (the full width of the complete diptych).³³ Tablets of this size could readily be cut from young trees and the remnants of bark along one side of No. 5 suggest that this tablet was taken from a young tree. It has been cut obliquely through the bark and into sapwood with sharply curved annual rings. Small knots are also visible in this tablet. Curvature decreases in older trees with greater diameters and this tablet has probably been cut from an alder stem of no more than 25 years' growth.

It appears that the largest and most complete tablets are also the thinnest. Tablets Nos. 5 and 39 are not more than 2 mm thick at any point and are, in most places, just over 1 mm thick. By comparison, many of the smaller tablets that are very fragmented are about 3 mm thick and are often wedge-shaped, being thicker along one edge. In some attempts made by Dr. Tapper to produce similar tablets, it was found that the tablets which were thinnest and more uniform in their thickness were obtained from green sapwood, while the only usable tablets cut from drier

30. Cf. E.G. Turner, *JRS* xlvi (1956), p.117 n. 11. *CIL* vi, 9841 attests a *negotiator pugillariarius*, and Diocletian's Price Edict has an entry for *codices* of tablets (see M.H. Crawford, J.M. Reynolds, *ZPE* 26 (1977), p.145).

31. *Digest* 50.6.7 (6). For paper-making see *RMR* 10.18, *exit ad chartam conficiendam*. R.W. Davies, *ANRW* II.1, p.316 refers to military sawmills (*lignaria*) in Germany. It is perhaps more likely that writing-tablets were by-products of the military technology which centred around the legions than that they were made on a large scale by auxiliary units; but the technique of manufacture is unlikely to have been so complicated as to preclude casual production at any site.

32. G. Davies, J. Turner, *New Phytologist* 82 (1979), pp.783–804, J. Turner, *Journal of Archaeological Science* 6 (1979), pp.285–90.

33. The largest dimension along the grain which we can infer for a diptych is almost 21 cm (No. 25). For a fuller description of the diptych see below, pp. 37–8.

wood were thicker and less uniform. When cut these modern examples were extremely supple and could be folded in the same manner as those from Vindolanda.

The method of manufacture of the leaf tablets can be elucidated from the relationship between their cut faces and features of wood anatomy. The tablets are rectangular, with shorter sides which cut across the wood to reveal vessels in transverse section. The longer sides are aligned with the grain of the wood and the tablets must therefore have been cut in a plane roughly parallel to the main axis of the tree. The long edges of the tablets are oblique rather than square in relation to the writing surface. Longitudinal sections of these oblique edges all give side views of the medullary rays (PL. XIV). These sections therefore lie in the radial longitudinal plane. It is probable that the wood has split along this plane at the edges of the tablets during their period of burial, and perhaps even before they were discarded.

Cross-sections of the medullary rays were obtained at right-angles to the radial longitudinal plane on sections taken from the tangential plane. As illustrated in FIG. 5, the plane in which cross-sections are observable lies at an angle to the flat writing surface rather than parallel to it. This indicates that the tablets must have been cut across the wood, passing through a series of annual growth-rings in a broad plane set at right-angles to the radius of the trunk.

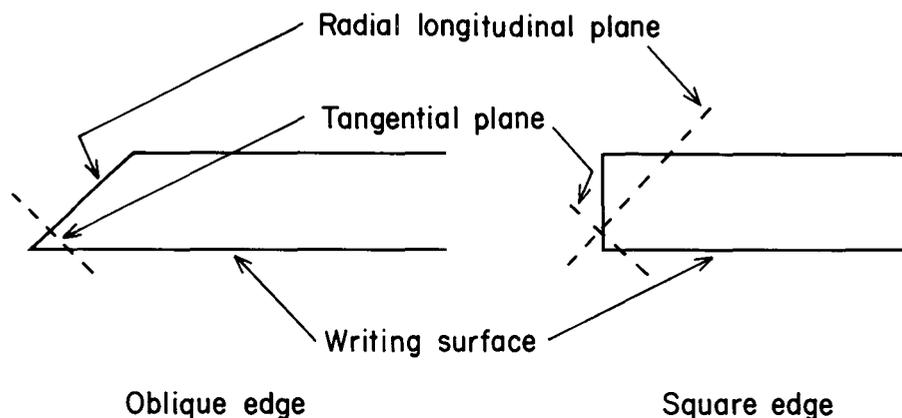


FIG. 5 The manufacture of leaf-tablets in relation to wood-grain.

The information from these observations is consistent with the tablets being cut from the sapwood of young trees, possibly with the use of a spokeshave or a very sharp knife with a long blade. The use of the plane seems to be ruled out, in some cases by the thickness of the leaf, but in most cases by the dimension across the grain, which is normally greater than the breadth of the plane blade.³⁴ Given the popularity of veneered furniture, the variety of wood used for veneering and the high degree of expertise achieved in cutting veneers,³⁵ we are tempted to make our analogy in this area but we have not been able to find any precise evidence for how veneers were cut. The connection, at least, seems to be supported by one statement of Pliny the Elder, even though its meaning is obscure and textual corruption is suspected: *nunc intra pugillares lectorumque silicios f[aut lamnas] raro usu spectatur* (NH 16.68, on the use of maple).³⁶

The thinnest and most complete tablets may have been prepared from selected timber, but the thicker tablets may well have been produced from any timber available. Possibly they were a by-product formed during the initial trimming of trunks and boughs for other uses and all these leaf tablets could have been produced locally, as they were required.

34. On woodworking tools in general see C. Singer, E.J. Holmyard, A.R. Hall, T.I. Williams, *History of Technology* ii (1956), pp.231 ff., H. Blümner, *Technologie und Terminologie der Gewerbe und Künste bei Griechen und Römern* ii (1879), pp.342 ff. On planes see W.L. Goodman, *The History of Woodworking Tools* (1967), pp.43–53.

35. In general see G.M.A. Richter, *Ancient Furniture* (1926), pp.155–6, and cf. Blümner, *op. cit.* (note 34), pp.186 f., 238 f., 336 f.

36. The Loeb edition translates this passage: 'but as it is, except for writing-tablets and veneering on couches it (*sc.* maple) is seldom seen in use'.

By contrast, the two stylus tablets examined by Dr. Turner are made from larch or spruce, neither of which is native to Britain. These tablets must therefore have been manufactured elsewhere in the Roman Empire and imported into Britain.

The ink presents no obvious problem. We assumed from the outset that it is likely to be the normal mixture of carbon black, gum and water which is found on papyri (iron-gall ink did not come into use until a later period).³⁷ The sensitivity of the ink to infra-red rays seems to bear this out. Again, there can be no doubt that this could be made up as and when needed, though it was easy enough to transport it or send it in blocks which could be moistened by the addition of water.³⁸

37. See R.J. Forbes, *Studies in Ancient Technology* III² (1965), pp.228–31.

38. See *P.Mich.*468.19, P.J. Parsons, *Parola del Passato* 121 (1968), pp.287 f., *P.Oxy.*3189.7 note.

II. WRITING ON WOOD

A. CLASSIFICATION OF WRITING-MATERIALS

One of the most important ways in which the Vindolanda tablets add to our knowledge is in forcing us to revise our ideas about writing and writing-materials in the Roman period. In order fully to understand what advances may be made in this area it is necessary to examine in some detail the evidence previously available to us.¹

In general, scholars interested in the history of writing-materials have categorised them by use of the terms 'hard' and 'soft'. By 'hard' they generally mean: stone, pot, various types of metal, plaster, ivory etc.; by 'soft', cloth, leather, parchment or skins of other kinds, and papyrus. Alternatively, writing-materials might be distinguished as, on the one hand, those which are *incised* and, on the other hand, those which are *written* (whether with a brush or pen); this leads to a similar, but not identical categorisation. Leaving wood aside for the moment, we would then say that the category of incised materials includes: inscriptions cut in stone, metal plates (gold, silver, bronze, lead), ivory, plaster (graffiti incised in wet plaster) and occasionally pots or sherds (before drying). In the other category we would place papyrus, leather, parchment or other skins, vellum, cloth, stone pellets, painted plaster and ostraka (potsherds). Such a distinction can be of considerable importance to the palaeographer and we shall return to it (below, pp. 51–2). Nevertheless, it is worth stressing that, if applied too rigidly, such a categorisation can be unhelpful or even positively misleading. To take the distinction where it appears at its clearest: on stone inscriptions we find lettering of a monumental type which differs sharply from business or cursive writing which is found on documentary texts on papyrus. The letter forms in literary texts may, however, resemble monumental lettering much more closely. Conversely, texts incised on metal, plaster or pot (particularly when wet) frequently resemble cursive hands on papyrus more closely than they resemble monumental writing.

The force of these observations is particularly clear in dealing with the use of wood as a writing material. It is clearly nonsensical to attempt to categorise wooden tablets as 'hard' or 'soft' material; but it is also misleading to categorise them, as is usually done, as 'incised' rather than 'written' material. They are usually classified as 'incised' since most wooden writing-tablets which have survived from the classical world are of the type which was hollowed out in the centre and filled with wax, the writing being then cut into the wax by means of a metal stylus.² But the vast majority of the Vindolanda tablets are not of this type — they are thin slivers of smooth wood which are written with pen and ink and were clearly always intended to be used in this way. Furthermore, even those tablets which were originally designed for the use of a stylus on wax are sometimes written with pen and ink (a phenomenon which is not confined to Vindolanda).³

1. Some of the topics in this chapter are discussed by Bowman-Thomas, *Historia* 24 (1975), pp.467–72 and by Bowman, *ZPE* 18 (1975), pp.237–52.
2. For styli from Vindolanda see Bowman-Thomas, *VWT*, Pl. iv. Numerous styli were also found at Vindonissa, see R. Laur-Belart, *Gesellschaft pro Vindonissa, Jahresbericht* 1942–3, pp.32 ff.
3. See below, p. 33 (1), p. 35 (6.(i) f).

B. ROMAN WRITING-TABLETS

Apart from the use of wood for such items as *dipinti* and mummy-tags,⁴ it is clear that it was employed in the Mediterranean world for documents and letters from a very early date. Pliny the Elder drew attention to the implication of its use in Homer's time and this seems to be borne out in the Greek sources.⁵ From the Roman period we have numerous examples of writing-tablets which have survived. A list of known examples was compiled by Marichal in 1950 (updated in 1955)⁶ and several more recent finds can be added to his lists.⁷ Most of the surviving examples in fact come from five principal geographical areas: Southern Italy, Dacia, Egypt, Switzerland and North Africa. It will be useful to begin by discussing these groups briefly and then to add some remarks on the few examples found outside these areas.

1. Tablets from Pompeii and Herculaneum. These all predate the eruption of Vesuvius (A.D.79). There are over 200 documents, all of the stylus type — that is thick pieces of wood with recesses which will have been filled with wax and incised with a stylus (though some examples also have writing in ink). Their content, too, is remarkably homogeneous. The Pompeian tablets record the business affairs of L.Caecilius Iucundus, an auctioneer. The tablets from Herculaneum come from at least two houses and almost all record legal and monetary transactions.⁸
2. The province of Dacia has yielded a collection of tablets which dates to the period 131–67.⁹ All of these, with one significant exception,¹⁰ are of the type written with a stylus on wax. Most of the texts, again, record legal transactions (the majority are *cautiones*).
3. From North Africa we have the collection known as the *Tablettes Albertini* which date to the fifth century A.D.¹¹ The 45 tablets, making up 34 separate documents in all, contain legal contracts and are written in ink on thick slabs of wood.¹²
4. Egypt has provided a considerable number of writing-tablets with texts in Latin. These cannot be described as a collection since they come from a variety of places and range widely in date, from the first to the fourth centuries A.D.¹³ Their content is varied: birth certificates, military documents and lists, documents dealing with *tutela*, receipts, census declarations. Like most Latin papyri, the majority of writing-tablets contain texts which are, broadly speaking, either legal or military in nature.

4. For a recent discussion of the latter see E. Boswinkel, P. Pestman, *Textes grecs, démotiques et bilingues (Papyrologica Lugduno-Batava xix, 1978)*, pp. 232–59.

5. *NH* 13.88, on *chartae: aut cur, si iam hic erat usus, in plumbeis linteisque uoluminibus scriptitatum constat, curue Homerus in ipsa illa Lycia Bellerophonti codicillos datos, non epistulas, tradiderit?* Cf. *Iliad* 6.168 f., Herodotus, 7.239, 8.135.

6. *Scriptorium* 4 (1950), pp.131–3; 9 (1955), pp.129–30.

7. The principal additions to his list are: some of the tablets from Herculaneum (note 8) and from Vindonissa (note 15), Britain (6.(i) d–m, pp. 34–35) and elsewhere in Europe (6.(ii) b–g, p. 35). We are grateful to Professor A. Welkenhuysen for supplying some of the additional references; he is engaged in the preparation of a *Clavis* of Latin writing-tablets.

8. The Pompeian tablets are *CIL* 4 Suppl.1 3340, I–CLIII; for a general account of their content see now J. Andreau, *Les affaires de Monsieur Iucundus* (1974). Tablets from Herculaneum: *Parola del Passato* 1 (1946), pp.379–85, 3 (1948), pp.165–84, 8 (1953), pp. 455–63, 9 (1954), pp.54–74, 10 (1955), pp.448–77, 16 (1961), pp. 66–73; *Rend.Accad.Arch.Napoli* n.s. 41 (1966), pp. 107–21, 43 (1968), pp.195–202, 44 (1969), pp. 25–51, 45 (1970), pp.211–31, 46 (1971), pp.173–97, 47 (1972), pp.167–86, 307–18, 51 (1976), pp. 145–68; *Atti Accad.Napoli* 88 (1977), pp. 121–7. We refrain from citing the extensive secondary literature on juristic points.

9. *CIL* 3², pp.921–60. *Inscriptiones Daciae Romanae* i (1975), Nos. 31–55.

10. *CIL* 3², p.957, no.xxii. See also note 41.

11. C. Courtois, L. Leschi, C. Perrat, C. Saumagne, *Les Tablettes Albertini* (1952).

12. The editors claim (*op.cit.* in note 11, p.9, n. 2) that similar tablets are still in use at the present time in Morocco. Most of these slabs are *not* hollowed. We have seen something similar, carrying a Greek text of late date, in the John Rylands University Library (Manchester). We include the *Tablettes Albertini* for the sake of completeness even though they are much later in date than the Vindolanda tablets and the rest of the material here surveyed.

13. Republished as *CPL* 104–5, 113, 148–57, 159–64, 168, 171–3, 193, 197, 200–2, 211, 213–5, 221, 223–6. It is noteworthy that only two of these postdate the early third century.

5. Switzerland: the site of Vindonissa preserved a group of tablets in an environment similar to that at Vindolanda.¹⁴ The site itself was a legionary fortress and the tablets date to the mid-first century A.D.; they are therefore close in date to the Vindolanda texts.¹⁵ Another point of comparison lies in the fact that some of the texts are clearly private letters. Also of particular importance is their format.¹⁶ It is difficult to discover the true state of the collection. A handful of the texts was published in the 1920s, 1930s and 1950s and in most cases the interior text of the tablet was completely illegible, only the addresses on the outside yielding any substantial readings. The remainder of the tablets (apparently over 400 in all) include about 100 which are said to contain traces of writing.¹⁷ But it seems unlikely that many will yield any more substantial texts.

6. Tablets of diverse provenance.

(i) Britain has produced a handful of tablets which may be described in somewhat greater detail.¹⁸

- (a) Three tablets published by Collingwood: an oath invoking the Emperor Domitian, part of a loan or purchase and a text of uncertain nature containing a reference to ships.¹⁹ All these are stylus tablets and perhaps all are texts of a legal nature.
- (b) Three tablets published by Richmond.²⁰ Two contained such slight traces left by the stylus on the wood that nothing could be made of them. The third, dating to the first or second century A.D., had the word *Londinio* on the outside, perhaps written with a bronze pen. Six lines of writing on the inner face showed the text to be a business letter concerned in part with the sale of a female slave.
- (c) Three tablets belonging to the British Museum were described by R.A. Smith.²¹ Two are not said to contain writing; the third has an inscription burnt into it.
- (d) A list of tablets owned by the British Museum which was drawn up in 1966–7 includes another tablet found in Britain but it is not said to contain any writing.²²
- (e) The City of Birmingham Museum possesses two writing-tablets, both of the stylus type, which were originally found in London (Walbrook).²³ Both have traces of incised writing.

14. See above, p. 22.

15. Publication of texts: O. Bohn, *Anzeiger f. schweiz. Altertumskunde* 1925, pp. 8–15, 193–9; *Germania* 9 (1925), pp. 43–5; R. Laur-Belart, *Gesellschaft pro Vindonissa, Jahresbericht* 1942–3, 1943–4, 1947–8, 1950–1, 1951–2, 1952–3 (*AE* 1925.6–11, 1926.3–6, 1930.13–4, 1946.262–5, 267–74, 1953.246, 249, 250a). Bibliography in 40. *Bericht des römisch-germanischen Kommission* (1959), pp. 151–2. It is there stated that the texts have been given to R. Marichal for editing and he has described and published a few additional pieces (*AEHE* sect. iv, 1973, pp. 364–80).

16. We note the comment of C. Simonett, *Führer durch das Vindonissa-Museum in Brugg* (1947), p. 68: 'Wir möchten nur darauf aufmerksam machen, das neben den gewöhnlichen, ziemlich massiven Beispielen auch *papierdünne*, dann mehrteilige und solche aus Bronze vorliegen, und was die Inschriften anbelangt, sind neben den in Holz und Wachs geritzten und neben *den in Tinte geschriebenen* auch noch die eingebrannten zu erwähnen' (our *Italics*).

17. Described as 'über vierhundert Bruchstücke von Schreibtäfelchen', which presumably means more than four hundred fragments but a much smaller number of tablets (as is the case at Vindolanda), see 40. *Bericht RGK* (1959), p. 151.

18. This list is unlikely to be exhaustive since there are, no doubt, many examples in various museums which have not been reported (whether or not they contain any writing is another matter). We have not included five stylus tablets from the Walbrook which are now in the Royal Ontario Museum (photographs kindly supplied by the Museum do not reveal any traces of writing). Note the implication of H. Chapman, *The London Archaeologist* 2 (1974), No. 7, p. 176, that there are many such fragments in the collections of museums in London.

19. *London Museum Catalogue 3: London in Roman Times* (1930), pp. 54–8.

20. *Antiq. Journ.* xxxiii (1953), pp. 206–8.

21. *BMQ* 9 (1934–5), pp. 95–6.

22. K. Painter, *BMQ* 31 (1966–7), pp. 101–10. He lists seven tablets from Britain: the one here mentioned, the three published by Richmond (note 20) and the three described by Smith (note 21).

23. Photographs were kindly supplied by Mr. R.P. Wright.

- (f) In 1956 a writing-tablet was discovered in a well in a villa in Somerset.²⁴ It is made of larch and is of the stylus type but its text is written in ink. The handwriting suggests a date in the third century and the content, a sale of a piece of real estate, is again legal.
- (g) Another tablet from London was published in 1960.²⁵ It too was written in ink and the palaeographical and archaeological evidence points to a date late in the first century, thus making it roughly contemporary with the Vindolanda documents. Other points of comparison are the fact that it contains a private letter and its unusual format (see below p. 37).
- (h) Fragments of wooden writing-tablets, some containing traces said to be of 'inscribed' writing, were found in a hoard of various objects stored in a wooden chest at Corbridge.²⁶
- (i) The Museum of London possesses a few fragmentary tablets which are comparable to the leaf tablets from Vindolanda and contain traces of writing.²⁷
- (j) One or two tablets of the stylus type have been excavated in the London borough of Southwark.²⁸
- (k) Recently a few tablets were discovered in a gravel-pit at Lechlade (Gloucs.). These are of interest because they are comparable to the leaf tablets from Vindolanda and are written in ink.²⁹
- (l) A small number of similar tablets was found at Ribchester but we have no information whether or not they contain any writing.³⁰
- (m) Recent excavations at Carlisle have unearthed about a dozen tablets, most of the stylus type but in one or two cases bearing writing in ink.³¹
- (ii) A handful of examples from other areas in Europe deserves brief notice.
- (a) A stylus tablet recording the sale of an ox, found in Holland (Franeker).³²
- (b) A stylus tablet from Rottweil, containing an official letter of Flavian date, perhaps concerning the taxation of the *agri decumates*.³³
- (c) Two fragments of stylus tablets from Cologne; a list of names and a letter concerning a payment.³⁴
- (d) A stylus tablet from Valkenburg with an address on the outside.³⁵
- (e) 12 stylus tablets (4 triptychs) from France (Saintes).³⁶
- (f) About 24 fragments of stylus tablets from Valkenburg.³⁷
- (g) A number of stylus tablets from Cologne with traces of incised writing.³⁸

C. THE FORMAT OF THE VINDOLANDA TABLETS

A glance at the lists above will show that the Vindolanda collection is unique in Britain from

24. E.G. Turner, *JRS* xlvi (1956), pp.115-8.
25. E.G. Turner, O. Skutsch, *JRS* l (1960), pp.108-11.
26. C.M. Daniels, *Arch. Aeliana* (fourth series) xlvi (1968), p.118.
27. H. Chapman, *op.cit.* (note 18). In 1981, Mr. K. Wilmott of the London Museum sent photographs of another tablet.
28. Information kindly sent by Mr. M.G. Dennis.
29. Information kindly supplied by Dr. R.S.O. Tomlin.
30. Information kindly supplied by Dr. T.W. Potter.
31. Information kindly supplied by Mr. M. McCarthy.
32. K. Vollgraf, *Mnemosyne* 45 (1917), pp.341-52 (= *Negotia* 137).
33. R. Laur-Belart, *Germania* 33 (1955), pp.373-5; H. Nesselhauf and H. Leeb, *40 B.R.G.K.* (1959), 170 ff.
34. O. Doppelfeld, *Rom am Dom* (1970), pp.12-3 (= *AE* 1969-70.445-6).
35. J.E. Bogaers, *Festschrift A.N. Zadoks-Josephus Jitta* (1976), pp.123-35.
36. G. Nicolini, *Gallia* 31 (1973), p.383, M. Rouvreau, *Archaeologia* 79 (1975), pp.34-45.
37. W. Glasbergen, *De Romeinse Castelle te Valkenburg ZH* (1972), pp.67-76 (= *AE* 1975.633-4).
38. We are indebted for this information to Frau Dr. B. Galsterer-Kröll, who further reports that the tablets date from the first century A.D.

several points of view. First, it is by far the earliest coherent body of written material from this province. Second, the number of tablets (even though there are many blank or almost blank pieces) more than quadruples the number of British documents known to us. But above all (apart perhaps from the palaeographical importance of the collection, for which see Ch.4) the tablets are of outstanding interest because the majority of them show a most unusual format.

Marichal divided Latin writing-tablets into the categories of 'tablettes de cire' and 'tablettes de bois'.³⁹ By the first designation he apparently meant tablets which were hollowed out to be filled with wax; and by the second, tablets with a flat surface which were intended for writing in ink. For convenience we have adopted a similar division between, on the one hand, 'stylus tablets' which correspond to 'tablettes de cire' and, on the other hand, wooden leaf tablets which were made with a smooth surface to take ink writing. In fact, not a few of the tablets of the stylus type, though designed for writing incised into wax, were in practice written in ink.⁴⁰ Several of the so-called 'tablettes de cire' from Pompeii and Herculaneum contain both incision and ink writing and two of the tablets from Britain listed above also contain ink writing. However, whether or not they were used for ink writing, it should be stressed that virtually all of the tablets listed above are of the stylus type. One of the most important features of the Vindolanda tablets is that almost all are *not* of this type. The vast majority of them are small, thin slivers of wood, smooth and fine-grained (see above, p. 26). There can be no doubt that they were made for writing with pen and ink. We use the term 'leaf tablets' as a convenient designation for these.

In fact, this category of leaf tablets contains a handful of examples which were known before the discovery at Vindolanda. These may be extracted from the lists given above:

- i. A fragment of a tablet from Dacia (2).⁴¹
- ii. A letter from London (6.(i) g).
- iii. One of the tablets in the Museum of London (6.(i) i).
- iv. Possibly some examples from Vindonissa (5), see note 16.

As for subsequent discoveries, we may add:

- v. Another tablet in the Museum of London (6.(i) i).
- vi. The tablets from Lechlade (6.(i) k).
- vii. The tablets from Ribchester (6.(i) 1).^{41a}

It is also worth noting that some twenty years ago a tablet of the same kind, written in Aramaic and dating to the second century A.D., was found in the Dead Sea Caves.⁴²

There is no doubt, then, that the Vindolanda find has presented us with a large number of tablets of a kind which was hitherto represented by only a handful of examples, the significance of which had not been properly appreciated. The sheer number of leaf tablets in the Vindolanda collection must tell us something important about the use of writing-materials of different kinds, at least in this part of the Empire. For it is hardly conceivable that the preponderance of leaf tablets over stylus tablets can be peculiar to Vindolanda, especially when so many of them came, as private letters, from a variety of places (see below, p. 49). It seems likely to us that these leaf tablets, cheap and fairly easy to make, functioned as the standard writing-material for letters and ephemeral documents in those parts of the Empire which were far removed from the source of papyrus; whilst the heavier, more expensive and more durable stylus tablets would be used, on the whole, for more important documents which might need to be kept for a longer time —

39. In the lists cited in note 6.

40. Marichal began by listing only the *Tablettes Albertini* under the category of 'tablettes de bois' (*Scriptorium* 4 (1950), pp.131-3) but in his second list (*Scriptorium* 9 (1955), pp.129-30) he added four tablets from Egypt. This list is far from exhaustive. In Egypt, for example, it appears to have been regular practice for birth certificates to have the inner text incised with a stylus whilst the outer text was written on the wood in ink.

41. See note 10. The editor refers to 'mehrere kleine Tafelchen von Lindenholz die auf beiden Seiten geschrieben waren' and which were preserved in 'Cement- oder Vitriolwasser'. Only one small fragment is transcribed, however. 41a. Add now a few tablets from Carlisle.

42. Y. Yadin, *IEJ* 11 (1961), p.41.

wills, certificates, contracts and the like. We do not expect to find this reflected in the East, where papyrus was made, or, indeed, in Italy where it must have been easily imported. But in the north-western provinces, where timber was plentiful, it will have been simple to produce wooden leaves which perhaps required only to be cut, flattened and smoothed off with an abrasive. As we might expect, there is a limited but significant amount of evidence in the literary sources of the Roman period which reflects the use of tablets of this sort. Our literary authorities generally think of them as having been made from lime-wood, which makes good sense for the Mediterranean countries but not for the more northerly provinces where the lime did not grow.⁴³

Before looking at the literary evidence in more detail, we must consider the ways in which these thin slices of wood were actually used for writing. We may begin by making a basic distinction between those leaf tablets which contain letters and those which contain accounts or other documents of an official nature.

(1) *The letter format.*

Pliny the Elder traces the origin of the phenomenon we are about to describe back to the use of leaves: *folia cultrato mucrone lateribus in sese bifida tabellas primum demonstrauere geminas* (NH 13.30). Two examples with which the Vindolanda letters may be compared were, in fact, already known. In the first place, the tablet from London (6.(i) g, above) was described as comprising two wooden leaves folded to face each other with the main text on the inner faces. The editors noted how the pieces match up at the break in the centre and the photograph suggests that the two leaves originally formed one piece of wood. The editors also noted that there is a small amount of 'stepping' to the extent of 1 mm at the joint. This could be deliberate or it could be the result of cuts made for scoring and folding on both inner and outer faces; if these cuts were slightly misaligned, the leaves would not separate cleanly. Thus, we may resolve the anxiety of the editors as to how the tablet was 'hinged'.⁴⁴ Our second example is the Aramaic tablet from the Dead Sea Caves which was described by Yadin as follows:⁴⁵ 'When opened, the four slats of wood (two of which were attached to each other) formed one slat about 17.5 cm wide and 7.5 cm long. It is inscribed in two columns, written from right to left. An incision had been made from the back so that the wood could be folded and it thus formed a kind of pinax.'

The Vindolanda letter format is identical. The leaf is used with the broad dimension as the width, the grain running horizontally. It is written in two columns (from left to right, of course), of which the left-hand column tends to be broader than the right. The leaf is then scored down the centre and folded with the letter on the inner faces. The address is written on the outer face of the half containing the second, or right-hand, column of the letter. Several of the Vindolanda letters contain notches cut in the right- and left-hand edges which we think might have served to anchor a binding cord which sealed the letter, either individually, or as one of a batch sent from one military post to another.⁴⁶ No indication of such notches is given in the example from the Dead Sea Caves but the London letter has a knob at the right-hand edge and a recess at the left which the editors thought was evidently designed to anchor the binding cord. It is possible that letters of this kind often travelled as part of a batch and were directed simply to individuals (identified by name and rank) within a military unit.⁴⁷

As for the writing of the text, the pattern followed is a common one (with small variations) which may be illustrated by reference to No. 21 and schematically represented in FIG. 6.

In other letters (on papyrus) the space at the left-hand side of line 2 was sometimes used for a docket recording the date of the receipt of the letter but this does not occur in our tablets.⁴⁸ The

43. The growth of the lime as a native tree ceases about 40 miles south of Carlisle, see W.H. Pearsall and W. Pennington, *The Lake District* (1973), pp.146-8 (we are indebted for the reference to Dr. W.E.H. Cockle).

44. E.G. Turner, O. Skutsch, *JRS* 1 (1960), pp.108-11. It is noteworthy that the date which the editors conjecture for this tablet, A.D.80-100, is very close to that of the Vindolanda tablets.

45. *IEJ* 11 (1961), p.41.

46. See *RMR*, pp.347 f. and note Cicero's use of the word *fasciculi* for bundles of letters (*ad Att.* 8.5.1, *ad fam.* 16.26.1). Examples from Vindolanda with notches are Nos. 21, 39 and 42 (the latter also has tie-holes).

47. See p. 50.

48. E.g. *RMR* 99.1. Cf. however, No. 82, below.

two-column format contrasts with Greek and Latin letters on papyrus. These are normally written in a single column, though in many cases the papyrus was folded several times into a narrow strip.⁴⁹ The only practical reason we can see for using the two-column format is that, in theory, the cut and fold would come between the columns and thus would not interfere with the writing; in practice, as we have said, the left-hand column very often overran the fold (which was made after the writing of the letter). We have not been able to determine whether Latin official or military letters on papyrus regularly employed a narrower column than Greek letters even on pieces of papyrus which were quite wide, though there certainly are some examples of narrow columns.⁵⁰ The format just described, occurring as it does in texts which come from a variety of places, is clearly a standard one for Latin letters. There can be no doubt that these thin slivers of wood were flexible enough to withstand folding without splitting apart.⁵¹

Finally, we should note one letter which presents an exceptional format (No. 37), being written on both sides of a single piece of wood. This carries only the name of the addressee, Crispinus, has several erasures and states that the letter is being written *from* Vindolanda. This must have been simply a draft which will have been discarded when the fair copy was made.⁵²

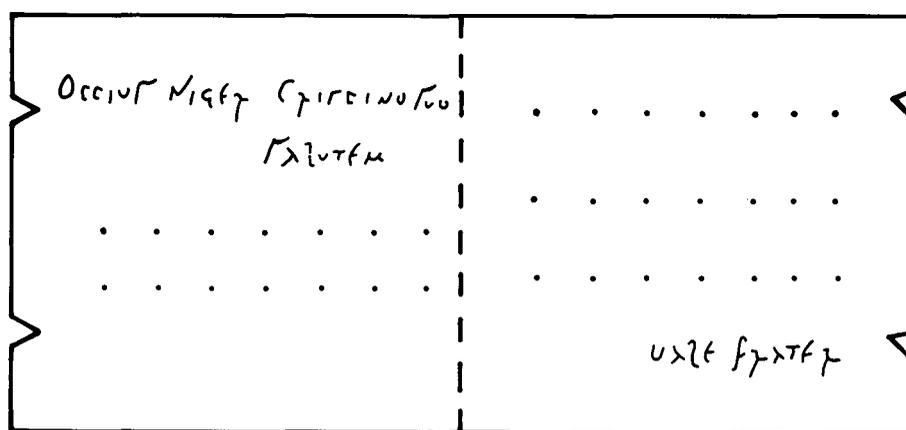


FIG. 6 Leaf-tablet: letter format.

(2) *The format of official documents.*

This may be analysed by reference to four examples, or groups of examples, which show significant differences, one from another.

(a). A group of official documents is comparable in format to the letters, being written along the broad edge of the leaf and parallel with the grain of the wood.⁵³ None of these documents is complete and none gives any concrete clue whether or not the writing might have continued in a second column on the right-hand side of a diptych (like the letters). It is not even clear that these documents were written on folded diptychs; the only slight indication comes in one example which has tie-holes and notches at the left-hand edge.⁵⁴

(b). One single example, an incomplete leaf, contains writing on both sides.⁵⁵ The text is written across the grain of the wood and, presumably, along the short edge of the tablet. This is

49. E.g. *P.Oxy.* 2862.

50. *ChLA* 452 is a letter written in three columns which are quite narrow; 457 is a letter in two columns and 487 is an official letter in two columns.

51. See above, pp. 29f., 37. When No. 21 was found, the two halves of the diptych were still firmly joined.

52. Note that No. 3, an official document of some kind, is also written on both sides of a single leaf. See also No. 26 and perhaps No. 91.

53. Nos. 1, 2, 6, 7, 11, 12, 13.

54. No. 1.

55. No. 3. The erasures in this text (see introductory comments, No. 3) suggest that it might have been merely a draft.

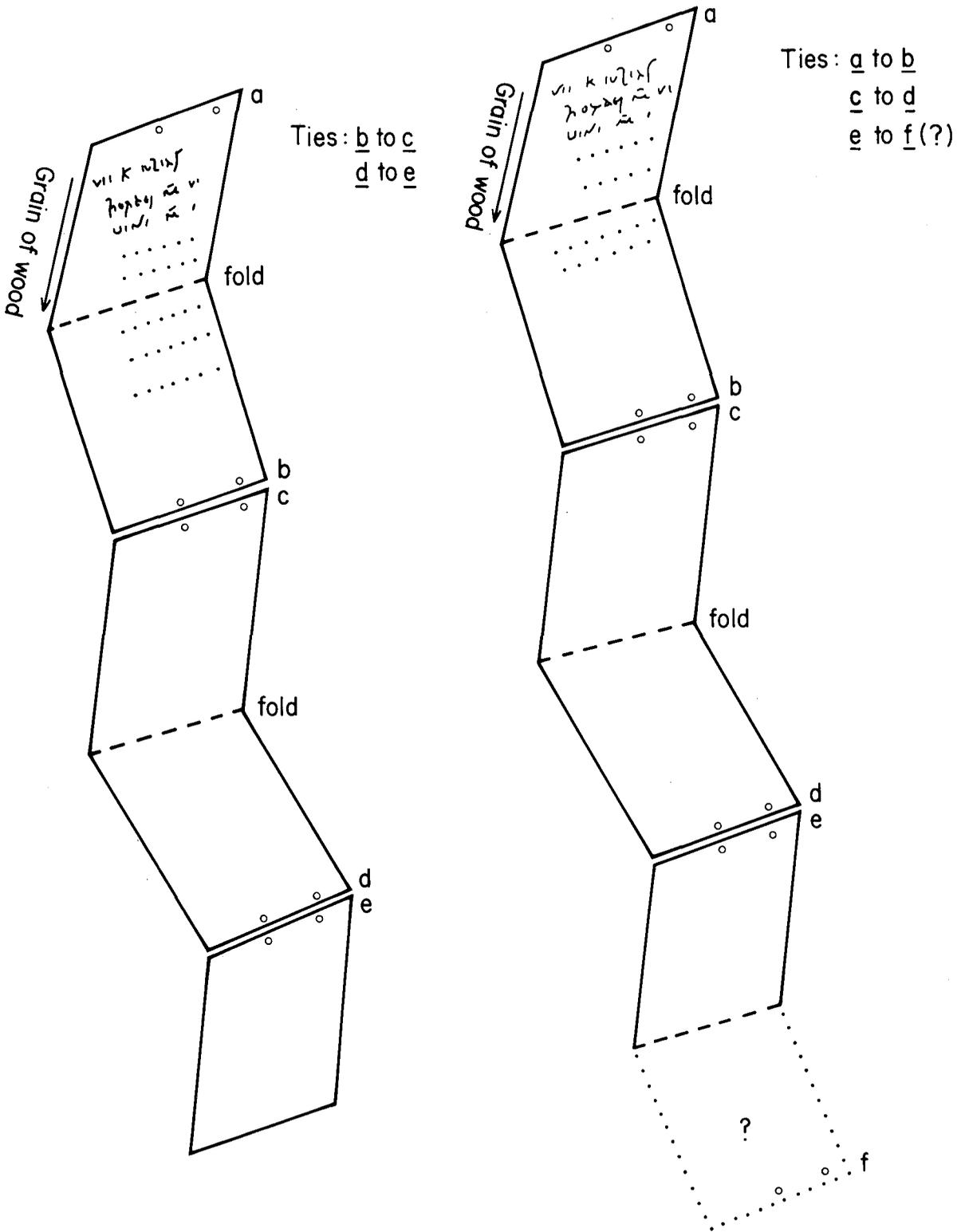


FIG. 7 Left: Leaf-tablets, concertina format.
Right: Leaf-tablets, independent diptychs.

the case on both sides, but the curious feature is that the writing on one side is upside down in relation to that on the other. It is impossible to rule out the notion that this is merely a rough copy of something which was subsequently put into a proper form.

(c). We have one diptych without notches or tie-holes which contains an account of

foodstuffs.⁵⁶ The writing is across the grain and parallel with the short edge of the tablet. Presumably, like the letters, this diptych was folded with the writing on the inner faces. Turner has recently shown that this characteristic is described in Latin by the term *transversa charta* (i.e. with the page rotated through 90° in comparison with the letter format) and has described the examples found on papyrus as *rotuli* or vertical rolls.⁵⁷ He notes that this format occurs only in documents, and we might equally emphasise the fact that writing *transversa charta* does not occur in the letters from Vindolanda but only in the documents (as may be seen from (a), above, the converse is not true).

(d). Turner has also shown that the characteristics of the *rotulus* are applicable to our final example, a multi-leaved set of tablets containing a record of food supplies.⁵⁸ The detailed physical description of this document need not be repeated here, save for the purpose of correction.⁵⁹ It is evident that four of the five substantially preserved pieces comprise two diptychs (like that described in (c), above), each of which measured about 17 by 6.5 cm. The fifth piece may have stood as a single half-diptych at the end of the series; its general state of preservation suggests that the writing on it may not have been protected by a corresponding lower half, and the bottom edge looks as if it has been severed much more cleanly than the edge of the other leaves, which were scored on the back (after writing) to enable the leaf to be folded latitudinally without being completely severed (hence the fibres at the point of folding are ragged and bent). The order of the leaves can, of course, easily be established by the date sequence in the text itself. We should also note that there are tie-holes and V-shaped notches at the top and bottom edges of each diptych and at the top of the fifth piece. The notches may have served to anchor binding cords passed round the outside of the bundle.⁶⁰ The angled cuts at the corners (top left of the third and fifth pieces and bottom left of the fourth) are perhaps most likely to indicate to the user the location of the left-hand margin in order to enable him to hold the set of tablets the right way up when opening it.

It is clear that this multi-leaved document could well have been arranged in a concertina format, the tops and bottoms of each diptych being joined by thongs through the tie-holes not to each other, but to the bottom and top of the preceding and following diptych (FIG. 7, left). The reader could then, by grasping the top and bottom leaves of the bundle and drawing them apart, obtain a single continuous column of text. The only possible alternative, as far as we can see, is that these leaves were arranged as a series of individually-sealed and independent diptychs which were simply tied into a bundle with strings around the outside (FIG. 7, right). The concertina format is obviously the more attractive and more convenient to use, and Turner has favoured it. It seems obvious that if the fifth piece was a single half-diptych at the end of the series then the concertina format is much the more likely arrangement. If it did have a corresponding lower half (now lost), then the format of independent diptychs cannot be excluded (though even then the concertina remains possible).

This can be described as comparable to a *rotulus* — a vertical roll written *transversa charta*. Turner has challenged the comparison with the codex, and it is appropriate to emphasise that we agree that the Vindolanda document can in no way be described as a primitive codex. It clearly lacks one of the features essential to the codex form, namely writing on both sides of the leaf (some tablets, e.g. Nos. 3, 37, are written on both sides, but there is no sign that these were arranged in this kind of format). We consider, nevertheless, that the existence of this wooden

56. No. 5. There may, however, have been tie-holes and notches in the lost parts.

57. Turner, *RV*, pp.26–53.

58. No. 4; Turner, *RV*, pp. 51–3.

59. The format was described in *Britannia* v (1974), pp. 361–4 and *ZPE* 18 (1975), pp. 237–41. Turner, *RV*, p.52 was correct to point out the misleading designation of the 'direction of the writing' by the use of arrows which implied that the writing was parallel with the broad edge of the leaf.

60. On such slots see E.G. Turner, *JRS* xlvi (1956), p.116 (citing also *Negotia*, 137), I.A. Richmond, *Antiq.Journ.* xxxiii (1953), pp.206 ff., R. Marichal, *AEHE* sect.iv 1972–3, pp.369–72. These are to be distinguished from nicks in the edges of tablets in a set, placed to indicate the order of the leaves (e.g. W. Schubart, *Das Buch bei den Griechen und Römern* (3rd ed., 1961), p.29, P.J. Parsons, *JEA* 57 (1971), p.165).

notebook in this format at a period which was clearly an important one for the development of the codex⁶¹ may be of some significance for that development.

Turner has drawn attention to two passages in our literary authorities which have a particular bearing on the *rotulus*.⁶² Suetonius (*Divus Iulius* 56.6) clearly describes the use by Julius Caesar of the paged notebook, superseding the previous practice of sending reports written *transversa charta*. Second, a passage from Juvenal (6.482), *longi relegit transuersa diurna*, is said to refer to accounts written on a narrow roll, held vertically. These examples indicate that we might well expect to find evidence for the use of such wooden leaves in our literary sources and that such literary evidence might be illuminated in turn by the evidence of the physical objects now available to us for the first time in considerable quantities. A fairly brief review of our sources will suffice.⁶³

Our most striking piece of evidence comes from the historian Herodian, writing in the third century. Describing the list of proscribed persons drawn up by the Emperor Commodus, which eventually led to his assassination, he writes:⁶⁴

λαβὼν γραμματεῖον τούτων δὴ τῶν ἐκ φιλύρας ἐς λεπτότητα ἡσκημένων ἐπαλλήλω τε ἀνακλάσει ἀμφοτέρωθεν ἐπτυγμένων γράφει, ὅσους χρὴ τῆς νυκτὸς φονευθῆναι.

A recent translation of this passage, which refers to 'hinged tablets', is a trifle misleading⁶⁵ for there is no mention of hinges here. Clearly Herodian is talking of thin tablets which were made of lime-wood and were folded face to face by being bent (*ἀνακλάσει ἐπτυγμένων*). These words amount to an accurate description of the wooden leaf tablets found at Vindolanda and, more recently, elsewhere (except, of course, that the British examples are not made of lime-wood⁶⁶). That the authenticity of Herodian's story has been questioned is also of some interest because the suspicion springs from the fact that Cassius Dio tells a similar story about the Emperor Domitian in which there is also a reference to the kind of writing-tablets used:⁶⁷

καὶ σφρων τὰ ονόματα ἐς σανίδιον φιλύρινον δίθυρον ἐσγράψας.

Again, the description is obviously of a diptych made of lime-wood. If it is correct that Herodian has borrowed the tale from Dio,⁶⁸ the fact that he has amplified the description with details presumably drawn from his own knowledge of everyday objects is noteworthy. Dio makes further mention of such tablets (*γραμματεῖα οἷα γε ἐκ φιλύρας ποιεῖται*) in a story which he tells about Ulpian Marcellus, governor of Britain in the reign of Commodus.⁶⁹ We may remark the fact that Marcellus is said to have made use of them whilst campaigning in the north; this presupposes their presence on the frontier area, a fact which the finds at Vindolanda

61. The most significant modern works on this controversial subject include: T. Birt, *Das antike Buchwesen in seinem Verhältnis zur Literatur* (1882), *Die Buchrolle in der Kunst* (1907), pp.20 ff., *Kritik und Hermeneutik nebst Abriss des antiken Buchwesens* (1913), pp.247–83; Schubart, *op.cit.* (in note 60), pp.37 ff.; F.G. Kenyon, *Books and Readers in Ancient Greece and Rome* (1951); E.G. Turner, *Greek Papyri, an Introduction* (2nd ed., 1980), pp.7–16, *The Typology of the Early Codex* (1977); B.M. Metzger, *The Text of the New Testament* (1968), pp.5 ff.; T.C. Skeat, *Cambridge History of the Bible* (1974) ii, ch.3; H.A. Sanders, *Univ. Michigan Quarterly Review* 1938, pp.95–111; C.H. Roberts, *PBA* 40 (1954), pp.169–204; F.W. Beare, *Univ. Toronto Quarterly* 14 (1944–5), pp.150–67.

62. Turner, *RV*, pp.31–2, 66.

63. The evidence is more fully set out in *ZPE* 18 (1975), pp.237–52. The summary which follows modifies, in some minor respects, the views there expressed.

64. Herodian, 1.17.1.

65. The Loeb edition by C.R. Whittaker.

66. See above, pp. 27, 37.

67. Dio 67.15.3.

68. As maintained by F. Kolb, *Literarische Beziehungen zwischen Cassius Dio, Herodian und die Historia Augusta* (1972), pp.38–47. Some interesting details are adduced by J. Gagé, *REL* 46 (1968), pp.280–303, particularly the bas-relief of Fulvius Salvius from Ostia illustrating the *sortes Hercules* (whether or not rightly connected with the death of Commodus). The plate shows a stylus diptych which Gagé identifies as the *sortes*, seeing the outstretched hand of Hercules as a 'gesture de justification' (p.282 f.); but the plate does not allow certainty that the hand held a set of tablets, let alone lime-wood tablets.

69. Dio 72.8.2.

strikingly confirm. These references might all appropriately be taken in connection with the format which we have described above as the letter format.

Apart from the passages of Suetonius and Juvenal, there is one later testimony which might be taken to refer to something like the wooden counterpart of the *rotulus*. In discussing technical aspects of the use of bark as a writing material, Isidore of Seville wrote:

*codex multorum librorum est; liber unius uoluminis. et dictus codex per translationem a caudicibus arborum seu uitium (quasi caudex) quod se in multitudinem quasi ramorum contineat. uolumen liber est, a uoluendo dictus. liber est interior tunica corticis quae ligno cohaeret . . . quia ante usum chartae uel membranorum de libris arborum uolumina fiebant, id est compaginabantur.*⁷⁰

This means that *volumina* were made from the interior coat of bark, presumably cut into sections and joined together (*compaginabantur*). This seems to us to allow, though hardly to compel, the interpretation that Isidore is describing an articulated *rotulus* made from slivers of wood. We might note that, in general, the ancient sources do not differentiate carefully between the use of bark and the use of the wood of the tree. John the Lydian refers to the ancient practice of using bark and lime-wood tablets for writing.⁷¹ Martianus Capella mentions the use of the bark of the lime tree, and the evidence of a letter of Jerome shows that the use of bark for correspondence was known in Cicero's time to be quite an old practice.⁷² The sources sometimes refer to the manufacture of tablets *e cortice* and sometimes *e libro*, and trees other than the lime are said to have been a source of material for such tablets.⁷³ As a further complication, it should be remarked that, although Herodian and Dio in particular suggest that the lime-wood tablet is distinctively of the leaf type, there is some evidence that lime-wood might also be used for making tablets of the stylus type.⁷⁴ It is clear that the Vindolanda leaf tablets were not made from lime-wood, but this does not substantially affect our attempt to relate their format to the literary evidence for tablets which are obviously of essentially the same kind.

We have deliberately refrained from referring to our multi-leaved document as a *codex* of wooden tablets. This would not be accurate. We know that *codices* or *codicilli* of wooden tablets are normally bound sets of stylus tablets joined by thongs passed through holes bored in the edges.⁷⁵ It does seem to us, however, that a contribution might be made by considering some other literary evidence for sets of writing-tablets. It must be admitted that there are very few

70. Isidore, *Orig.* 6.13. This passage is assigned to Suetonius in the edition by Reifferscheid (p.134), apparently on flimsy grounds. The attribution is firmly rejected by Birt, *Das antike Buchwesen in seinem Verhältnis zur Literatur* (1882), p.44 note 2, cf. J. Fontaine, *Isidore de Séville et la culture classique dans l'Espagne wisigothique* (1959), p.16; we find no statement by Fontaine about Isidorus's source of information for this passage, but the assumption that it goes back to the classical period is supported by the fact that, in the previous section, also concerned with writing materials, he quotes the Republican poet Cinna.

71. Lydus, *de mensibus* (Wünsch), p.14: οἱ γὰρ ἀρχαῖοι ξύλοι καὶ φλοιοῖς καὶ φιλυρίνοις πίναξι πρὸς γραφήν ἐκέχρητο.

72. Jerome, *Ep.* 8.1, *ante chartae et membranorum usum aut in dedolatis de ligno codicillis aut in corticibus arborum mutua epistularum alloquia missitabant*, Martianus Capella 2.136, cf. Pliny, *NH* 13.69, Symmachus, *Ep.* 4.34. Galen (Kühn) xviii.630 also refers to the use of lime-wood for writing-material and a similar reference might be concealed in *O.Petr.* 267 (A.D. 43), ἔχω παρὰ σοῦ . . . ψα . . . γας φιλυρίνας ἑπτα.

73. See Martianus Capella, 2.136, Pliny, *NH* 13.69, 16.35, 16.68.

74. This may be implied by Aelian, *VH* 14.12, φιλυρίον εἶχε καὶ μαχαίριον ἵνα ξέη τοῦτο. Note also Pliny, *NH* 16.14, a scout sends messages to his general, *incidens litteras a suco*, a phrase which has defied precise explanation. Lydus (cited in note 71) says that τὰ ῥήματα τῆς ἐλευθερίας were written on lime-wood tablets; these ought to be deeds of manumission, but the closest illustration we can find is *CPL* 171, a statement of the payment of the *uicesima libertatis* which might serve as proof of the acquisition of freedman status (cf. J.F. Gilliam, *AJP* 71 (1950), pp.437–8). This is a stylus tablet, as one would expect (cf. the birth certificates in *CPL* 148–64).

75. Note in particular Suetonius, *Nero* 17.1, Seneca, *de breu. uitae* 13.4, Pliny, *NH* 35.7, Asconius 58b, 61c, 33c (see H.A. Sanders, *CP* 29 (1934), pp.251–2) and cf. H.I. Bell, *JRS* xxvii (1937), p.31; H.A. Sanders, *AJA* ser.2, 32 (1928), pp.310–2; R. Marichal, *op.cit.* in note 60; W. Schubart, *Das Buch bei den Griechen und Römern* (3rd ed., 1961), pp.57, 62, 67, 137, 143. The stylus tablets from Vindolanda show the characteristics of such codices, see below, pp. 44–5.

items which cannot be taken to refer to *codices* of stylus tablets; but, if one keeps an open mind, it seems to us likely that some pieces of evidence might well refer to sets of leaf tablets.

The Latin word most commonly used to refer to notebooks is *pugillaria* and it is this which is most relevant to our present enquiry, even though the word is sometimes demonstrably used to refer to tablets of the stylus type.⁷⁶ As the derivation of the word suggests, *pugillaria* are small tablets which could easily be held in the hand. A fragment of Suetonius makes explicit the connection between *pugillaria* and *codices*:

*nec pugillaria nec pugillar dici potest aliter, quia proprium nomen est huius rei codices, inde per diminutionem codicilli, ut pute codicilli triplices.*⁷⁷

This might very well be thought to refer to stylus tablets, as might a passage from the fourth-century grammarian Charisius (*pugillus est qui plures tabellas continet in seriem sutas*) and the phrase *pugillaribus codicibus* which occurs in a second-century papyrus.⁷⁸ But the same cannot be said of an epigram of Martial on *pugillares citrei* which contains the line *secta nisi in tenues essemus ligna tabellas*; here the use of *tenues* seems definitely to indicate tablets of the leaf type which are conspicuous for their thinness.⁷⁹ This ought also to apply to the remark of Pliny the Elder on the use of maple for veneering (*NH* 16.68, quoted above, p. 30); here *pugillares* are more naturally taken to indicate tablets of the leaf type since their thinness invites a comparison with veneers. Also, the reference in Ausonius (*Epig.* 146.3) to a *bipatens pugillar* suggests a leaf tablet in the letter format described above (pp. 37–8).

Some other items on *pugillaria* are perhaps worth noting briefly. Pliny the Elder used to work with a slave standing by him holding a book and notebooks (*libro et pugillaribus*) — the latter, presumably, being inexpensive working notebooks.⁸⁰ Pliny himself cites Homer to prove that the use of *pugillaria* was of considerable antiquity.⁸¹ It is impossible to be sure that Pliny has in mind *folded* tablets; Herodotus uses the term *δίπτυχος* in a context which makes it clear that this was a tablet of the stylus type; but there is one passage in the *Iliad* which looks as if it refers to tablets which were, strictly speaking, folded.⁸² The Greek word *πυκτίον* is evidently similarly derived, and Galen uses the word *πυκτίς* for a notebook made from skin.⁸³ In sum, we might say that, although the evidence is far from consistent or conclusive, there is reason to believe that our ancient sources, in their references to *pugillaria*, envisage not only sets of stylus tablets but also wooden leaf notebooks of the type found at Vindolanda. To be sure, we also have evidence for the use of parchment notebooks in the later part of the first century. The best evidence for this comes from Martial and has been carefully analysed by modern scholars.⁸⁴ The parchment notebook, too, has to be put into the same context of materials and formats as our wooden leaf notebook. There are no physical examples of parchment notebooks known to us, but it is worth drawing attention to a parchment from Dura-Europos which was dated by Cumont to the first century B.C. or A.D..⁸⁵ The series of ties at the right-hand edge of the sheet prove that a corresponding second sheet must have been attached at the right; the writing on this diptych was on the interior faces, the exterior being left blank. If this is correct, it does

76. E.g. Martial, 14.7, Prudentius, *Peristeph.* 9.15–6.

77. Suetonius (Roth), p.311. The connection is also made in Catullus, 42.5, 11.

78. *GL* I.97. *CPL* 222.

79. Martial, 14.3.

80. Pliny, *Ep.* 3.5.15, cf. C.H. Roberts, *PBA* 40 (1954), p.171. Other references to *pugillaria* without any significant details in Suetonius, *Aug.* 39, Seneca, *Ep.* 15.6, 108.6. The use of the word in Britain is attested by the fact that it passed into Welsh and Irish (*peuwillawr*, *pólaire*); we are indebted for this information to Prof. Emrys Evans, cf. Jackson, *LHEB*, p.79.

81. *NH* 13.69.

82. Herodotus 7.139, *Iliad*, 6.169 (cf. perhaps Euripides, *Iph. in Taur.* 727).

83. Galen (Kühn) xii.423.

84. See the works cited in note 61.

85. *Fouilles de Doura* (1926), pp.296 ff., with Plate cv. We should perhaps compare *Digest* 32.52.5 on *librorum appellatio (sed et membranae nondum consutae continebuntur)*, taken by Birt, *Die Buchrolle in der Kunst* (1907), p.21 to indicate a roll rather than a codex.

provide, in broad terms, a parallel for our wooden leaf diptych.

Our evidence therefore indicates two important features of writing-materials in the late first and early second centuries A.D. First, that the wooden leaf tablet was a common and well-known medium. Second, that the practice of folding writing-materials to make notebooks was also current. Our new evidence from Vindolanda is therefore of the first importance in that it provides physical data to illustrate these practices. In short (without making any assumptions as to the relationship between the Vindolanda tablets and the *codex*) it provides us with a unique and primitive example of an early book.⁸⁶

The Vindolanda tablets should also modify our view of Roman writing-materials in another important respect. Earlier finds of writing-tablets, as well as representations of tablets in Roman art, have led us to believe that, apart from papyrus and skins, the commonest type of writing-medium in the Roman world was the stylus tablet. But the overwhelming preponderance of leaf tablets in the Vindolanda collection gives us leave to doubt whether this is really an accurate impression. One might explain the high rate of survival of stylus tablets elsewhere by the fact that they are larger, more solid and less liable to disintegration. It is notable, too, that the texts on stylus tablets show a heavy preponderance of legal documents, which might reasonably be thought to require a more durable medium for longer survival. Leaf tablets could well be a more suitable medium for more ephemeral texts like the letters and accounts which form the bulk of the Vindolanda collection. They have the advantage of being cheaper, easier to make and simpler to use (though not, of course re-usable like the stylus tablets). In spite of the fact that very few such tablets were known prior to the discovery at Vindolanda, subsequent discoveries lead us to conclude that the use of leaf tablets was probably widespread, at least in the north-western areas of the Empire. The reason is obvious. These provinces were the furthest-removed from the source of papyrus, and it seems to us likely that the wooden leaf tablet was the counterpart of papyrus in these areas of the Roman world.

(3) *The format of the stylus tablets.*

This can be dealt with fairly briefly, since the data presented by the relatively small number of stylus tablets do not significantly modify conclusions reached by earlier scholars.⁸⁷ We have been somewhat hampered by our inability to make any progress in reading the exiguous remains on these tablets, several of which may have been used more than once. Two examples contain writing in ink rather than stylus scratches, but there are parallels for this phenomenon (see above, p. 36). Sets of stylus tablets normally consist of two or three *tabellae* which are bound together by thongs passed through holes bored in the rim. The front of each tablet is hollowed out to receive the wax, whilst the back is generally smooth. It is, however, normal to find that the back of one of the tablets in a set has a strip hollowed out in the centre, parallel to the short edge. This would carry the seals of the witnesses in a legal document, the signatures being written in ink on one or both of the panels thus formed on either side of the strip. This format can be simply illustrated (FIGS. 8 and 9).

Our Vindolanda examples, most of which are fragmentary or incomplete, are mostly explicable in terms of the format described. But there is one item with unusual features which cannot be so easily explained. The tablet with ink writing (No. 113) is hollowed out on *both* sides, as are two other tablets (Nos. 112, 117) which have traces of incision. But the former has a *raised* strip running down the centre parallel to the short edge (i.e. one side of the tablet has been hollowed in two recessed panels with this strip running between). The latter two examples, after first being hollowed on both sides, have had a strip more deeply cut in one side; this is more clearly identifiable as the seal-bearing strip discussed above. As may be seen from the diagram, one would expect to find this on the back of the second tablet in a diptych or triptych.

86. As comparative material from other periods and areas we might adduce the Chinese wood-strip book in concertina format, see A.W. Hummel, *JAOS* 61 (1941), pp.71–6, M. Loewe, *Documents of Han Administration I* (1967), pp.28 ff., and writing-boards attached by hinges in Babylonia in the first millenium B.C., see D.J. Wiseman, *Iraq* 17 (1955), pp.3–13, A.K. Grayson, *Assyrian and Babylonian Chronicles* (1975), p.14, M. Howard, *Iraq* 17 (1955), pp.14–20.

87. See the items cited in note 75.

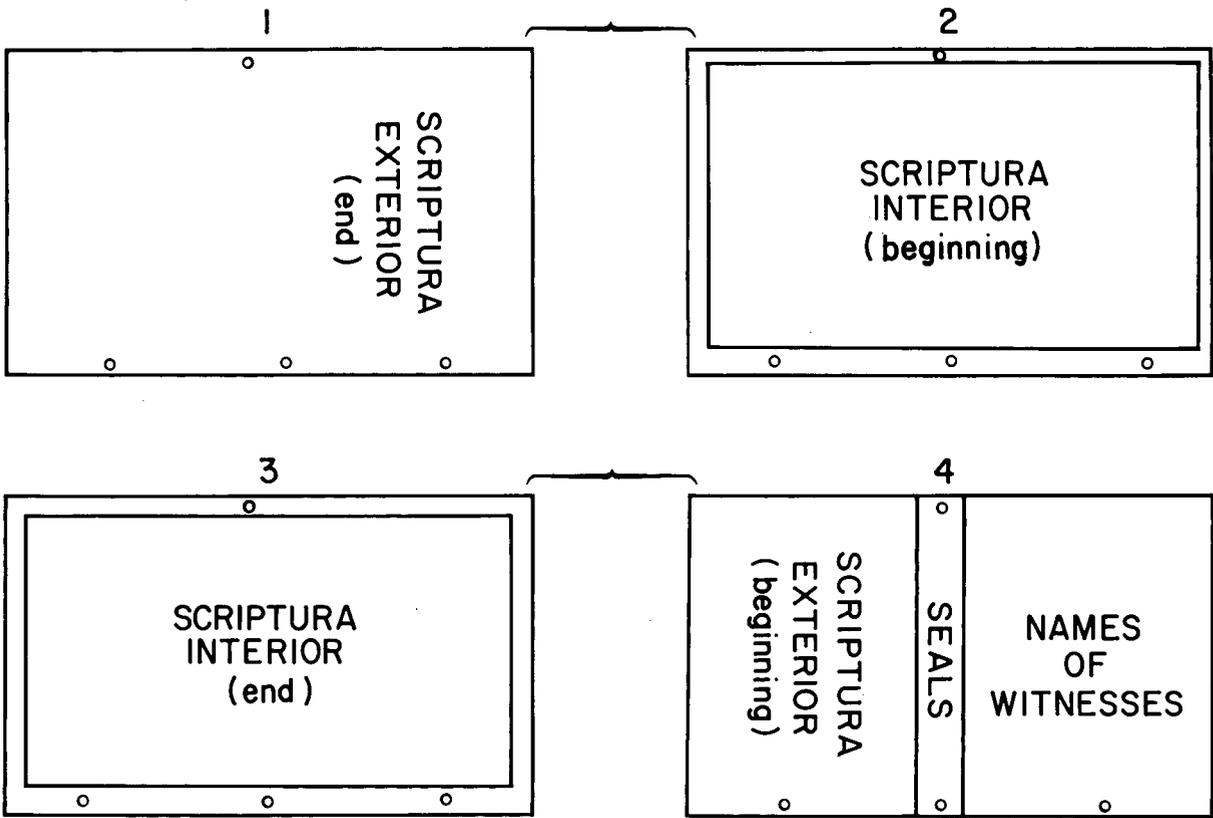


FIG. 8 Stylus diptych.

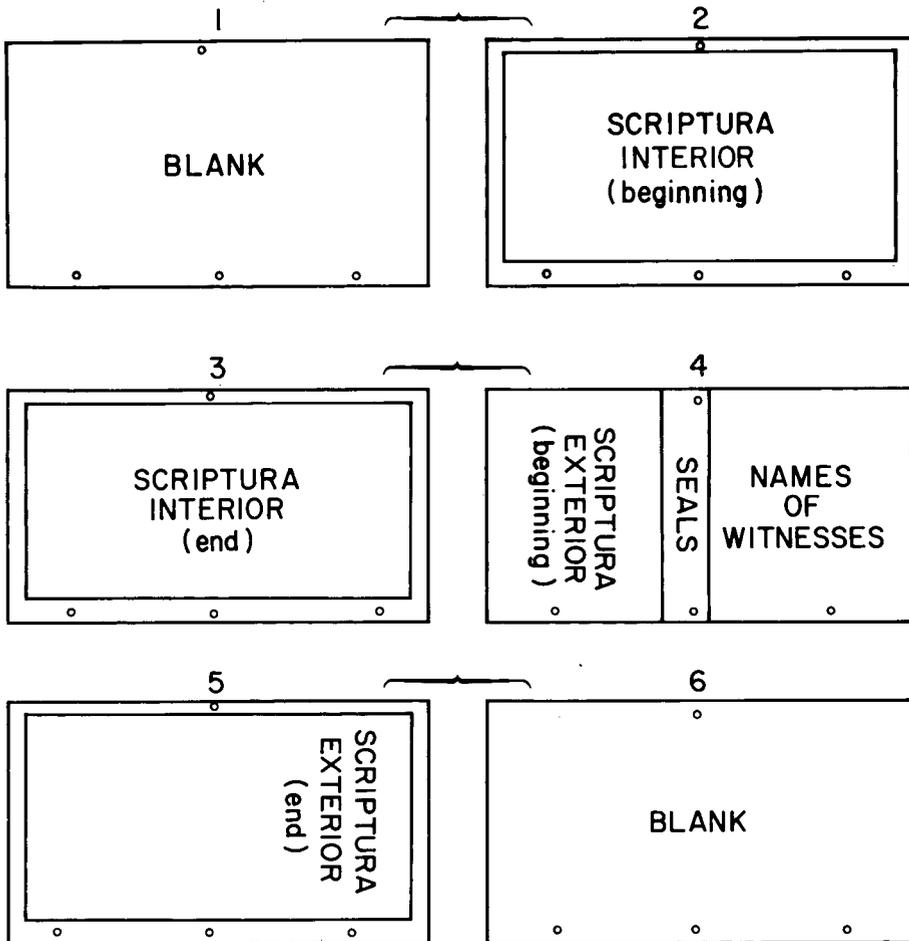


FIG. 9 Stylus triptych.

III. THE CONTENT AND ITS SIGNIFICANCE

Following the arrangement of the texts in Part II, the content of the writing-tablets may best be discussed under the headings of Documents and Letters. Here we give only a general account of the importance of the information to be derived from the tablets; for more detailed analysis we refer the reader to the introductory comments and the notes accompanying the texts.

A. THE DOCUMENTS

The military records preserved at Vindolanda invite comparison with the papyri from Dura-Europos on which are preserved documents of the *cohors xx Palmyrenorum*.¹ Other military papyri from different periods and locations also help us to explain and interpret our texts² and there is, in addition, a certain amount of literary evidence (particularly the treatise of Vegetius³) which casts some light on the processes of documentation in the Roman army. It must be emphasised, however, that the Vindolanda texts do not approach the Dura material in quantity or degree of detail and that, for the most part, we have to explain the Vindolanda material in the light of the evidence which we already possess. That is not to say that it does not offer us any new evidence, but rather that most of the texts are so damaged or difficult to read that we must be cautious in interpreting texts which appear to diverge from the established corpus of military documentation.

A small number of the Vindolanda texts appears to bear on the recording of unit strength, noting the assignment of individuals or groups of soldiers in relation to the overall strength of the unit (Nos. 1, 2 and perhaps No. 3). We are unsure how precisely to classify these texts but it is interesting to note that No. 1, which appears to record a total of 343 men assigned to the workshops (*fabricae*), is very similar in form to an ostrakon recently published by Marichal.⁴ The absence from the Vindolanda texts of the elaborate detail and titlature which is often present in papyrus records of this sort may be explained either by the variation in the practices of individual record-keepers or by the supposition that our texts are, as it were, working notes which might later be incorporated in a more elaborate final version. It is perhaps worth noting that two of the texts which we have tentatively put into this category are written parallel with the broad edge of the leaf and along the grain of the wood, unlike some of the other documents (see pp. 38-41);

1. Originally published by C.B. Welles, R.O. Fink, J.F. Gilliam, *The Excavations at Dura-Europos, Final Report v, Part 1* (1959), mostly republished in *RMR* and again, with a small amount of new material, by R. Marichal in *ChLA* vols. VI-IX.
2. Almost all relevant documents are to be found in *RMR* and *ChLA* vols. IX-XI. For the range of documentation see the valuable article by G.R. Watson, *ANRW* II.1, pp.493-507.
3. Book II is of particular interest. Vegetius deals for the most part with legionary units but much of what he says must apply, *mutatis mutandis*, to auxiliary units as well.
4. R. Marichal, *CRAI* 1979, p.439 (see No. 1, introductory comments).

but whether they were originally part of diptychs we cannot say for certain (see Nos. 1 and 2, introductory comments).

Apart from the question of the identity of the unit or units involved, which is discussed below, the texts present some interesting, though tantalisingly fragmentary, information. It is a striking fact that the detailed assignments recorded in No. 1 are mostly connected with building and construction work; no other military record of this sort exhibits such a degree of coherence in the activities recorded. This tablet was found in Layer 10, which must mean that it belongs to the earlier part of the period represented by Layers 8 and 10 (i.e. ca. A.D. 95–105) and thus it can perhaps be assigned to the earliest phase of the second fort at Vindolanda (see above, p. 20). We are therefore tempted to suggest that it records activities connected with the actual construction of the new fort. References to the building of a bath-house, to the collection or processing of lead, to clay, rubble and possibly pitch, plastering and the working of kilns are all appropriate to major construction-works. If we are correct in our belief that this text may refer to the personnel of the *cohors viii Batauorum*, it casts an interesting light on the range of activities performed by the soldiers of an auxiliary unit.

Activities connected with the *fabrica* at Vindolanda are perhaps also recorded in No. 3. Here we have references to *fabri* and perhaps to the manufacture of shields and swords. We cannot doubt that manufacture of this kind was an important part of the activity at auxiliary forts, though our documentary and literary evidence is largely silent about such matters, normally discussing it only in connection with legionary soldiers.⁵

It is fair to say that, apart from the pay-records on papyrus, the Vindolanda tablets which contain accounts (notably Nos. 4–6) are now our best examples of this kind of document. Vegetius (2.19) writes: *totius enim legionis ratio siue obsequiorum siue militarium munerum siue pecuniae cotidie adscribitur actis maiore prope diligentia quam res annonaria uel ciuilis polyptychis adnotatur*. What was true for the legions must also have been true of the auxiliary units and our Vindolanda texts are particularly valuable for the light they cast on what we might call the quartermaster's department. The system of accounting for receipts or disbursements of commodities on a daily basis is attested in No. 4,⁶ the longest document in the collection. The account is evidently not only concerned with food supplies but also records transactions in cash. Its main value, however, lies in its attestation of the range of commodities in use: *hordeum*, *ceruesa*, *uinum*, *acetum*, *muria* and *axungia* are all mentioned. No. 5, which appears to record purchases of commodities, includes a large number of different meats, as well as *sal*, *condimenta*, *frumentum* and *bracis*. This does give us some reason to be sceptical of the common view that meat was eaten only rarely in the Roman army.⁷ These isolated examples serve to provide some notion of the extent and complexity of what must have been a truly massive bureaucratic operation within a unit in the army.

In dealing with the documents we have operated on the assumption that these records originate at Vindolanda and refer to the military units which occupied the fort. At any rate, there is no positive reason to think that any of them originated elsewhere. We must now attempt to summarise the information to be gleaned about the identity of the units and the personnel who served with them. In doing so, we must also draw upon the evidence of the letters, which are more fully described in the next section of this chapter.

We have confidently identified two auxiliary units in the tablets. There is *cohors viii Batauorum*, commanded by a *praefectus* named Flavius Cerialis (Nos. 2, 23) and *cohors i Tungrorum*, commanded by a *praefectus* named Crispinus (No. 30). The existence of *cohors viii Batauorum* was not previously attested but there is no difficulty in fitting it into the series of Batavian units already known (see No. 2 introductory comments and line 2, note). We think that there is good reason to believe that it was *equitata*. *Cohors i Tungrorum* was already well known.⁸ It appears on a

5. Vegetius 2.11.

6. For a commodity received see No. 4.22 and note. For the issue of food by *cibariatores* see C. Préaux, *CE* 26 (1951), p.133 and *O.Bod.*2004–2040.

7. Still to be found in Webster, *RIA*², p.255, cf., however, R.W. Davies, *Britannia* ii (1971), pp. 122–42.

8. See the references given in note 10.

diploma of A.D. 103, where it is milliary, but by 122 it had been reduced to quingenary size (how long before that date is uncertain). It is attested at Carrawburgh in the reign of Hadrian, at Castlecary under Antoninus Pius and in the third century it became the garrison of Housesteads (No. 30.4 note). A more interesting piece of evidence for it is a fragment of a diploma found at Vindolanda; this dates to the reign of Antoninus Pius and names a soldier of *cohors i Tungrorum*.⁹ There is no evidence to suggest that this unit was *equitata* (though its sister unit, *cohors ii Tungrorum*, was part-mounted¹⁰).

Since the *praefecti* of both these cohorts were evidently receiving letters at Vindolanda, we begin with the supposition that each unit garrisoned the fort at some time. The main difficulty lies in deciding on the sequence of occupation. The archaeological evidence is only circumstantially helpful. Of the tablets which refer to the Batavian cohort, No. 2 comes from Layer 8 and No. 23 from either Layer 8 or Layer 10; No. 9, which *may* also refer to it, comes from Layer 8. The only text which mentions the Tungrian unit (No. 30) also comes from Layer 8. Layers 10 and 8 taken together represent the period *ca.* 95–105 and within this period Layer 10 is the earlier deposit. The evidence of tablet No. 1 now becomes crucial. We know that this comes from Layer 10, the earlier part of the deposit. If, as we suggest, it reflects the strength of an unnamed quingenary unit, the probability is that it is to be referred to *cohors viii Batauorum*. It thus makes sense to suppose that the Batavian quingenary unit was in occupation in the middle 90s (it may, indeed, have built the second fort, see above, p. 19) and was succeeded within a few years by the Tungrian cohort. This unit may have been moved forward after the construction of Hadrian's Wall, but the evidence mentioned above has always made it difficult to believe that it went direct to Housesteads. The diploma from Vindolanda complicates the matter even more and we refrain from further discussion, except to point out that the sequence of units which we propose at Vindolanda between A.D. 95 and 105 leaves open the possibility that the Tungrian cohort's occupation continued for a longer period.¹¹ There is no other evidence at all for the fate of the Batavian cohort.

One piece of evidence is difficult to explain if this sequence of occupation is correct. Tablet No. 39 comes from Layer 6 (*ca.* A.D. 105–15) and contains a letter addressed to a *decurio* named Lucius, who must belong to an *ala* or to a *cohors equitata*. Our occupation-sequence would preclude the possibility of his being a *decurio* of *cohors viii Batauorum (equitata?)*, and *cohors i Tungrorum* was not *equitata*. However, Lucius's unit is not named and, in view of the many possible explanations, it seems pointless to speculate further. Suffice it to say that this evidence is far too indefinite to disprove our suggested sequence of occupation.

Finally, there are three other important pieces of evidence which are relevant to the military establishment and need to be mentioned here despite the fact that they are all supplied by letters rather than by documents. First, there is the attestation of a *centurio regionarius* at Luguvalium (No. 22).¹² This serves to emphasise the strategic importance of Carlisle in the military establishment during the period which saw the Roman withdrawal from southern Scotland. The second point concerns the identity of the writer of the letter in No. 22. Only his *cognomen*, Karus, survives in full and we have proposed the hypothesis that he might be C. Iulius Karus, *praefectus* of *cohors ii Asturum*, who was decorated for his service in Britain. We recognise, however, that

9. We are grateful to Margaret Roxan for providing information about this diploma.

10. P. Holder, *AAT*, p. 219; J. Smeesters, *Studien zu den Militärgrenzen Roms II (Vorträge des 10 internationalen Limeskongresses in der Germania Inferior, 1977)*, pp. 175–86.

11. The date of the diploma is A.D. 146. Vindolanda was not occupied by a military unit at the time, but it might be supposed that the discharged soldier of the Tungrian cohort had been recruited into it *ca.* A.D. 121, when it was perhaps garrisoning Vindolanda, and had, as a native of the area, returned after his discharge. We perhaps ought to leave open the possibility that the Batavian and Tungrian units were in occupation together, at least for a time. The fort is not large enough to accommodate a quingenary and a milliary unit, but it is just possible that the Tungrian unit had been reduced to quingenary size by A.D. 104 or 105. Note that in the building at Carrawburgh this cohort is associated with another (*JRS* lvi (1966), p. 218).

12. Note that he appears to have the same *cognomen* as the centurion of *cohors viii Batauorum* mentioned in No. 23.5 (see note).

there are difficulties in this hypothesis which are insoluble in the present state of the evidence (see No. 22.1 note). Finally, we note that No. 30 supplies us with the name of the man who was probably the commander of the unit stationed at Bremetennacum (Ribchester), Oppius (?) Niger; it has been conjectured that the unit was probably an *ala* (see No. 30.6 note).

B. THE LETTERS

Under this heading we may begin with the archives. We use this term in its conventional sense as referring to a group of documents which are linked by virtue of having the same author, recipient or place of origin. We have distinguished three small archives — groups of letters addressed to a particular individual. We can say little about the origins of these letters (this is, indeed, also true of the letters which do not belong to the archives). We assume, on no other basis than that of general probability, that they are unlikely to have come from very far afield. The context may be limited to Britain; we think it likely to be limited, at most, to the north-western part of the Empire. The exceptions (those letters whose origins we can specify) are Nos. 21 and 30 which may have come from Ribchester and No. 37, a draft of a letter written at Vindolanda.

Most of the letters come from Layers 10 and 8, which indicates a date of *ca.* 95–105 for the deposit. This fits admirably with the mention of the governor (Neratius) Marcellus in No. 37.14 (see note). It is impossible to be sure whether any of the letters predate this limit significantly; letters may have been kept 'on file' for a considerable period after they were written.¹³ Only one letter with a significant amount of text (No. 39) comes from the later Layer 6 (*ca.* A.D. 105–115).

The largest of the archives is that of Flavius Cerialis, *praefectus* of *cohors viii Batauorum* (see Nos. 2, 23). It includes an interesting documentary example of *litterae commendaticiae* from a man named Karus (see above, p. 48) which is a particularly valuable addition to the small number of extant examples of this genre. There is also a complete letter from Niger and Brocchus (the former probably identifiable as Oppius (?) Niger, who was probably the commander of the unit at Ribchester, see No. 30) in which they refer to an impending meeting between Cerialis and the governor (No. 21). In the fragmentary text of No. 23 there is perhaps a reference to Cerialis having sent letters by the hand of a centurion of *cohors viii Batauorum*. Although examples of the name Flavius Cerialis can be discovered in our extant sources,¹⁴ there is no reason to think that our *praefectus* is identifiable with any other known person of this name.

The second archive is that of Crispinus, the *praefectus* of *cohors i Tungrorum*. Only two texts have significant portions of letters. No. 30 comes from Oppius (?) Niger at Ribchester and refers to the fact that Crispinus had sent two soldiers from the Tungrian cohort with letters to the governor. No. 31 is a more personal message, somewhat apologetic or defensive in tone. We cannot make any attempt to identify this Crispinus elsewhere; No. 37, the draft letter written at Vindolanda, mentions two people with the name Crispinus, one of them being the addressee, but it is difficult to imagine that either can be the *praefectus* of the Tungrian cohort (No. 37.1–2 notes).

The third archive, that of Flavius Genialis, barely deserves the appellation, but it is technically required since he probably turns up in three fragments (Nos. 34–36). Of these the last two are merely addresses. The first has a more substantial part of a letter which again refers to the despatch of an unnamed person or persons to Genialis. We cannot further identify Flavius Genialis and none of the texts gives us any solid clue to his rank or position, though the tone of No. 34 suggests fairly strongly that he is in the officer class.

The other letters, with the exception of Nos. 37 and 39, contain very few clues to author or recipient. No. 37 is probably to be placed firmly in the officer milieu. No. 39 is addressed to a *decurio* named Lucius. As to the rest, we are in the dark, but there are slight clues in Nos. 38 and 45 which lead us to believe that we have examples of the correspondence of people of much lower rank and status (the names and subject-matter, the use of the term *contubernales* in No. 38, the

13. *P.Dura* 64 reveals that letters were kept in the file for 35 years after the time of writing.

14. E.g. P.Flavius Cerialis (*CIL* 6.5587), T.Flavius Cerialis (*CIL* 6.18017); there is no evidence for the *praenomen* of the Vindolanda Cerialis.

name Trophimus and the term *conlega* in No. 45).

A handful of letters are of considerable interest. No. 37, the longest letter in the collection, is a draft written at Vindolanda. It is addressed to a person named Crispinus and refers, at the beginning, to another person with the same *cognomen* (and a *nomen* ending *-rattius*) who is apparently to act as letter-bearer. It seems difficult to identify either of these with the Crispinus who was *praefectus* of the Tungrian cohort, though it is perhaps just possible that he was the *-rattius* Crispinus who was returning (*redeunte*) from Vindolanda. One major point of interest in the letter is the mention of the governor (Neratius) Marcellus, *clarissim[um uirum] consularem meum*; he is known to have been in office in 103 and this provides important confirmation for the relative accuracy of the archaeological dating (see No. 37.14 note). Since the writer evidently refers to the exercising of influence with the governor, it is again obvious that we must be dealing with people of the officer class. The unnamed writer also mentions that his unit is stationed in winter quarters at Vindolanda. We may also note here that the fragmentary text in No. 42 also appears to refer to the arrival of the addressee at Vindolanda.

Nos. 38 and 39 are concerned with more mundane matters. In the former there are several references to the despatch or purchase of clothing, including sandals, socks (*udones*) and underpants (*subligaria*). In No. 39 the writer mentions the fact that a friend has sent him a gift of fifty oysters from a place called *Cordonoui* (or *-ae*), which we have not been able to identify. It is perhaps worth noting, finally, two tantalisingly obscure bits of information: a fragment of a letter in No. 41 refers to the purchase of some items at a price of three *uictoriati* each; and the writer of No. 40 appears to make reference to a trip to Rome — perhaps not so very surprising, but titillating to find the name of the metropolis turning up at the furthest boundary of the Empire.

All the letters, so far as we can judge, begin with the name of the sender in the nominative (usually both *nomen* and *cognomen*, but note the exception in No. 21 where there are two senders, identified by the *cognomen* only) followed by the name of the addressee (*cognomen* only) in the dative; this is followed by *suo salutem*. In most cases *salutem* is written alone in the second line at the right, the rest of this line being left blank. In No. 21, however, *suo* is also written in this line and the same may be true of no. 22 (see note to line 1). It is only rarely that the end of a letter is preserved. When it does survive it almost always shows the writer adding a brief greeting in what we take to be his own hand (a well-known habit of St. Paul, e.g. I Cor. 16.21). This can be as brief as *uale, frater* (No. 22.17, cf. No. 30.9–10) or more elaborate, *optamus, frater domine, [te] bene ualere* (No. 21.12–3). Note that in No. 22, where it is simply *uale, frater* the main body of the letter itself ends with the phrase *opto te felicissimum bene ualere* (lines 14–6). We might also note the interesting variant in No. 38.11, *opto felicissimus uiuas*.

We are confident that all of the letters will have borne an address on the back, but so few of these survive in anything like a complete form that it is impossible to be sure whether there was a standard format. Our most complete example is in No. 23 and here we have the name, *Flauio Ceriali*, followed by the rank, *praef(ecto)* and the name of the unit, *coh(ortis) viii Bat(auorum)*. In No. 39 the name of the addressee, *Lucius*, is followed by his rank, *decurioni*; something (we are not sure what) is written in a line below this. In several cases (e.g. Nos. 24, 40) we have the name followed by *praef(ecto)* and we cannot exclude the possibility that the name of a unit will also have been there. Obviously, there would need to be sufficient information to identify the addressee, and we must allow for possible variation in the practices of different writers.¹⁵

15. Note the possibility that letters to different individuals at the same place might often have been sent in batches (see above, p. 37).

IV. PALAEOGRAPHY

A. INTRODUCTION

Whatever the value of the Vindolanda tablets in other fields, we can be confident of their very considerable importance for the history of Latin writing — an importance, indeed, which it would be hard to overemphasise. The discovery of a sizeable body of written material from the period around A.D. 100 is remarkable enough in itself, but the value of the material for the palaeographer is enhanced, in the present instance, by a number of factors. By far the most important of these is the fact that the tablets are written in ink, as opposed to being incised.¹ The great significance of this will be clearer if we glance briefly at the range of material, written or incised, which has survived from the period of the early Empire.

The most widespread survival is of stone monuments. These are inscribed, and use a capital form of script. Palaeographers no longer disregard such material as being of no interest for the development of handwriting;² but its value for such a study, especially for the development of early Latin handwriting into the handwriting used in mediaeval books, is obviously severely limited. The same is true, though to a lesser extent, of all inscribed material, whether it be on lead, bronze, or wax tablets, including the graffiti found on stone or pottery. Important work is now being done on the 'writing' used on such materials,³ and it is certainly something which the palaeographer cannot afford to neglect, especially as the 'writers' (unlike the carvers of monumental stone inscriptions) will have tended to use the same letter-forms as those currently being employed for handwriting in ink. Up to the present we have had to be content almost exclusively with such material for the first three centuries A.D. from the western part of the Empire, i.e. the Latin-speaking part. The only examples of ink writing from these areas have been the few instances of writing on walls at Pompeii (perhaps more accurately described as painting), a handful of wooden tablets which we have listed and described above (p. 36) and a collection of ostraka from Bu Njem in North Africa dating from the early third century.⁴ The only substantial body of ink writing which has survived from the first three centuries A.D. has been the papyri found, and for the most part written, in Egypt, together with the papyri from Dura-Europos on the Eastern frontier.⁵ Although only a few hundred papyri in Latin have

1. This section is confined to tablets written in pen and ink. As indicated above (p. 44), a few of the tablets from Vindolanda are in fact not written with a pen but incised with a stylus.
2. Mallon, *PR*, pp.55–73 and *Museum Helveticum* 10 (1953), pp. 141–60 stresses the potential value to the palaeographer of such inscriptions.
3. See especially A. Petrucci's studies on the inscribed ceramics from Contodamagos in *Bull. arch. ital. di palaeografico* 1 (1962), pp.85–132 and 2–3 (1963–4), pp.55–72. On other types of graffiti see L. Bakker, B. Galsterer-Kröll, *Epigraphische Studien* 10 (1975), pp.11–30 (though Galsterer-Kröll (p.12) rightly stresses the need to be cautious in comparing writing on such material with contemporary writing on stone and papyrus).
4. These ostraka still await full publication. See the articles by R. Marichal, *REL* 51 (1973), pp.281–6, *CRAI* 1979, pp.436–52 (with three plates).
5. We use the word 'papyri' as it is usually employed by papyrologists, i.e. to include ostraka with ink writing as well as parchment scraps.

survived, compared to the tens of thousands in Greek, and these are for the most part documents originating in military circles, it is, nevertheless, to this body of material that we must turn for the only collection of early Latin writing which is large enough to provide us with sufficient palaeographical material to be studied in comparison with the writing of the Vindolanda tablets.⁶

From what has been said, one feature which enhances the importance for the palaeographer of the tablets from Vindolanda will at once be apparent: these tablets come from the north-western frontier of the Empire and thus from the opposite extreme to the papyri from Egypt and Dura-Europos. Admittedly only a few of the tablets will actually have been written at Vindolanda,⁷ but the remainder are hardly likely, we think, to have travelled far, and we may fairly take the find as exemplifying the type of writing in use in Britain at this period. We thus have now for the first time a not inconsiderable body of written material from a part of the Empire from which hitherto virtually no such material had come to light. This is of particular importance for the question of the extent to which Latin writing was standard throughout the Empire. When our written material came almost entirely from the Eastern provinces, it was always possible to argue that the evidence it presented might be giving us a very one-sided picture and might not accurately represent the manner in which Latin was written in the Western provinces.

Another fact which enhances the value of the find is the survival of such a rich variety of handwriting. Almost all the tablets listed below are in their own distinct hands. Of the many fragments originally inventoried under different numbers only a few could be directly joined and this was normally made possible not merely by the identity of the hands but also by the content of the text and the physical shape of the fragments. There may remain a very small number of fragments which belong with other pieces (e.g. those which may be written by the hand which wrote No. 37, see introductory comments); but apart from these it is safe to say that there are no two separate tablets in which we could confidently identify the hand as one and the same. Even in the case of Nos. 21 and 30, where the hands look to be superficially very similar, we cannot be sure that they are the work of the same writer (see No. 30, introductory comments). Since almost all tablets with any legible writing are of some value for palaeographical purposes and since some tablets are written by more than one hand (e.g. Nos. 21 and 30), we have in the collection as a whole examples of the hands of about eighty different writers, every one of whom was writing contemporaneously.

This point needs further elaboration, since the fact that all the tablets must have been written at much the same time and can be dated with some precision is very important in assessing their palaeographical value. The dating of the writing-tablets has already been discussed;⁸ the area in which the tablets were found is so stratified that the archaeologists could place the particular layers within a very limited period, often as short as ten years. The extreme limits for the leaf tablets are *ca.* A.D. 95–115 (with the exception of No. 99, which contains only illegible traces). Of course, such a date can only serve as a *terminus ante quem* and in theory the tablets could well have been written before this time. However, we find it very hard to believe that writing on such ephemeral material can have predated by very long the time at which it was discarded, and we are confident in asserting that the tablets were written either in the first decade or so of the second century or, at the earliest, in the last few years of the first. As we shall see (Section C of this chapter), it is agreed by all scholars that the most important years for the marked change in Latin handwriting from that of the first three centuries A.D. to that in use from the fourth century

6. Papyrus and parchment documents from the period up to A.D. 800 (but excluding ostraka and wooden tablets) are gradually being republished, with full reproductions, in the series *ChLA*. To date, vols. I–XIV have appeared. Many Latin papyri of palaeographical importance are also now to be found in Seider, *PLP* I and II. In the sections which follow we have tried where possible to give references to one or both of the above series when referring to plates of papyri etc., partly because the reproductions are the most recent and, generally speaking, of the best quality and partly because both series contain full bibliographies of all earlier reproductions.

7. i.e. the documents and one or two anomalous letters (e.g. No. 37); see pp. 46–50.

8. See pp. 19–21, 49.

onwards lie within the third century. The Vindolanda tablets are thus too early to bear on this question directly. They are, however, of interest for a related change in Latin writing, namely the shift in the angle of writing, to which, as we shall see (below, pp. 55–6), Mallon has assigned a fundamental importance in the development of Latin script. He dates this change to the early part of the second century, i.e. the period to which the Vindolanda tablets belong. Furthermore, in the most careful study of Latin papyri of the first three centuries yet published, Cencetti has claimed to detect an important change in Latin handwriting during the second century, with its earliest examples dating from the same period as the Vindolanda tablets.⁹ We shall return to these points in Sections C and G.

B. THE SCRIPT

Palaeographers tend to divide Latin handwriting into two broad categories — bookhands used for literary works and cursive hands used for documents. Marichal's description may be taken as typical of the difference between these two categories as it is usually seen by palaeographers. Of bookhands he says: 'l'emploi d'un calame souple et large est le trait commun de toutes les écritures 'livresques' (*libraria*)'; whereas of cursive writing he says: 'le calame 'dur', qui est aussi en général un calame à bec étroit, est, par excellence, celui des documents, des lettres privées, des souscriptions autographiques, donc celui de l'usage courant.'¹⁰ As might be expected, Marichal's description of cursive hands will do very well to describe the script of the vast majority of the tablets from Vindolanda. They must have been written with a relatively 'hard' pen, no doubt cut straight, which allowed little differentiation of thick and thin strokes. His description will not do, however, for No. 47, which is an important text palaeographically, since it warns us not to apply too rigidly the distinction between bookhand and cursive. No. 47 is not only elegantly written but also shows a marked difference between thick and thin strokes. The writer must have used a pen of the type described by Marichal as appropriate to bookhands. On the other hand, the letter-forms used in No. 47, insofar as they survive in the tiny fragment which remains, are not those of contemporary capital bookhand but belong to the cursive type of hand represented in the great majority of the Vindolanda tablets. Indeed, the only tablet which is clearly in a different script is No. 11, which is written in capitals; we might also note the distinctive script used in addresses written on the outside of letters (on which see Section E, below).

Apart from these texts, all the tablets from Vindolanda are written in some form of the cursive script. Roman cursive writing is normally divided into two categories or families of script, Old Roman Cursive and New Roman Cursive (henceforth referred to as ORC and NRC).¹¹ ORC, sometimes called 'capital cursive', was the dominant script for writing other than that in books during the first three centuries A.D. In the late third century it was replaced by NRC, often called 'minuscule cursive', which became the dominant script from about 300 onwards, leading indirectly to Caroline minuscule in about A.D. 800 and so to the script we employ today. Despite the many variations to be seen in the different tablets from Vindolanda,¹² we consider it legitimate to classify them all (with the few exceptions just noted) as written in ORC.

To anyone who is unfamiliar with the script of wax writing-tablets and papyri from the first two centuries of the Roman Empire, the writing in these tablets from Vindolanda may well appear extremely weird, almost as if it were written in a different alphabet from the Latin capitals

9. Mallon, *PR*, p.50, Cencetti, *NP*, pp.16–18.

10. *Pauli Sententiarum Fragmentum Leidense*, ed. G.G. Archi et al. (1956) = *Studia Gaiana* IV, p.25 n.2. Marichal adds 'la largeur du bec me paraît aussi importante que sa souplesse, les 'déliés' étant obtenus moins par un appui plus léger de l'instrument que par un tracé en biseau selon la tranche du bec.' There are similar descriptions in Mallon, *PR*, p.31 and Cencetti, *NP*, p.10.

11. Mallon wished to reject this terminology and to describe the two types of script as 'l'écriture commune classique' and 'l'écriture commune nouvelle'. We have thought it best to keep to the terminology which has now for some time been in common use among palaeographers; see Tjäder, *MIöG*, pp.387–9.

12. Cf. Tjäder, *NLP*, p.86 n.1, who says, with reference to ORC and NRC, 'die zwei Systeme mehrere 'Unterarten' enthalten.'

<u>ORC</u>	<u>NRC</u>	<u>ORC</u>	<u>NRC</u>
λ	α	Μ	μ
α	β	Ν	ν
ϵ	Ϸ	ο	ο
δ	δ	ρ	ρ
ϕ	ε	ϑ	ϑ
ϕ	κ	ρ	ρ
α	Ϸ	σ	σ
η	η	τ	τ
ι	ι	υ	υ
λ	λ		

FIG. 10 Characteristic letter-forms in Old Roman Cursive (ORC) and New Roman Cursive (NRC).

with which we are familiar from inscriptions.¹³ In fact, as Mallon has shown, this script is directly derived from the capital writing in use in the late first century B.C. and the first century A.D.¹⁴ Furthermore, the script in use in the Vindolanda tablets is very much the type of writing we should expect from our knowledge of writing on contemporary papyri. In consequence, the script itself has not proved a major obstacle in our attempts to decipher what is written in the tablets, especially as it rarely shows the strange or distorted letter-forms or the extravagant ligatures to be found in Greek papyri of this period. What has proved to be a very serious problem indeed is the condition in which the tablets have survived. It is not just their fragmentary condition — though this poses problems enough — but the fact that the ink is often badly faded or survives as little more than a blur, so that in some instances transcription is not possible at all. In his introduction to the Ravenna papyri, Tjäder remarks that reproductions of the papyri can give a very misleading impression: 'in einem Papyrus gibt es fast immer . . . kleine Risse und Löcher, die auf der Reproduktion als schwarze Striche oder Punkte hervortreten und sehr leicht für Teile von Buchstaben genommen werden können.'¹⁵ We would echo this with reference to the Vindolanda tablets but stress that our problem is more difficult than that of Tjäder. He was able to add 'überhaupt erlauben nur die Originale die 'anatomische' Untersuchung eines Papyrus, die oft für eine sichere Lesung notwendig ist.' Unfortunately this is a statement which we cannot make; for the most part, recourse to the original tablets is of no help in deciding on the accuracy of a reading, since in most cases the infra-red photographs present us with a much more legible picture of what was written than do the tablets themselves. Yet the photographs contain a great many marks which at first glance look like writing, but which certainly are not letters and need to be disregarded; and, perhaps even worse, they contain a great many lines, dots and other dark marks which may or may not be writing. It is only very rarely that recourse to the originals helps us to resolve our doubts. We must stress, therefore, that in our transcriptions we have often had to be very subjective in deciding which marks to treat as writing and which not.

C. THE PALAEOGRAPHICAL BACKGROUND

Before we proceed to an analysis of the script of the tablets we must glance briefly at the present state of scholarship on the subject of Latin writing in the Roman imperial period. We can ignore nineteenth-century works which were written before the important papyrus discoveries at the end of this century and later. These discoveries led to two substantial books on early Latin writing, by Van Hoesen and by Schiaparelli;¹⁶ but these too now have little relevance for our present purpose. All earlier work has been superseded and the whole subject has been put on a fresh basis in the last thirty years. The pioneer in the field is Jean Mallon, whose work, beginning with articles as far back as 1938 and culminating in his book published in 1952, has been universally recognised as revolutionising the study of early Latin writing.¹⁷ Mallon began by insisting that the Latin papyri 'remettaient en question les théories et la terminologie établies avant leur découverte',¹⁸ and from this he proceeded to a fundamental reappraisal of the capital script ('capitale romaine') and its development into ORC (a script which he preferred to designate 'l'écriture commune').¹⁹ He went on to consider the relationship of ORC to NRC and insisted on three points: (1) it is impossible for NRC to have developed directly out of ORC; there is in fact

13. Cf. Mallon, *PR*, p.31. Apparently the Romans themselves could have great difficulty deciphering the writing on wax tablets; cf. Plautus, *Pseudolus* 13 ff., where it is described as the scratchings of a *gallina*.

14. See the analysis by Mallon, *PR*, pp.31–40.

15. Tjäder, *NLP*, p.96.

16. H.B. Van Hoesen, *Roman Cursive Writing* (1915); L. Schiaparelli, *La Scrittura latina nell'età romana* (1921).

17. Mallon, *PR*. For his earlier writings see p.14 of that book and Tjäder, *MIöG*. In this thorough and critical review of Mallon's writings, Tjäder calls his work (p.387) 'eine Revolution in der Geschichte der lateinischen Schriftforschung.' See also Casamassima-Staraz, *SC*, pp.12–13.

18. Mallon, *PR*, p.18.

19. Mallon, *PR*, p.48.

an unbridgeable gulf (Mallon's word is 'fossé') between the two scripts; (2) the change is to be explained by a change in the angle of writing, and (3) this change in the angle does not have its origin in the cursive script ('l'écriture commune' in Mallon's terminology) but in the bookhand. Mallon does not deny any relationship ('parenté') between ORC and NRC; but he does deny that the latter is a direct descendant of the former.²⁰

This is naturally a much more controversial matter, and Mallon has here opened a debate which as yet shows no signs of being closed. Almost at the same time as his book appeared, Cencetti published a very important study of early Latin papyri (i.e. those of the first three centuries A.D.).²¹ His views coincided only in part with those of Mallon. He also believed that some of the letter-forms found in NRC cannot have been derived from the forms found in ORC as we know it from papyri of the second and third centuries;²² and he claimed to have detected in second-century papyri a new style of cursive writing, depending at least in part on a change of angle. Where he differed from Mallon was, first, in insisting that the development to NRC must be looked for in cursive writing, not in bookhand.²³ Second, since he accepted that this development cannot be traced in the material we possess, he put forward the hypothesis that the new style of cursive writing which he saw appearing in the second century and which became dominant in the third was the 'official' form, alongside which there existed a second 'unofficial' form. This official form, he suggested, became quasi-canonised in the third century in a direction which led it further and further away from any possible development into NRC. It is therefore to the second, 'unofficial' form that we must look for the style of writing and the letter-forms from which NRC began to develop. To the objection that this second, 'unofficial', form is not known in the third century, he replied that this is due to the hazard of survival, that all papyri surviving from this century are, as it so happens, from military or other official sources.²⁴

At about the same time as Mallon and Cencetti were putting forward their different views on the relationship of ORC to NRC, Marichal began publishing his views, which were much akin to those of Mallon.²⁵ He also insisted that there can have been no direct development of ORC into NRC, and he agreed with Mallon that the change which took place must be looked for in bookhand, not cursive. Later Marichal developed a modified form of this view, in which he saw as crucial for the development of NRC the existence, as early as the date of the graffiti from Pompeii, of 'baroque' forms of the letters. He continued to insist that these forms were closely associated with bookhands since they were used by the literate members of the community; and he also continued to believe in the importance of the change in the angle of writing, which he associated with the change from the roll to the codex.²⁶ Tjäder's views are very different. He expressed himself sceptical of the emphasis placed on the change in the angle of writing,²⁷ and was firmly of the opinion that the development into NRC should be looked for in the cursive not

20. For the reference to 'fossé' see especially p.106 where he attacks the (previously) unanimous view that NRC developed out of ORC. On the contrary, he insists, this evolution 'n'a jamais existé et [qu'] il est impossible de tirer graphiquement le système de la nouvelle 'cursive' du système de l'ancienne.' See further pp.50 and 110.
21. Cencetti, *NP*, pp.3-54.
22. In *NP*, p.24 he says that some letters can have developed from ORC to NRC but 'd'altro canto, nella minuscola corsiva appaiono forme indimostrabili col solo ricorso ai papiri documentari pervenuti del secolo II e III.'
23. Especially *NP*, pp.3-4.
24. See *NP*, pp.24-31 and the summary of his views on pp.38-9.
25. The most important of Marichal's early articles for our purpose is that in M. Audin, *Somme typographique I* (1948), pp.63-111; cf. also *L'antiquité classique* 19 (1950), pp.113-44. The controversy at this stage is well summarised by C. Perrat, *Comitato internaz. di Scienze storiche, X Congr. int. Rel. I* (1955), pp.345-84 and C. Manaresi, *Acme* 3 (1950), pp.383-409.
26. See particularly his article cited in note 10, especially pp.53-7 and *AEHE* 1967-8, pp.295-7. There is a good summary of Marichal's views in Casamassima-Staraz, *SC*, p.15 n.11.
27. Most forcibly in *Basler Zeitschrift für Geschichte* 74 (1974), p.35 n.96: 'man soll die grossen Schritte der Schriftentwicklung (wie, vor alles, dem Übergang zu jüngerer römischer Kursivschrift . . .) nicht durch eine Veränderung des Schriftwinkels erklären' (Tjäder's italics). For a recent contribution to the problem see M. Palma, *Scrittura e Civiltà* 2 (1978), pp.263-73.

the bookhand.²⁸ In general, we may fairly say that he endorsed the views of Cencetti, and he is especially relevant for our discussion in that he believed that forms of the letters used in NRC are already to be found in ORC in the second century.²⁹ However, he was less eager than Mallon and others to reject any possibility of a genuine development of ORC into NRC.³⁰

In the last few years two further substantial contributions have been made to the debate. The first, by Casamassima and Staraz, is exclusively concerned with the evidence from the papyri.³¹ The upshot of their very long, detailed consideration of the evidence was to reinforce the views of Cencetti. They agreed with him in thinking that more than one style of writing developed within the general category of ORC; in particular there developed an 'official' style of writing which tended to choose the more cursive forms of the letters. By the third century this had become 'canonised' in a direction which led away from letter-forms resembling those to appear in NRC. Alongside this there developed a script which they call 'scrittura normale' or 'commune';³² this script adopted what they described as 'posed' forms of the letters, and this they regarded as the milieu out of which the forms of NRC developed.³³ In particular, from a detailed examination of the letters which they regarded as crucial,³⁴ they contended that these two styles (they spoke of 'bifurcations' or of 'two branches of the same tree') can be seen in existence in Latin papyri throughout the first two centuries A.D.³⁵ Most recently, in 1980, Hornshøj-Möller published an article entitled 'Die Beziehung zwischen der ältern und der jüngeren römischen Kursivschrift'.³⁶ As his subtitle, 'Versuch einer Kulturhistorischen Deutung', makes clear, he is more concerned with the 'why' of the change than the 'how', and his work is consequently less important for our present purposes. Apart from his useful survey of earlier views, his article is principally of interest for us because he is apparently prepared to contend that the traditional view, that NRC developed out of ORC without further qualification, is still defensible; note in particular the statement: 'Ich glaube, anhand einer graphischen Analyse festgestellt zu haben, dass die jüngeren römische Kursivschrift sich hinter einer gewissen Berücksichtigung der griechischen Schrift *organisch* aus der älteren entwickelt hat.'³⁷

Mallon regarded the letters in NRC which could not have developed out of ORC as A, B, E, N, P.³⁸ Some of these look more convincing than others (cf. FIG. 10), and other palaeographers have insisted only on the impossibility of deriving NRC *a* and *b* from ORC A and B.³⁹ Indeed, the letter *b* is something of a shibboleth and has evoked a voluminous literature. As can be seen from FIG. 10, the standard form of ORC has what the French school calls the 'panse à gauche', whereas the form of NRC has the 'panse' (loop or bow) at the right. Mallon was the first to explain the way in which the form of B used in ORC (the form with 'panse à gauche') had derived from

28. Especially *MIöG*, pp.391 ff.

29. See his work on the Ravenna papyri, especially *NLP*, pp.117-8 and cf. Marichal's review of this in *REL* 33 (1955), pp.522-4.

30. Cf. *NLP*, pp.118-9 and *MIöG*, p.393 where he claims that Mallon has exaggerated the 'fossé' between these scripts: 'meines Erachtens, hindert nicht die Annahme, dass die jüngere Kursiv mit der älteren in direkter Verbindung steht.'

31. Casamassima-Staraz, *SC*, pp.9-110.

32. This corresponds to Cencetti's 'scrittura usuale'. We prefer the terminology used by Tjäder, *NLP*, p.87, who speaks of 'offizielle' and 'private Schrift', since the script to which Cencetti and Casamassima-Staraz are referring is precisely the script which, as they admit, is on the basis of our present evidence *abnormal* and *unusual*.

33. See especially their pp.59-61.

34. Above all A, B, E, M, N and P; more briefly G, D and F.

35. Especially pp.21-6. They also contend that to speak of 'continuità' versus 'cesura' is to make too sharp a division; and they are inclined to play down the importance of the change in the angle of writing, see pp.13-14 and 73.

36. *Aegyptus* 60 (1980), pp.161-223.

37. *Op.cit.* (note 36), p.198 (our italics). See also pp.193-4, but contrast p.192 where he accepts that Mallon and Marichal have shown that continuity between the two styles of writing as Van Hoesen understood it can no longer be accepted.

38. Mallon, *PR*, pp.107-11. Tjäder, *op.cit.* (note 27), pp.19-22 sought to add M to this list.

39. E.g. Cencetti, *NP*, p.24, Marichal, *op.cit.* (note 10), p.54; see also Perrat *op.cit.* (note 25), p.371.

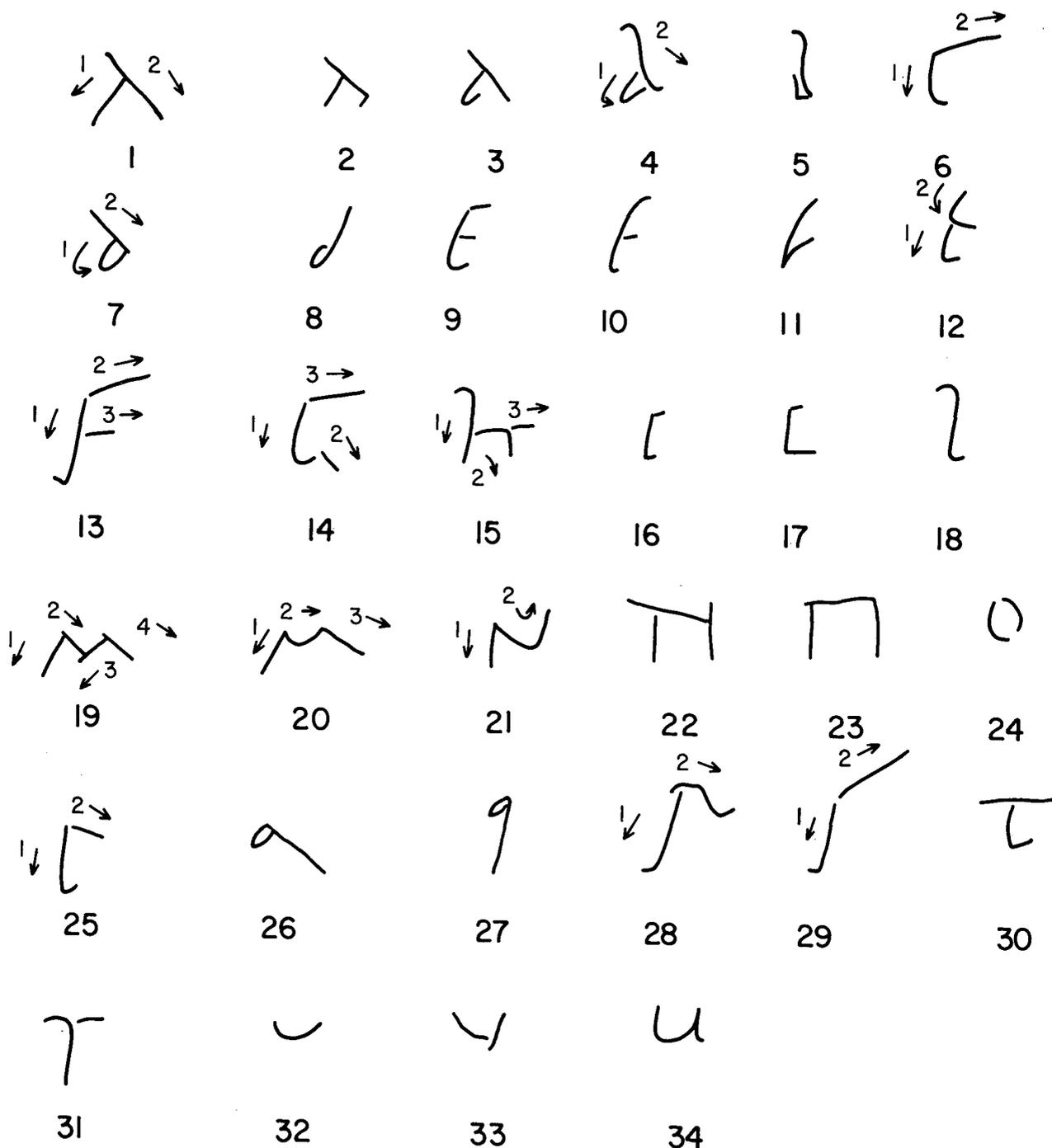


FIG. 11 Letter-forms discussed in Chapter 4, section D.

capital *b*.⁴⁰ The correctness of his explanation would today be generally accepted. The problem is to explain how this form of *b* can have developed into the *b* of NRC by following normal palaeographical 'laws' (as the traditional view assumed). Mallon, indeed, was confident that the form in ORC could never have led to the form found in NRC and believed that we must look to the bookhand for an explanation. Cencetti on the other hand thought that it ought to be possible in principle to find in ORC of the first two centuries A.D. a form from which *b* with 'panse' at the right could have derived,⁴¹ and Petrucci believed he had demonstrated the correctness of this by

40. Mallon, *PR*, pp.42-7.41. Cencetti, *NP*, p.27 n.64.

an analysis of the pottery graffiti from Contodamagos, some of which are dated as early as the first century; the writers of these graffiti were, he thought, semi-literates who had never learnt *β* with 'panse' at the left at school and were deriving their *b*, in a form very much like that normally found in NRC or indeed like a modern lower-case *b*, from a clumsy attempt to reproduce the capital form.⁴² Marichal, in an important study of the letter,⁴³ claimed to have found a special variant of *β* in graffiti from Pompeii (therefore antedating A.D. 79) in a form which he designated 'baroque'. This form he regarded as the one from which NRC *b* later derived. In subsequent articles Marichal was strongly critical of Petrucci, and in particular he insisted that his 'baroque' form of *β* is the work of literates familiar with bookhands.⁴⁴ At one time Tjäder sought to demonstrate that ORC *β* could have developed graphically into NRC *b*; but he subsequently abandoned this view in favour of that of Petrucci.⁴⁵ Finally, Casamassima and Staraz, while agreeing that *β* is crucial for the question of 'continuità o cesura' between the two forms of cursive, contended, in conformity with their general views, that ORC knew more than one form of *β* and that one of these forms was taken and developed into the *b* of NRC.⁴⁶

This brief summary of the controversy surrounding the origin of NRC, which we trust is not in any way seriously misleading, cannot hope to reflect all the subtle nuances in the views of the different scholars. It is not our intention to discuss further the various merits of these views. For the most part this would not be strictly relevant to our purpose, since all would agree that the critical period for the changeover from ORC to NRC lay in the third century, a hundred years or more after the date of the Vindolanda tablets. It is, however, important that we should bear in mind this whole controversy while analysing the script of the tablets, for the following reasons. The thesis of Cencetti, especially as it has been developed by Casamassima and Staraz, asserts that Latin writing of the first two centuries A.D. should contain forms of letters which were critical for the development of NRC.⁴⁷ The question we need to ask ourselves, therefore, is whether any examples of such letter-forms are to be seen in our tablets.

There is another respect in which the tablets may throw light on theses advanced by palaeographers. Mallon contended that the change in angle, on which he laid much stress, was to be seen in second-century papyri, citing as his earliest example a papyrus of 131.⁴⁸ Cencetti, while laying less stress on the change in angle, nevertheless considered that second-century papyri showed the development of a new type of ORC, which he described as 'maiuscola inclinata', right-sloping and characterised by more use of ligatures, and in its general aspect more 'leggero, minuto, sottile, slanciato' and distinguished by 'il traggiamento quasi del tutto strisciato'. This new type he found first exemplified in a papyrus of A.D. 103.⁴⁹ Although it is not easy to translate Cencetti's description into precise English terms (the crucial word 'strisciato' is particularly intractable), we believe not only that there is substance in what he said, but that the reader who will take the trouble to compare reproductions of the texts to which Cencetti refers, both for the earlier form of ORC and for that which developed in the second century, will clearly see the point that he was making.⁵⁰ The importance for our present purposes is that this new form is first attested, according to Cencetti, at precisely the period to which the tablets from Vindolanda belong, and it might therefore be expected to make an appearance in them.

Finally, we need to note that in papyri dating from the reign of Augustus and shortly afterwards (to about A.D. 50) a style of writing is commonly found which belongs to the category of ORC, but which is much closer to the capital script than the form of ORC which is normally

42. A. Petrucci, *Bull. arch. ital. di palaeografico* 2-3 (1963-4), pp.55-72.

43. In *Studi . . . in onore di C. Manaresi* (1953), pp.347-63.

44. See *AEHE* 1967-8, pp.297-313 and 1971-2, pp.350-1.

45. Contrast *NLP*, pp.98-9 with *Misc. G. Cencetti* (1973), pp.71-2 and *op.cit.* (note 27), pp.30-1.

46. Casamassima-Staraz, *SC* pp.26-34.

47. Similarly also Tjäder, *NLP*, p.117.

48. Mallon, *PR*, pp.50-3; his first dated example is now *ChLA* 412.

49. Cencetti, *NP*, pp.16-8 (his italics); the papyrus of A.D. 103 is now *ChLA* 215.

50. Contrast the texts now reproduced as *ChLA* 200 (Seider, *PLP* 36), 415 (Seider, *PLP* 8) and 424 (Seider, *PLP* 18), all cited by Cencetti to represent the earlier style, with *ChLA* 204 (Seider, *PLP* 37), 215 (Seider, *PLP* 26), 412 and Seider, *PLP* 33, cited for the later 'strisciato' style.

employed in papyri from the middle of the first century onwards.⁵¹ This distinction is not quite the same as a further distinction which Cencetti seeks to make (with reference especially to the second half of the first century) between a 'stiffer' form of ORC and a freer, more cursive form. He regards the 'stiffer' form as essentially the script of wax tablets, which developed into the freer form as it became more customary to write on papyrus.⁵² This 'wax-tablet' type of script is clearly related to the very early form of ORC mentioned at the start of this paragraph, although not identical with it. What we need to look for in analysing the Vindolanda tablets is any trace of this early type of ORC. We shall return to a discussion of all these points in Section G of this chapter, after we have examined the script of the Vindolanda tablets in some detail.

D. ANALYSIS OF THE LETTER-FORMS

In the analysis which follows we have taken as a basis the careful analysis of letter-forms in ORC given by Mallon, which we have supplemented by reference to the more detailed study by Cencetti.⁵³ These analyses complement each other neatly since Mallon bases himself on first-century evidence, whereas Cencetti is primarily concerned with papyri of the second century. We have also found it useful to compare the examination of certain letters by Casamassima and Staraz.⁵⁴ The features which need to be borne in mind in analysing a script are the letter-forms, the angle of writing, the size of the letters and the ductus; by 'ductus' we understand the number of strokes which made up each letter and the order and direction in which each stroke was made.⁵⁵

If the letter-forms of ORC have received a good deal of attention from palaeographers, the same is far from true of the ligatures in this script.⁵⁶ Indeed, the subject has been almost totally ignored in the recent studies discussed above, except in the work of Cencetti.⁵⁷ Fortunately, his analysis is careful, sound and very much to the point, so that it has been a great help to us in examining the ligatures in the Vindolanda tablets. Broadly speaking the ligatures in our tablets conform very closely to the pattern we should expect from the papyri as analysed by Cencetti.

By 'ligature' we mean the linking together of two or more strokes, which were originally separate, in a single movement of the pen or other writing implement, without removing the implement from the writing-surface. Such ligatures can be 'internal', within a letter,⁵⁸ or 'external', linking the last stroke of one letter with the first stroke of the next; the analysis which follows treats under 'ligatures' only the second of these types. Such ligaturing is, of course, the norm in present-day handwriting, but it came into use in the scripts of classical antiquity only gradually, and it is of some importance to see the extent to which it was practised in the Vindolanda tablets. A word of warning, however, needs to be added. It is often very difficult in any script from any period to be sure that a ligature has taken place, as distinct from instances in which two letters merely happen to touch one another because one ends at the point where the

51. The evidence for this early type of ORC is gathered by P.J. Parsons in *Festschrift Oesterreichischen Nationalbibliothek Wien*, pp. 484-5; cf. also R. Seider, *Proc. XIVth International Congress of Papyrology* (1975), pp.277-84 and *ZPE* 36 (1979), pp.117-20. Much of the evidence for this early style has accumulated recently and it is no doubt for this reason that it was not discussed by earlier writers on ORC (for Cencetti, see the text and the next note).
52. Cencetti, *NP*, pp.11-5; cf. Tjäder, *op.cit.* (note 27), pp.17 and 28. We wish to make a distinction within ORC between (a) the early form akin to capital, (b) the form in use in the late first and second centuries and (c) the later form called 'strisciato' by Cencetti. Cencetti seems to us to fail to distinguish (a) from (b).
53. See Mallon, *PR*, pp.31-40, Cencetti, *NP*, *passim*, esp. App., pp.40-54.
54. Casamassima-Staraz, *SC*, pp.26-55, especially for the letters A, B, E, N, M, P, G, D.
55. This follows closely those features considered essential by Mallon, *PR*, p.21.
56. Contrast the ligatures in NRC which have received a considerable amount of attention, especially in Tjäder, *NLP*, pp.95 ff.
57. Cencetti, *NP*, *passim*, esp. App., pp.40-54; he treats the ligatures under each letter in turn, a pattern which we follow. His study, as remarked in the text, is primarily concerned with the second century but refers constantly to earlier and later examples.
58. As with Strokes 2, 3 and 4 in the type of M shown in FIG. 11.19.
59. Cencetti's word for them is 'accostamento' (p.41).

next begins. Such instances are of no palaeographical interest;⁵⁹ whereas examples of ligatures are always palaeographically interesting and are often of importance. It is usually possible to decide in studying a medieval manuscript whether a ligature has taken place or not by a minute examination of the original, sometimes taking into consideration a large number of possible instances. As we indicated above (p. 55), such an examination of the originals of our tablets is rarely likely to be helpful; and as we are dealing with only very short texts, a particular ligature, or possible ligature, will usually occur only once, with no possibility of a cross-check with other instances. In the remarks which follow we have tried to confine ourselves to ligatures of which we are confident (unless the contrary is indicated), but we are well aware that the photographs may on occasion have misled us into seeing ligatures where, in fact, none existed.

A. This is probably the most varied and interesting of all the letters. FIG. 11.1 shows the form in which it appears most often in the tablets (the form which is certainly the commonest in ORC generally). The main variants of this form are (a) the prolonging of Stroke 1 below the line, sometimes to a considerable extent (e.g. Nos. 2, 4, 30), a stroke which can end with a hook rising to the left, and (b) the appearance of Stroke 2 in a curved rather than a straight form (thus resembling *r*); this Stroke 2 can be written horizontally or even, in ligature, with a slope upwards to the right, e.g. *suae*, *habeo* (No. 37.8 and 9). The part to the left of Stroke 1 is sometimes omitted (see No. 4), when the letter becomes hard to distinguish from *i* with serif (cf. No. 30.3 note), or even *c* or *p*. The order of the strokes is not in doubt: ligatures to the left are always made with the top of Stroke 1, which must therefore have been made first and in a downward direction;⁶⁰ see examples given under E, F, H, I, K, L, M, R, S, T, U; as this would suggest, such ligatures are very common. It is also common for the letter in this form to ligature to the right by means of the end of Stroke 2: e.g. *ab* (No. 30.6), *ad* (No. 4.9 etc.; 30.5, 37.11), *am* (No. 41.2, 43.4), *an* (No. 13), *ar* (No. 38.2), *as* (No. 4.20 etc.); note especially the ligature *at* in No. 4.41, made by adding a link stroke, and the ligature *hab* in *habeo* and *han* in *hanc* (No. 37.9 and 11), where the whole letter *a* is made in a single stroke with a shallow loop to facilitate the ligatures.⁶¹

Not infrequently *a* also appears in the form shown in FIG. 11.2, which corresponds to the second form in ORC in Mallon's analysis; this consists of three strokes, but the second and third may be made in a single movement of the pen.⁶² In this form the letter never makes a ligature to the right. There is some reason to think, with Mallon, that this is an older form than that illustrated in FIG. 11.1. Examples of this form are to be found in Nos. 10, 34, 42, and 48, with an interesting variant in No. 43.5, where the third stroke is made horizontally.

These forms are expected. There are, however, two forms of *a* in the tablets which we should not expect to find. (1) In No. 37.22 the *a* in *amicis* is in the form illustrated in FIG. 11.3;⁶³ in this form the letter looks much like one form of *d*. This is perhaps to be regarded as a half-way stage towards (2), the remarkable *a* to be seen in No. 45.2, *karisime*: here Stroke 1 has completed its loop to Stroke 2 so that the letter looks very much like the *a* which was to appear in uncial.⁶⁴ The only *a* in contemporary cursive hands which is at all similar is, so far as we know, the one found occasionally in the pottery graffiti from Contodamagos.⁶⁵ Bookhands of this period sometimes have forms in three strokes in which the left-hand stroke combines with the cross-bar to form an angle,⁶⁶ and we think that the form in No. 45 represents a rounding of this angle. Neither of these

60. Cencetti, *NP*, p.40 says of this stroke 'tavolta tracciata con movimento ascendente', but we have found no evidence for this in the tablets (except in the peculiar ligatures in *hab* and *han* described in the text).

61. A very similar ligaturing occurs in *PSI* 729.5 (see pl. xi (no. 15) in J. Mallon, R. Marichal, C. Perrat, *L'écriture latine* (1939)).

62. See Mallon, *PR*, p.32, who calls the third stroke 'stroke 1 bis' and seems to understand it as an 'empattement' at the foot of Stroke 1 in capital A as analysed by him on p.25. Others have considered Stroke 3 as the residual cross-bar of the capital form and this seems to us more likely.

63. For a similar *a*, but in a capital bookhand script, see *CLA* 212 of ca. A.D.148.

64. Although the top of the letter has disappeared, we think this is the only possible explanation of the ductus and make-up of the letter here. On the development of 'uncial' *a* see Tjäder, *op.cit.* (note 27), pp.32-4 and Marichal, *op.cit.* (note 10), pp.49-57.

65. See Petrucci, *op.cit.* (note 3) and cf. Casamassima-Staraz, *SC*, pp.52-5.

66. E.g. *CLA* 385 from Herculaneum (therefore before A.D.79).

unexpected forms of *a* nor any of the usual forms considered above can be said to produce an *a* which can easily be thought of as having developed into the *a* of NRC. This is not surprising, since no form of *a* which obviously leads from ORC to NRC has yet been found in Latin papyri.⁶⁷

B. On the forms of this letter in ORC and NRC see the discussion above, pp. 57–9. The letter in ORC is made in two parts, as illustrated in FIG. 11.4. The first part is known as the ‘panse’ (cf. above, p. 57), the second may be called the *hasta*.⁶⁸ These two parts are always made separately in the tablets, the ‘panse’ being made first and occasionally making a ligature with a preceding letter (e.g. *ab*, see No. 30.6); the *hasta* can ligature with a letter following, *be* (No. 22.16), *bi* (No. 37.24), *br* (No. 30.6) etc. In some tablets the two parts of the letter are almost equal in size, giving the letter a stunted, rather ugly appearance (e.g. Nos. 22, 37); more often the *hasta* is tall and elongated, with the ‘panse’ reduced to a minimal curve, giving a much more elegant effect (e.g. Nos. 21, 30, 38). The letter can always be distinguished from *d* by the presence of a curve leading into the second stroke. There is no example in the tablets of *b* with ‘panse à droite’, the form in NRC, nor of any *b* which we should regard as closely resembling the ‘baroque’ form (for which see FIG. 11.5 and p. 59 above).

C. This is normally made, as shown in FIG. 11.6, in two strokes. Stroke 1 is always made first and can end with a slight curve to the right. It occasionally forms a ligature with the preceding letter (see examples under *D* and *E*). The second stroke, the cap, can ligature to the right, see e.g. *ci* in No. 37.22, *cr* in No. 31.1 and *cu* in No. 39.3. Sometimes the cap rises upwards like later ‘crested’ *c* (e.g. No. 30), in which case there is no ligature; *c* can be made in a single stroke in a downward direction, but this does not often occur.⁶⁹ This form does not make ligatures either with preceding or following letters.

D. The basic form in ORC, as analysed by Mallon, occurs not infrequently in the tablets (see FIG. 11.7).⁷⁰ The two parts are made separately, the loop first and the *hasta* second; the separation of the two parts can often be seen very clearly, especially in No. 30 and in the rather idiosyncratic form in No. 4. The loop can ligature with a preceding letter (we have noticed this only for *A*, see above), and the *hasta* with a following letter, as *dc* (No. 30.5), *dh* (No. 37.11), *ds* (No. 4.9 and 36) etc. Occasionally the two parts of the letter are written in one continuous movement, as in Nos. 1, 7, 22 and especially No. 5 where both forms occur (contrast lines 3 and 12). Alongside this ‘uncial’ form of *d* there occurs a second form, shown in FIG. 11.8, in which the *hasta* slopes to the right or is upright, as in modern lower-case *d*. Mallon considered the existence of these two forms of *d* as one important indication of the shift in the angle of writing in ORC.⁷¹ It is therefore worthwhile noting that both forms occur in our tablets (for the form shown in FIG. 11.8 see Nos. 3, 21, 38) and indeed in No. 34 we have both forms in the same text (contrast *quid* in lines 1 and 2 with *ad* in lines 3 and 4 etc.). Normally there is no way of telling whether *d* as made in FIG. 11.8 is a single stroke beginning at the top and ending with the loop or vice versa;⁷² but in No. 53, *domine*, the *d* ligatures with following *o* so that in this instance the letter must have been made in a downward direction ending with the loop.

E. Various forms of this letter are known in ORC,⁷³ all of which are found in the tablets. The

67. Despite the efforts to find one by Casamassima-Staraz, *loc.cit.* (note 65), cf. also Tjäder, *NLP*, pp.96–9.

68. Strictly speaking the *hasta* is the part of a letter formed by a vertical stroke (to which a loop or bow etc. can be joined) and, as is clearly shown in Mallon’s analysis of the derivation of ORC *B* from capital *B*, the *hasta* of the capital form is part of the ‘panse’ of the cursive form. Nevertheless, we have thought it appropriate for convenience (following Cencetti, *NP*, p.42) to use the term *hasta* of Stroke 2 in FIG. 11.4.

69. Cf. Mallon, *PR*, p.35. Cencetti, *NP*, p.43 remarks that this form is also much less common in papyri.

70. Mallon, *PR*, pp.35–6. As his analysis shows, it is strictly inaccurate, as in the case of *B*, to speak of the second stroke as the *hasta*.

71. See Mallon, *PR*, p.51. Casamassima-Staraz, *SC*, p.50, however, note that both forms occur alongside each other in papyri from a relatively early date.

72. This ambiguity is also admitted by Mallon, *PR*, pp.35–6 and by Cencetti, *NP*, p.43.

73. See Mallon, pp.36–7; cf. also Casamassima-Staraz, *SC*, pp.34–7.

form closest to capital, made in three strokes (see FIG. 11.9), is no doubt the oldest and occurs only rarely (e.g. No. 46). Most common is the form shown in FIG. 11.10. The left-hand stroke can be almost straight, or hooked at the foot, and it can be short and rounded (as in Nos. 42 and 45) or slim and elongated (as in No. 30). In this form, made in two strokes,⁷⁴ it naturally ligatures freely with letters following, especially with *r*, *er* being the commonest of all ligatures in the tablets (e.g. No. 5.10). Among other examples note *ea* (No. 39.2), *ec* (No. 37.8), *el* (No. 38.8), *em* (No. 38.8), *en* (No. 30.6), *es* (No. 38.10), *et* (No. 4.31), *eu* (No. 37.6), *ex* (No. 37.21). Somewhat more surprisingly, this form can also ligature to the left, the join being made at the top of the left-hand stroke:⁷⁵ examples are cited under *в*, *г*, *м*, *с*, *т* and *у*. Note also an example such as *meum* in No. 37.6 where *e* ligatures both at the left and the right. However, *ei*, which later became such a common ligature, is found only very occasionally in the tablets, e.g. in No. 32 and in some instances of *hordei* in No. 4. A more cursive form of *e* with the cross-stroke joined to the foot of the down-stroke is illustrated in FIG. 11.11. This is not uncommon in second-century papyri but is rare in the tablets (cf. No. 25, 2nd hand). Finally, the form shown in FIG. 11.12, which became dominant in NRC but is found frequently in ORC in the third century and occasionally before this,⁷⁶ rather surprisingly seems to occur at least twice in the tablets, see No. 23.2 and perhaps No. 77.

F. Essentially there is only one form of this letter, as shown in FIG. 11.13. The size of Stroke 2 in proportion to the rest of the letter and the pronounced hook at the foot of Stroke 1 are the distinguishing marks between this letter and *ε*. The form can vary in respect of its overall size (at times projecting well above and below the line, e.g. No. 21) and its position with relation to other letters (Stroke 1 can be very largely below the line of writing). Interesting variants on the basic form are to be seen in Nos. 22 and 39. The letter does not ligature with preceding letters but does occasionally ligature to the right by means of the cross-bar, e.g. *fa* (No. 31.7), *fi* (No. 37.22), *fr* (No. 5.9 etc.) and *fu* (No. 37.3).

G. Again, there is only one basic form, for which see FIG. 11.14. This is normally made up of three separate strokes which are assembled in the way clearly illustrated by the *g* in *axungiae* (No. 4.35). Stroke 2 may be vertical (e.g. No. 22) or sloping, and varies in its length. Sometimes it seems to be made without removing the pen after completing Stroke 1, but there is no example of *г* made in a single stroke of the pen.⁷⁷ Stroke 3, the cap, is made last, as is shown by the way it can ligature with a following letter, see *ge* and *gr* in No. 30.1 and 4. The letter does not ligature with preceding letters.

H. This occurs in a number of interesting forms, which is surprising as the letter is found only rarely in the tablets and has not been considered worthy of lengthy discussion by palaeographers writing about the letter-forms in ORC.⁷⁸ The normal form in ORC is shown in FIG. 11.15 and this is the one which occurs most often in the tablets. It can be preceded by a curve leading into the top of Stroke 1 (most notably in No. 4), and Stroke 2 can be made in two separate movements. Stroke 3 appears to have been added solely to facilitate ligature with a following letter but only rarely is such a ligature found in the tablets (see *ha (bis)* in No. 37.9 and 11). Surprisingly, the letter once makes a ligature to the left;⁷⁹ see *ad hanc* in No. 37.11. A further variant occurs in which the whole letter is made without removing the pen from the writing-surface (a form which also occurs in contemporary papyri); in this form Stroke 2 begins at the foot of Stroke 1, see *coh* in No. 30.3; here, as one would expect, Stroke 3 has been dropped,

74. Possibly the variant of this letter found in No. 42 is made in three strokes, with the bow of the letter being made in two separate halves.

75. This ligature occurs in the papyri, see Cencetti, *NP*, p.44 where he describes it as 'rarissime'; it is not particularly uncommon in our tablets.

76. See Cencetti, *NP*, pp.43–4, Casamassima-Staraz, *SC*, pp.34–7.

77. Such a form of *г* is known in ORC; see Mallon, *PR*, p.37 and cf. Cencetti, *NP*, p.45.

78. Cencetti, *NP*, p.45 comments on the letter very briefly; there is no discussion in Mallon, *PR*, p.37 and it is ignored by Casamassima-Staraz, *SC*.

79. Such a ligature is unknown to Cencetti, see *NP*, p.45.

but on one occasion (No. 37.25) it has been added to this form of *h* at its usual place, that is the shoulder of what would normally have been Stroke 2. It is unexpected to find two instances of *h* made in a form close to the capital, a form in which Stroke 1 does not project high above the cross-bar (as it does normally in ORC and in modern lower-case *h*), see *mihi* in No. 34.1 and No. 39.3.

I. This is an apparently simple and straightforward letter⁸⁰ and it is surprising to find it occurring in several interesting forms. The normal form in ORC is a short letter of the same height as *m*, *n*, *u* etc. (i.e. it lies within the 'corps de la ligne'); but ORC also permits an elongated form, known as 'long I', a form which persists into NRC. For 'long I' in the tablets see No. 40 and especially Nos. 21 and 22, where both forms occur in the same texts. The more normal form is shown in FIG. 11.16. Here the noteworthy feature is the marked serif at the top, a serif which is present in at least half the instances of short *i* in the tablets. This is rather unexpected: *i* with a serif at this point does occur in papyri,⁸¹ but it is far from common. This serif, especially if added just below the top of the *hasta*, can make the letter almost impossible to distinguish from *p* or, sometimes, from *a* or *c*. This serif facilitates ligature to the right, e.g. *ia* (No. 39.3), *is* (No. 30.5), *iu* (No. 39.4), but it is often used when no ligature follows (e.g. in Nos. 4, 39 and 43). Ligature to the left is very common. Note also the variant with a marked curve to the right at the foot found in Nos. 22 and 42. When *i* represents the numeral 'one' it often has a serif and makes a ligature, see especially the dates in Nos. 4 and 7; this is commonplace in contemporary papyri. For the strange form of *i* = 'one' in No. 30.4 see the note *ad loc.*

K. This makes a ligature with *a* in *kal*, No. 30.8.

L. The two basic forms in which the letter is found in the tablets are shown in FIGS. 11.17 and 11.18.⁸² In the 'short' form (FIG. 11.17) it can have a pronounced serif at the top of the *hasta* (as shown), e.g. in Nos. 30 and 34. This form does not ligature with following letters and we have noted only one example of ligature to the left, with *e* in No. 38.8 and 11. Note the interesting variant on this form in No. 45.5. The form in No. 22, with a hook leading in to the *hasta*, which is somewhat elongated, is probably best regarded as a variant of this form, although it is quite as tall as some of the instances of the form shown in FIG. 11.18. This 'long' form can in fact vary considerably in length. It is the commoner of the two forms and can be a slim, elegant letter, made almost exactly like *b* without the 'panse', cf. Nos. 21 and 30. Both forms are found in No. 31. We have not found any example in which this 'long' form makes a ligature to the left;⁸³ for ligatures with following letters cf. *la* (Nos. 37.14, 39.1 etc.), *li* (No. 37.19) and *lu* (No. 37.14). In papyri, by the second century, it is very common to find *l* made with a long diagonal for the foot, sloping down well below the line. Surprisingly, there is no good example of this in the tablets, though in *ceriali* (No. 24.1) and the first *l* of *luguualio* (No. 22.9) we have something approaching this form.

M. This letter has been analysed several times and Mallon distinguished four variations, all of one basic form, in which the letter is made in one, two, three or four movements of the pen.⁸⁴ This analysis seems to us to be correct and we suspect that all four variations are present in our tablets, although it is very difficult to be sure. Indeed, all four variations may be found in Nos. 4 and 37. The form made in four separate strokes, shown in FIG. 11.19, can clearly be seen in Nos. 34 and 48. The form shown in FIG. 11.20, in which the middle two strokes of the previous form are

80. Mallon and Casamassima-Staraz offer no discussion of it at all but Cencetti, *NP*, p.45 has some useful remarks.

81. See e.g. *PSI* 729.3 (note 61). This stroke is what Cencetti calls a 'breve trattino orizzontale'.

82. Cf. Mallon, *PR*, p.38; the two forms are called 'maiuscola corsiva' and 'minuscola corsiva' by Cencetti, *NP*, p.45 (the letter is not discussed by Casamassima-Staraz).

83. Contrast the papyri where, according to Cencetti, *loc.cit.*, the letter 'lega facilmente a sinistra in ambedue le forme' (but ligature to the right is not common).

84. Mallon, *PR*, p.38. See also the analyses by Casamassima-Staraz, *SC*, pp.42-5 and Tjäder, *op.cit.* (note 27), pp.19-22.

linked together in one movement, is to be seen in all probability in No. 46 and there is an interesting variant of this in No. 42, where Stroke 3 of the form in FIG. 11.19 has almost totally disappeared. The form in FIG. 11.19 can be modified slightly by making everything after Stroke 1 in a single movement of the pen. In this form Stroke 1 is exactly like Stroke 1 of *a* in FIG. 11.1 and, like this *a*, ligatures freely with preceding letters (see examples under *A*, *E* and *U*). When this form ligatures to the right, which seems to be uncommon, an extra linking stroke is added, cf. *ma* and *me* in No. 37.6 and 14–5. When *m* is written entirely in one movement (still in the basic form shown in FIGS. 11.19 and 11.20), as probably occurs frequently in the tablets, it can ligature with a following letter. There are particularly instructive examples of this happening with *i* and *u* in the second hand in No. 21 and with *i* in *amicorum* in No. 37.17; here the second half of the letter is distorted, with the final stroke being made in an upward direction to facilitate the ligature.⁸⁵ Unless this can be regarded as a precursor of the form usual in NRC, which does not seem likely, there is no example of *m* in a form akin to that of NRC. Finally, we should note two examples in which the final stroke, at the end of a line, is prolonged with a curve: see No. 43.2 and especially No. 30.4.

N. This is often found in the basic capital form, sometimes heavily serifed (e.g. No. 34), and in this form it is never found in ligature. This basic form is made in three movements, but variants are found in which the second and third strokes can be combined into a single stroke (as in FIG. 11.21), or in which the whole letter is made in a single movement, beginning at bottom left and ending at top right; in these variants the direction of some or all of the strokes differs from that in the basic capital form.⁸⁶ Note also the variations on this form in No. 22, where the initial stroke sometimes extends well below the line, and in No. 32 where the last stroke has a flourish ending in a curve. In this form it seldom makes a ligature; cf. however *en* (above under *E*), *ni* and *nu* in No. 31.3 and 1, and (probably) *ns* in No. 43.6 and *nt* in No. 23.5 and No. 38.10. A notable variation on this basic form is shown in FIG. 11.22, in which the cross-stroke begins a long way to the left of the first *hasta* and meets the second *hasta* at or near the top (e.g. Nos. 2, 4 and 48). In No. 42 the cross-stroke and second *hasta* are joined in a way which seems to show the letter on the way to the form illustrated in FIG. 11.23, a form found in Nos. 5, 25.2 and especially No. 37 (and elsewhere). In No. 37, in fact, *n* occurs in several variations, the most interesting being those where the final stroke ends in an upturned loop and that in for instance *beneficio* (line 22), where the letter seems to be made in two strokes only and to resemble the type of *n* which was to appear in NRC. These variations occasionally make a ligature either with preceding letters (*an*, No. 37.11; *en*, No. 5.3, No. 21 2nd hand, No. 23.5) or following letters (*no*, No. 37.2–3).

O. Although the letter can be made as a simple circle, it is nearly always made in two sections as shown in FIG. 11.24.⁸⁸ Clear examples of the two halves are to be seen in No. 4.36, etc. and in the ligatures to the left (examples under *D*, *E*, *U*) or the right: *on* (No. 37.16), *or* (Nos. 4.16, 30.4, 37.17, 38.4), *os* (Nos. 6.1, 37.18). When it ligatures to the right, which happens only rarely in the tablets,⁸⁹ the form of the letter is usually noteworthy.

P. FIG. 11.25 shows the usual form of this letter in ORC and in the tablets. Variants are found at the foot of the *hasta* and in the angle at which the cross-stroke joins the *hasta*. The foot may be left plain or may curve to the right; it has a pronounced additional stroke in No. 22. The cross-stroke may slope downwards as shown (which seems to be the most 'correct' form) or it may be horizontal, or even slope upwards; in these cases the letter becomes almost impossible to distinguish from *c* or, at times, from *i* (with serif) or *t*. Ligatures follow the pattern indicated above under *c*, but are rare with preceding letters and not common with those following except

85. For this form in the papyri see Cencetti, *NP*, p.46; in this form he describes the final stroke as 'innalzata'.

86. See the analyses in Mallon, *PR*, p.38 and Casamassima-Staraz, *SC*, pp.38–42.

87. On this form in contemporary papyri cf. Cencetti, *NP*, pp.46–7, Casamassima-Staraz, *loc.cit.* (other forms to which they refer do not occur in the tablets); see e.g. *PSI* 729.6 (note 61). On the importance of this form for development into NRC cf. Tjäder, *loc.cit.* (note 84).

88. See the analysis in Mallon, *PR*, p.28 with pp.38 f., and Cencetti, *NP*, p.47.

89. According to Cencetti, *NP*, pp.47–8, ligatures to both left and right are common in papyri.

for *pr* (Nos. 5.4, 37.8 etc.); cf. also *pe* and *pu* (No. 37.21 and 8), and *ps* (No. 58). Note also the elongated version of this form in No. 5.6. Alongside this form there appears a form very much closer to capital and resembling modern P, that is with a loop or bow at the top (usually closed): this form is much less common (see Nos. 2, 42, 45). In contemporary papyri such a form is found not uncommonly. Casamassima-Staraz⁹⁰ describe it as the 'posed' form and it is this form which they believe was important for the development of NRC.

Q. There are two basic forms of this letter in the tablets, as illustrated in FIGS. 11.26 and 11.27. It is not clear whether either form is ever made in a single movement or whether the loop or circle is always made separately from the 'tail'. No examples of ligature have been noted. It has been argued that the form in FIG. 11.27 is a later type than that in FIG. 11.26 and did not come into use until after the change in ORC which took place in the early second century.⁹¹ It is therefore important to note that both forms are in regular use in our tablets.

R. The basic form of this letter is shown in FIG. 11.28. Stroke 1 can vary in length, direction (vertical or sloping to the left) and in the presence or absence of a hook or curve at the foot; note especially the very long first *r* of *tungrorum* (No. 30.4) and the marked sweep to the left at the foot of *r* in *ostria* (No. 39.3). Stroke 2 can show a number of variants, some of them so considerable that they might suggest a different form of the letter rather than a variant on a single basic form.⁹² Commonest is the 'wavy' form, as illustrated, but this 'wave' can be almost or entirely lost, and we may have only the second half of it with no part of the second stroke made to the left of the top of Stroke 1 (e.g. Nos. 21 and 24). When the 'wave' is lost it becomes difficult or impossible to distinguish the letter from *a*. Interesting forms are found in No. 42, which clearly shows the derivation of the letter from the capital, and in No. 4 (see the introductory comments and cf. also No. 7.3). The ductus of the strokes is essentially the same as for *a*. Ligatures with preceding letters are very common, especially the ligatures *er* (see above under *E*). For ligatures with following letters cf. *ra* (Nos. 30.6, 34.4), *re* (No. 37.15) and *ri* (Nos. 31.1, 37.14).

S. Again there is room for doubt whether all examples of *s* are really variants of a single basic form (illustrated in FIG. 11.29). On the whole we think this is true of the examples found in the tablets.⁹³ The principal variation is in the size of the letter: it can rise well above and descend well below the line (e.g. Nos. 21, 30); or Stroke 1 can keep within the size of other letters while Stroke 2 rises well above them (the most usual variant); or the whole letter can be made short and within the 'corps de la ligne' (both of the last two variations occur within the space of a few letters in No. 10). Stroke 1 can be just a straight descender or can curve markedly to the left at the foot; it seems always to be made from the top downwards and, as it frequently ligatures with letters preceding (see examples under *A*, *D*, *E*, *I*, *O*, *P* and especially *U*), it must have been made first. Stroke 2 is normally and perhaps always made from the left to the right. In the shortest variation of the letter this stroke can be horizontal or raised only very slightly; in this variation it can ligature to the right, e.g. *sa* (No. 30.5), *se* (Nos. 30.6, 31.5, 41.1). Note in particular the ligature *si*, where *i* is in the 'long' form, and *as* in *ocassionem* (No. 37.16); see further *ss* in *esse* and *missit* (No. 39.2-3) and *st* (No. 23.3 and 5).⁹⁴

T. The normal form in ORC and in the tablets is shown in FIG. 11.30. Cencetti, who argues that

90. See Casamassima-Staraz, *SC*, pp.45-8.

91. Compare Mallon, *PR*, p.39 with p.51 and see Casamassima-Staraz, *SC*, pp.50-2 and 74; they seem to imply that, in contrast with *d*, the two forms of *q* were not used contemporaneously but that one succeeded the other. This is not true in the Vindolanda tablets.

92. On the whole we agree with Casmassima-Staraz, *SC*, p.52, who think all are variants of a single form, as against Cencetti, *NP*, p.49 who believes it possible to distinguish two forms. He refers to the second stroke as the 'coda'.

93. Casmassima-Staraz consider all forms in papyri variants of a single basic form (*SC*, p.52), whereas Cencetti, *NP*, p.50, believes in the occurrence of several forms. The more cursive forms of the letter to which he refers, including a form made in a single stroke from the top, do not, so far as we can see, occur in the tablets.

94. According to Cencetti, *loc.cit.*, these ligatures are all to be found in the papyri, together with ligatures which distort the basic shape of the letter more than any examples to be seen in the tablets.

the letter in ORC is palaeographically of more interest than might be thought,⁹⁵ has detected examples in the papyri of *t* made in the form shown in FIG. 11.31, that is with the left-hand half of the cross-bar joined to the *hasta* and the right-hand half added afterwards as a separate stroke.⁹⁶ It is doubtful whether the tablets contain any example of this form; possibly it is to be seen in No. 1.8 and again in No. 31.2, where *t* ligatures with following *e*.⁹⁷ In its normal form the *hasta* is made first and the cross-bar second, as is shown by the fact that ligatures with following letters are always made with the cross-bar: e.g. *ta* (No. 39.4), *te* (Nos. 37.2, 39.2, 43.3), *ti* (Nos. 31.9, 37.10) and *tu* (No. 4.22); note especially the ligature in *tamen* in No. 41.2 where the cross-bar slopes downwards to facilitate the ligature and the letter looks like *p* in FIG. 11.25. Alongside these expected ligatures there are a few instances where *t* apparently ligatures with a preceding letter by means of the cross-bar: especially clear is *at* in No. 41.1, where a link stroke is added; cf. also *nt* (No. 38.10) and *st* (Nos. 23.3 and 5, 39.1). If these are true ligatures, the cross-bar must have been made first in these instances.

U. The letter can occur in several forms, three of which are illustrated in FIGS. 11.32–4.⁹⁸ Commonest is the form shown in FIG. 11.32, either written on the line or slightly above it. It is regularly above the line when making a ligature to the right, such ligatures being common, e.g. with *a* (No. 38.11), *e* (No. 37.6), *i*, *m* (No. 37.17) and *s*. Often the right-hand part of *u* coalesces with the following letter, especially in the ligature *us* (no doubt deriving from the conjoint *us* of stone inscriptions): for *u* in *us* reduced to no more than a slight hook see, e.g. Nos. 21.9, 43.1 and cf. No. 38.10–11.⁹⁹ Instances of *ui* ligatured in such a way as to resemble *q* with a straight descender are not common: cf. *cuius* (No. 37.11) and perhaps *qui* (No. 40.5). Ligatures with preceding letters are unusual, whether *u* is made in this or one of its other forms. Tablet No. 4 has *u* in at least three forms: the one just discussed, a variant where *u* is larger and made in the shape of a deep bowl (cf. line 40, *uini*) and a more angular form illustrated in FIG. 11.33 (cf. line 25, *uini* and, regularly, the numeral 5; see also No. 7.2). A different form is shown in FIG. 11.34, where *u* has a *hasta* at the right and resembles modern lower-case *u* (e.g. Nos. 22.10, 37.19 (*plurimos*), No. 46 (with marked serifs) and No. 47); there is a slight variant in No. 37.24 (*uindolanda*) where the *hasta* comes below the level of the rest of the letter. Sometimes this *hasta* curves to the right at the foot (e.g. No. 37.9) and very occasionally in this form it can ligature to the right as in *uo* (No. 37.18). Finally, note the remarkable *ur* in *muriae* (No. 4.33), perhaps best described as a conjoint letter (see note *ad loc.*).

X. Probable ligatures are to be seen in *ex* in No. 37.21 and 24, and perhaps in *xs* in No. 37.21. The letter calls for no special comment.

Y and **Z** do not occur.

E. CAPITAL AND ADDRESS SCRIPT

In Section D we have been concerned exclusively with the normal type of writing in use in the tablets. The only exceptions to this writing are (a) Tablet No. 11, which is written in a capital script and (b) the addresses which are written on the outside of several of the letters in what we have designated 'address script'.

It is in no way surprising that an example of capital script should occur in the tablets, since the use of capitals for military documents, or at any rate for headings within such documents, is well

95. Cencetti, *NP*, p.51. The letter is ignored by Casamassima-Staraz and there is no discussion in Mallon, *PR*, p.39.

96. See Cencetti, *loc.cit.*, where he describes the first part of the letter as resembling the mirror image of a *gamma*. He has shown beyond doubt that such a form is not uncommon in first-century papyri.

97. There is certainly no example in the tablets of a development of this form, referred to by Cencetti, in which *t* is made in a single stroke looped at the foot.

98. All these different forms of the letter also occur in contemporary papyri, see Casamassima-Staraz, *SC*, p.52, Cencetti, *NP*, p.52.

99. On this ligature and other ligatures made by *u* in this form and on the significance (or lack of it) for the development of NRC see Mallon, *PR*, pp.123–35 and *Museum Helveticum* 10 (1953), pp.150–6.

attested in Latin papyri.¹⁰⁰ It is, indeed, rather surprising that there is only one example of the use of capitals in the Vindolanda material. The script of No. 11 is a very far cry from the elegant capital of contemporary bookhand, with its marked differentiation between thick and thin strokes;¹⁰¹ it is a plain, unadorned hand, used for what is perhaps a heading.

Several of the letters bear an address written on the outside of the tablet. Usually this is written in elongated, thin and 'spindly' letters which we have called 'address script'. Examples are Nos. 21, 22, 23 (lines 12–3), 25, 28, 30, 33, 34 (the best example), 36, 40, 43, 49, 50, and 106 (cf. No. 42).¹⁰² Papyrus letters, from both Egypt and Dura-Europos, very occasionally have addresses on their outside and these too can be written in an enlarged script;¹⁰³ this can be quite similar to the 'address script' of the tablets, but the letters are usually made more like capitals. The letter-forms of addresses in the tablets are not very dissimilar in essence from the normal forms of the letters in ORC and we should perhaps regard 'address script' as no more than a variety of the standard cursive writing. Usually, a small portion of any letter is of no value in identifying it so that when, as is common, only a broken fragment survives it is generally impossible to make an accurate reading with any confidence.

F. ABBREVIATION AND PUNCTUATION

In Latin papyri words are frequently abbreviated without any indication being given that the word is abbreviated, and this phenomenon occurs occasionally in the Vindolanda tablets.¹⁰⁴ Abbreviation is common in the writing of dates: *k* = *kalendae* (No. 1.1, No. 4 *passim*, No. 6.1), *kmar* = *kalendis Martii* (No. 16), *kal* = *kalendis* (No. 30.8), *pr* = *pridie* (No. 2.1); on the other hand there appear to be medial points after *pr* and *k* for the abbreviation *pridie kalendas* in No. 23.7. Other unmarked abbreviations are: *praefcoh* = *praefecto cohortis* (No. 23.13) and *coh* = *cohors* (Nos. 23.6, 9.2, 30.3), *h* = *homines* (No. 1.1), probably also *inp* (No. 5 *ter*) and *m* = *modius* (No. 6.2, see note). In this last example the abbreviation may have been indicated by writing *o* over *m* (see note *ad loc.*); in No. 4, where there are frequent instances of *modius* abbreviated to *m*, the letter is usually surmounted by a horizontal flat dash, and where this does not occur we should probably attribute it to the inadvertence of the writer. The same abbreviation is found in No. 14.2 but *m* in No. 8.3 probably stands for something different (see note). *n* = *noster* is also regularly marked by the addition of a horizontal stroke over the letter, see Nos. 21.9, 30.5 and 34.3; cf. No. 23.9 with note *ad loc.*¹⁰⁵ At No. 21.9 (see note) the letter is preceded and followed by a medial point to draw attention even more forcibly to the use of an abbreviation. Such use of two medial points is regularly found in Latin papyri and manuscripts to indicate that a numeral is intended. For an instance of this in the tablets see No. 30.4; another example may occur in No. 23.6 (see note). Sometimes numerals are indicated by the use of a superscript bar (as with *m* = *modius*, mentioned above), for instance No. 2.2; but more often numerals are left unmarked (e.g. No. 4 *passim*). There is an interesting variant of this superscript bar in No. 9.2 (see note). Abbreviation by symbol occurs for *denarii* (No. 4.1–8, No. 5 *ter*, and Nos. 7.2, 8.4), *sextarii* (No. 4.25 etc.) and *centurio/centuria* (No. 3.8, 10, No. 22.8); note also *s* = *semis* (No. 4 *passim* and No. 6.2).

It is well known that in Latin writing of the early Empire a medial point, known as interpunct, was used to mark word division. It is equally well known that this practice did not survive, and

100. E.g. *ChLA* 7 and 219.

101. On this script see in particular P.J. Parsons, *JRS* lxix (1979), pp.135–7, G.P. Nicolaj, *Miscellanea in memoria di G. Cencetti* (1973), pp.3 ff.

102. Contrast the address of Nos. 39 and 45 (and No. 23.14–5) which are written in a script much more akin to the ordinary cursive than the 'address script'.

103. For Egypt cf. *ChLA* 245, 267; for Dura-Europos, *ChLA* 311.

104. It needs to be stressed, however, that in some cases the writer may have indicated the abbreviation but that this is no longer visible on the tablet.

105. This abbreviation also occurs in papyri from a relatively early date, see e.g. *ChLA* 215 of A.D.103.

was abandoned during the second century.¹⁰⁶ Since our tablets date from the very beginning of this century we might expect them to reflect a transitional stage, with some writers still using interpunct when others had abandoned it. This is indeed the case, although the use of interpunct is less common than we might have expected. Only No. 41 appears to use interpunct regularly; it is found between most words in No. 31 and is less systematically employed in No. 6 and (perhaps) No. 3. There may be a further example in the second hand of No. 22 between *uale* and *frater*. What appears to be an identical medial point is found in Nos. 23.4 and 38.4 (cf. also No. 38.5 note). These examples are perhaps better regarded as punctuation which, in the strict sense, does not otherwise occur in the tablets. However, it is very difficult to be sure whether such occasional dots are really ink and, if ink, are to be taken seriously and are not merely stray marks.

Word division as we know it today is not common in Latin papyri of the first two centuries A.D. and it is noteworthy that it is occasionally found in the tablets. It appears most prominently in No. 37, where the writer frequently leaves a space between words equivalent to the size of two or even three letters; but on other occasions he makes no division at all between words. For other notable examples of the use of word division cf. Nos. 39, 46 and 47. In this last example note that the monosyllable *et* is separated by a space from the word following; the writer of this tablet is therefore not following the convention known from Latin manuscripts of the medieval period where no break was made between monosyllables and the word following.

Deletions are found in a few texts and are always indicated by simply crossing through the word or words to be deleted, cf. Nos. 3, 5, 37. Occasionally words are divided between lines and the usual rules of syllabic division are followed, with the line beginning with a consonant; for an exception see No. 37.11–2 and note. Finally, it is worth noting the way in which No. 21, the only letter preserved in its entirety, is set out on the tablet: the first line commences much further to the left than the lines which follow, and line 3, the first line of the letter proper, is also set out further to the left than the following lines. In line 3 the first two letters of the first word (*op* of *optamus*) are made much larger than the letters following. A similar practice, both in the layout of the letter and the enlarging of the first letter in the line, is also found in No. 30, which may be the work of the same scribe (see introductory comments).

G. CONCLUSION

The interest and importance of the Vindolanda tablets for a study of Latin handwriting during the period of the early Empire will be clear from the preceding sections. In this concluding section we shall attempt to assess how the tablets fit, from a palaeographical point of view, into the picture, especially in the light of the points raised in Sections A–C.

We have discussed at some length the vexed question of the development of NRC and the extent to which its origins are to be seen in ORC (pp. 55–60). As all palaeographers are agreed that the crucial years for the development of NRC lie in the third century A.D., we should not expect the Vindolanda tablets to have any direct evidence to contribute. However, it has been alleged more than once (see pp. 56–7) that letter-forms found in ORC as early as the second or even the first century A.D. were indirectly of importance for the eventual development of NRC, and here we might hope to find relevant evidence in our tablets. In fact, some such evidence does emerge, as we have tried to indicate in the analysis of the letter-forms in Section D; note in particular the two forms of D, long and short I, one form of N, the two forms of P and of Q. On the other hand there is no evidence, so far as we can see, of the relevant forms of certain crucial letters, notably A and B. The most striking contribution made by the tablets in this area is perhaps the form of E shown in FIG. 11.12; such a form is certainly of importance for the development of NRC but has not, so far as we know, hitherto been found in a Latin papyrus as early as the first

106. The *locus classicus* is Seneca, *Ep.* 40.11. Seneca regards such interpunct as the norm in his time and contrasts Greek practice which never employed it. On the extent of its use from the late first century B.C. to the early second century A.D. see the detailed analysis by P.J. Parsons, *JRS* lxi (1979), p. 131 n.43; cf. also E.O. Wingo, *Latin Punctuation in the Classical Age* (1972).

part of the second century. The other interesting letter-forms can all be paralleled from contemporary papyri, but the additional evidence from the tablets is in all cases valuable and will provide further material for use in this debate. Although the tablets have nothing radically new to contribute (except possibly for the form of ϵ just mentioned), they do strengthen the view that several forms of the individual letters were in use at one and the same time in ORC of the first two centuries A.D., and to that extent they support the view that we can hope to find letter-forms in some types of ORC which were of importance for the development of NRC.

While this conclusion is of some importance, a further conclusion is, we think, of even greater importance: namely, the fact that the script of the tablets is in general terms, and despite the great variety of hands, very similar to that found in first- and second-century papyri from Egypt. From the very limited evidence hitherto available, the hypothesis has several times been advanced that Latin writing at this period was broadly speaking the same throughout the Empire.¹⁰⁷ Such a hypothesis is now considerably strengthened by the appearance of a substantial body of datable material from the western part of the Empire. We can now assert with some confidence that Latin cursive was written in much the same way at this period in all parts of the Roman world.

We mentioned above (pp. 58–9) the view which has been put forward, notably by Mallon and Cencetti, that Latin cursive writing, while still remaining within the category of ORC, developed into a different type in the second century from that current in the first (a type which Cencetti called ‘strisciato’). We also indicated that, on the other hand, we know from the papyri of an early form of ORC, in use in the Julio-Claudian period, which was much more akin to the capital script than to the type of ORC which later became the norm. There is no example in the Vindolanda tablets of a document or letter written in what we understand by this ‘early’ type of ORC. The nearest thing we have to this is the occasional occurrence of letter-forms which clearly show their derivation from the capital.¹⁰⁸ We may be confident, therefore, that this type of ORC had ceased to be used in Britain by the time our tablets were being written. There is, equally, no sign of the later ‘strisciato’ type of ORC, even though there are examples of scripts which appear ‘early’ and others which appear ‘late’. All our examples from Vindolanda fall between these two types of ORC which is more or less what we should expect, given the date at which these texts were written.

Within the type of ORC written in the late first and early second centuries, Cencetti distinguished two broadly dissimilar types, one of which he regarded as a ‘wax-tablet’ type of script (even though he quoted numerous examples of its use on papyrus) and another freer, more fluent type, which he considered to have been developed out of the ‘wax-tablet’ type when it became more usual to write on papyrus.¹⁰⁹ It may be that this is a fair description of the scripts on papyrus and that it is correct to suppose that the stiffer type of writing derives from a time when the writing-material used was the wax tablet;¹¹⁰ but we do not find this classification of scripts into two broad categories a helpful way to look at the writing on the Vindolanda tablets. What strikes us here is the considerable variety of scripts in use at one and the same time. This variety does not apply simply to the letter-forms, as analysed in Section D, nor simply to the extent to which ligature is employed,¹¹¹ but affects the whole character of the writing. We have not felt it helpful or desirable to classify the scripts into different categories, but we would draw attention to the marked differences apparent between, on the one hand, the free, elegant, right-sloping scripts employed in Nos. 21, 30 and 43 and, on the other, the stiff, relatively clumsy script of No. 22, or the squarish, upright scripts of Nos. 34 and 25. Alongside the ordinary, unexceptional cursive represented in Nos. 1 or 23, we have idiosyncratic hands (especially No. 37) and others

107. Cf. Mallon, *PR*, pp.55–73, Cencetti, *NP*, pp.31–4, Tjäder, *NLP*, p.89.

108. Especially r in No. 42.

109. Cencetti, *NP*, pp.10 ff., with copious references. He is certainly right to stress that there was no ‘canon’ in ORC during the first two centuries, a view which the Vindolanda tablets fully bear out (cf. *NP*, pp.8, 18).

110. We reiterate our doubt, based on the number of leaf tablets in the Vindolanda collection, whether the wax tablet was the normal writing medium, as has usually been assumed (cf. above, p. 44).

111. Thus ligature is on the whole not very common in the tablets, but it is employed with some frequency by the writers of Nos. 30, 31 and 38 and is extensive (and sometimes bizarre) in No. 37.

with an archaic look, for example Nos. 42 and 45. Every tablet, in fact, has its own distinctive style, and the principal impression we have formed from studying the writing of the tablets is, as we mentioned briefly above (p. 52), its immense variety. It is this variety above all which makes the Vindolanda tablets such a substantial and important contribution to the study of early Latin handwriting.

V. LANGUAGE

The tablets are of limited linguistic interest because of their brevity and imperfect state, but they do confirm one or two developments in first-century speech and orthography, and offer evidence of a few usages not otherwise known for this period. They are not linguistically uniform, presumably because their composers came from varying social strata. While a few tablets are marked by substandard Latinity (e.g. No. 22), No. 37 is manifestly the work of an elegant stylist. One may note the hyperbaton *militiam [po]ssim iucundam experiri* (lines 23–4), the literary metaphor *amplexus s[um] salutandi te occassionem* (lines 4–5), the ablative absolute *Crispino redeunte* (line 2), the old-fashioned spellings *saluom* (line 6) and *occassionem* (lines 5 and 16), and the artificial idiom *inter praecipua uoti* (lines 8–9) which seems to be a variation on a current formula of epistolography.¹ The hanging of a partitive genitive on a substantival neuter plural adjective is very rare in classical prose, but common in artificial stylists such as Sallust, Livy and Tacitus.² *Spei . . . compotem* (lines 7–8), *imple* (line 20) and *instrue* (line 22) also have a literary flavour.

A. SYNTAX

The tablets show a distinction between the methods of expressing ‘motion towards’ and ‘motion from’ a town. The former is expressed in the classical manner by a plain accusative in No. 42.3; *peruenisses Vin[dolandam]* (the restoration is virtually certain), the latter by prepositions in No. 37.24–5, *ha[ec ti]bi a Vindolanda scribo*,³ No. 30.6, *miseras a Bremetennaco*,⁴ No. 39.2–3, *a Cordonouis amicus missit mihi ostra*.⁵ The same distinction is found not only in late antiquity, but also in Vitruvius⁶ and a few other early imperial writers.⁷ The presence of the prepositional idiom in No. 37 shows that, whatever its status originally, it was not vulgar by this period.

The increasing use of prepositions to express ‘motion from’ coincided with, and may have been partly motivated by, the spread of a locative ablative in the singular of second-declension place-names (e.g. *CIL* 4.4299, *Herclanio*; Vitruvius 2.8.10, *Halicarnasso*).⁸ Along with directional

1. Cf. *CPL* 251.2 f. (= *P.Mich.* 468), *ante omnia opto te bene [u]alere, que m[ihi ma]xime uota [su]nt*; *CPL* 304.2, *opto deos ut bene ualeas que mea uota sunt*. On such formulae see P. Cugusi, *Letterature Comparete, problemi e metodo. Studi in onore di Ettore Paratore* (1981), p.735.
2. See R. Kühner, C. Stegmann, *Ausführliche Grammatik der lateinischen Sprache: Satzlehre*³ (revised by A. Thierfelder, 1955), i, p.433. Tacitus has genitives dependent on *praecipua* at *Ann.* 4.40, 4.41.
3. For the classical practice contrast Cicero, *ad Att.*2.1.2, *ad me rescripsit iam Rhodo*.
4. Here the prepositional phrase may go with a following verb, now lost (see the commentary *ad loc.*).
5. Contrast Cicero, *ad Att.*1.17.4, *litteras quas ad te Thessalonica misit*.
6. Contrast 2.9.16, *Rauennam deportatur*, with 1.4.12, *ab Troia rediens*; cf. 2.8.15, 7.9.4, 10.16.3 for the accusative, 10.2.15 for *ab* + abl.
7. Augustus is said to have used prepositions for the sake of clarity (Suetonius, *Aug.*86.1). For prepositions expressing ‘motion from’ in Livy, see Kühner-Stegmann i (cited in note 2), pp.478 f.
8. Cf. Vitruvius, 2.8.11, 7.7.2, 7.12.1, 8.3.7, etc. See further Kühner-Stegmann i (cited in note 2), p.477, J.B. Hofman, A. Szantyr, *Lateinische Syntax und Stilistik* (1965), pp.102, 145. There are isolated examples in earlier Latin (note Cato, *Agr.*135.1, *Venafro*, 135.3, *Casino*) but the phenomenon is mainly Augustan and later.

expressions containing *ab*, the tablets display an example of the locative ablative in *-o*: No. 22.8–9, *Annio Equestri (centurioni) regionario Luguualio rogo ut . . . Luguualio* here is adnominal. According to Hofmann-Szantyr (see note 8), p. 151, the adnominal locative occurs sometimes in early Latin, but was later not in normal use. But this example, which seems perfectly idiomatic, suggests that it may have been current in colloquial or substandard usage at this time.

In colloquial Latin a blurring had long since taken place between *quis* and *qui*,⁹ but in No. 22.6 it is *quid* and *quod* which have been confused: *si quod a te petierit*.¹⁰ The classical distinction between the neuters was maintained far longer than that between *quis* and *qui*,¹¹ but *(ali)quid* for *(ali)quod* does occur sporadically.¹² *(Ali)quod* for *(ali)quid* is much rarer, and according to Löfstedt is not definitely found until late Latin (the text at Celsus 6.7.4 is doubtful). *Si quod* here would seem to be the first instance of this phenomenon.

B. PHONOLOGY AND ORTHOGRAPHY

There are a few traces of the vulgar pronunciation change *ī* > *e* (No. 4.22, *masses[i]*, presumably Massic wine, No. 22.13, *debetorem*), both of them in unstressed syllables, but no sign of a corresponding change in the back vowels. The spelling *furnaces* = *formaces* (No. 1.7) is due to a contamination between *fornax* and its near-synonym *furnus*.¹³ *Saluom* (No. 37.6) and *quom* (No. 21.6) are old-fashioned spellings of some persistence in the early Empire (e.g. *CPL* 250.2, *saluom*; *CIL* 4.1654, *quom*; on the use of the spelling *quom* at this time see Quintilian 1.7.5). It is normal for vulgar texts of this period to show traces of the change from *ī* > *e*, without signs of that from *ū* > *o*.¹⁴ The closing of *e* in hiatus, another phenomenon of relatively early Vulgar Latin,¹⁵ is seen in *ostria* (No. 39.3) and *sagacias* (No. 44); see further p. 74, note 25, below. The contraction *petit* = *petiit* (No. 22.3) is commonplace.¹⁶ *C]ontibernalis* (No. 38.10) has the new orthography for the 'intermediate' vowel (Quintilian 1.7.21). One surprising feature of the tablets is the lack of evidence for the monophthongisation of *ae*, which had certainly taken place by this time.

Gemination of *s* after short vowels is a well-known phenomenon,¹⁷ but in No. 39.3 gemination is found after a long vowel (*missit*). Similar spellings abound in some partially published stylus tablets from Pompeii dated to the first century A.D. (e.g. *AE* 1972.86a, *Cessaris* twice, *Hessucus* twice; 87a, *Cessaris*; 87b, *Cessaris*; this is only a selection of examples). They may be interpreted as hypercorrect against the simplification of *ss* after long vowels, a development which is known to have been in progress in the first century (Quintilian 1.7.20). [*Oc*]cassionem in No. 37.16 (also no doubt in line 5) is not exactly parallel to *missit*, because the geminate would have been original to the word (see Quintilian, *loc.cit.* on *cassus* > *casus*).¹⁸ The spelling is not uncommon in manuscripts.¹⁹ In a document remarkable for its artificial Latinity it would have been adopted for its old-fashioned flavour.

On the final consonants in *it quot* (No. 21.3) see the commentary *ad loc.* *Karissime* and *Karus* (No. 25.3 and No. 22.1) have the familiar *k*-spelling before *a*.²⁰

9. See E. Löfstedt, *Syntactica. Studien und Beiträge zur historischen Syntax des Lateins* ii (1933), pp.79 ff.

10. If *quod* were adjectival this would be normal Latinity (cf. Cicero, *Verr.*4.47), but there does not seem to be space for a noun postponed after *petierit*.

11. See Löfstedt (cited in note 9), p.81 n.2.

12. Löfstedt, *loc.cit.* (note 11).

13. *TLL* vi.1.1118.20 ff. cites *CIL* 15.63a, b, c (time of Trajan). Note the alternation between the two forms in the manuscripts of Cato, *Agr.* 16.

14. See, for example, Väänänen, *ILV*³, pp.36 ff.

15. Väänänen, *ILV*³, p.45.

16. See F. Neue, C. Wagener, *Formenlehre der lateinischen Sprache*³ (1892–1905), iii, p.447, Väänänen *ILV*³, p.142.

17. See F. Sommer, R. Pfister, *Handbuch der lateinischen Laut- und Formenlehre*⁴ i (1977), p.156.

18. See Sommer-Pfister, *op.cit.* (note 17), pp.159, 181.

19. *TLL* ix.2.331.12.

20. See Adams, *VLLCT*, p.32.

C. MORPHOLOGY

With *Equestre* (No. 23.5) compare, for example, *CIL* 4.3943, *Cereale*.²¹ *-ī* was the usual adjectival ending, *-e* the nominal in *-i* stems in classical Latin, but in substandard Latin the distinction was not consistently maintained. Names with an adjectival origin seem to have been particularly prone to take on the *-e* ablative.²²

The vulgar genitive *subligariorum* (No. 38.4) has been discussed elsewhere.²³

When the Greek *ὄστρεον* entered popular Latin it passed into the feminine (*ostrea* is the normal form in early Latin). In the early Empire a learned reaction introduced the neuter *ostreum*, which became the more common form in first-century literature.²⁴ The writer of No. 39 chose the 'learned' neuter, but marred it by a substandard spelling (line 3, *ostria* with *i* for *e*). His stylistic pretensions are shown by the hypercorrect *missit* nearby (line 3).

Sagacius (No. 44 < *sagum*), which is found elsewhere only at Columella 11.1.21 (see No. 44.2 note),²⁵ is slightly abnormal among *-aceus* formations in that the majority are adjectives of material based on plant-names.²⁶ The function of the suffix in *sagacius* is problematical. It is unlikely that the word is an adjective of material. The normal sense of *sagum* is 'cloak' and there appears to be no evidence that it could be used of the material from which such cloaks were made. Like various other long adjectival suffixes, *-aceus* came to be used rather loosely, particularly in colloquial and later Latin, with a variety of functions. While numerous *-aceus* adjectives mean roughly 'composed of' the substance described in the nominal base of the word (e.g. *betaceus*, *fabaceus*, *farraceus*, *miliaceus*, *rosaceus*), others took on the meaning 'resembling' the substance of the base. *Ferulaceus*, for example, means both 'of *ferula*' (Pliny, *NH* 34.170), and 'like (that of) *ferula*' (Pliny, *NH* 27.89). The function of the suffix was further widened to mean vaguely 'belonging to, pertaining to, suited to', etc. *Hordeaceus*, for instance, could mean 'of barley', but 'barley pears' (*pira hordeacea*, see Columella 5.10.18) were so called because they ripened at the same time as *hordeum* (cf. Pliny, *NH* 15.55). In this expression the adjective means merely 'having a connection with *hordeum*', and the nature of the connection is unspecified in the formation itself; cf. *pulmonaceus*, 'belonging to, good for, the *pulmo*' (Vegetius, *Mul.*1.12.2, *radiculam, quam quidam consiliginem uocant, quidam pulmonaceam*), *columbinaceus*, 'belonging to the dove' (used at Caelius Aurelianus, *Acut.*2.111 with *pullus* = 'young of a dove'). There are thus two possible senses of *sagaceus*, 'like (that of) a *sagum*', or 'for, belonging to, the *sagum*'. Since the accompanying noun is lost in No. 44, one cannot specify the sense of the word further.

D. WORD ORDER

The tablets are too fragmentary to throw much light on word order. But No. 39.3 *amicus missit mihi ostria*, where the subject precedes the verb, the verb the object (SVO), and the dative pronoun is enclosed between verb and object, should be compared both with No. 38.2, *ram* (= *miseram* or *afferam* ?) *tibi paria*, and with various similar passages in roughly contemporary vulgar documents: *CPL* 303.4–5, *misi tibi . . . panes*; *CPL* 304.12–13, *misi tibi . . . chiloma*; *CPL* 305.6, *misi tibi uasum oliarium*; *CPL* 250.18 f., 251.8 f., 251.24, 252.13 (= *P.Mich.* 467, 468, 469). There can be no doubt that by this time in Vulgar Latin the regular position for the object was after the verb,²⁷ and that dative pronouns, in juxtaposition with the verb,²⁸ were showing a tendency to be enclosed between the verb and another stressed element.²⁹ *Misi(t)* + dative pronoun + object was almost formulaic in the epistolography of the period.

21. For other examples see Väänänen, *LVI*P³, p.84. For *Equestre* see Neue-Wagener, *op.cit.* (note 16) ii, p.56.

22. See Väänänen's examples (*loc.cit.*, note 21) and note Charisius, *GL* 1.124.16.

23. J.N. Adams, *BICS* 22 (1975), p.20.

24. Numerous examples of the two forms are given by Neue-Wagener, *op.cit.* (note 16) i, pp.821 f.

25. The form of the suffix (*-acius* for *-aceus*) is not uncommon; see for example F. Buecheler, *RhM* 20 (1865), p.441 n. 1 (= O. Hense, E. Lommatsch, *Kleine Schriften von Franz Buecheler* i (1915), p.577 n. 1).

26. See M. Leumann, *Lateinische Laut- und Formenlehre*⁶ (1977), p.287.

27. See Adams, *VLLCT*, pp.68 f.

28. Adams, *VLLCT*, pp.69 f.

29. For this tendency in later Latin see J.N. Adams, *The Text and Language of a Vulgar Latin Chronicle (Anonymus Valesianus II)* (*Institute of Classical Studies, Bulletin Supplement* 36, 1976), pp.130 ff.

Part II: The Texts

NOTE ON THE METHOD OF PUBLICATION

The approximate dates which can be assigned to the texts on the basis of the archaeological context are not repeated in the headings. These are:

Layers 10 and 8	<i>ca.</i> A.D.95–105
Layer 6	<i>ca.</i> A.D.105–15
Layers 5A and 5B	<i>ca.</i> A.D.115–25

In giving the dimensions of the tablets, we record the lateral dimension first and the vertical second.

The principles followed in presenting transcripts of the tablets are those which are generally used by the editors of papyri. A clear statement of such conventions and principles may be found, for example, in *The Oxyrhynchus Papyri* vol.XLVII (ed. R.A. Coles and M.W. Haslam, 1980), p.xiii. We have avoided the need to append an *apparatus* to our texts by presenting diplomatic transcripts of all substantial texts; here our aim has been to reproduce as closely as possible the original layout, spacing and appearance of the Latin. The use of arrows (→ ↓) indicates the direction of the grain of the wood in relation to the writing.

A. DOCUMENTS

1

Inv.nos.195 and 198
Plate I,1
Unpublished

Layer 10
(a) 9.3 × 7.7 cm
(b) 3.3 × 2.2 cm

Twelve joining fragments of an official document which clearly belong together. All are written in the same hand which is competent, but undistinguished and calls for no special comment. The writing is along the grain of the wood and the broad side of the tablet, and the left-hand margin contains notches and tie-holes. We do not think the format of this document can have been the 'rotulus' since our examples of this have the writing running across the grain and parallel with the short edge of the leaf (see above, pp. 39–41; this is also true of No. 2). One possibility we should allow for with both No. 1 and No. 2 is that the whole document was in the form of a diptych. However, whilst this is the normal format for a *letter*, we have no other example of a *document* written in this way.

The content is of some importance. The text begins with a date heading and then reports a large number of men (343) in the workshops (*fabricis*). There then apparently follows a list of assignments of individuals or groups of men and it is notable that several of these seem to be concerned with construction or with building materials. This casts an interesting light on the range of activities within or near an auxiliary fort. It should be noted also that line 6 appears to contain a reference to a hospital. The report of assignments in the *fabricae* is also of particular interest in view of the proximity of the deposit of the writing-tablets to the *fabrica* in the pre-Hadrianic fort (see Birley, *Vindolanda*, ch.VII); note that No. 3 may also be concerned with activities in the *fabrica*.

The total number of 343 men reported in the workshops in line 1 is large. We cannot be certain what proportion of the total number of men in the unit at Vindolanda this number represents but, if it is plausible to suggest that the greater part of the unit might be employed in the workshops when not on active campaign, then the number 343 is consistent with the idea that we may be dealing with the infantry section of a *cohors equitata*; note that in Mommsen's *pridianum* (RMR 64) the total number of 363 *pedites* in the *cohors i Augusta Praetoria Lusitanorum equitata* is broadly comparable. No. 1 might therefore be a record of *cohors viii Bataurorum* which we suggested was a *cohors quingenaria equitata* (above, p. 47). This supposition fits the view that the Batavian cohort occupied Vindolanda before the *cohors i Tungrorum* (see No. 30.4 note); the archaeological context suggests the earlier part of the period A.D.95–105, and it may be that the Batavian cohort was actually engaged in the construction of the new and larger fort which has been assigned to periods IIA and IIB (Birley, *Vindolanda*, p.108).

In attempting to classify this document more precisely, we should also take into account the comparable text in No. 2. This differs from No. 1 in that it appears to contain the name of the unit (line 2). But neither text conforms precisely to the parallels discussed by Fink (RMR, pp.179–82). These are: the morning report, containing the full number of personnel in the unit, names of officers, commander, name of unit, oath etc.; the monthly summary, which is always dated on the first day of a month; the *pridianum*, which has the name of the unit, date, station

name and biographical detail of the commander followed by a full inventory of the personnel, giving details of movements, accessions and losses over a period of time. Both our documents appear to be more closely comparable to the text recently published by R. Marichal (*CRAI* 1979, p.439) which contains simply a date, number and list of assignments. This is one of a series of texts from Bu Njem which Marichal calls ‘rapports journaliers’ and which he says ‘étaient présentés chaque jour à l’*officium* du *praepositus* qui en extrayait les données pour les incorporer dans les rôles comme ceux de Doura . . .’. Two explanations of our Vindolanda texts are possible: either they are parts of much more extensive documents, perhaps *pridiana* (for which see *RMR* 63–5, *ChLA* 454, 501, J.D. Thomas and R.W. Davies, *JRS* lxxvii (1977), 50–61) or they are daily reports, the details of which might later be incorporated into a full-scale *pridianum*.

DIPLOMATIC TRANSCRIPT

→ viikmaiasfabrīcis hcccxxxiii
 exeissutore uacat xii
 []uct resadbalneum xviii
 []lumb m uacat [
 5 []d . ar [
 [] . a []ualetudinar [
 adfurnaces [
 adlutum [
 tectores [
 10 m rpil [
 . . cae [
] . b [
 ad p [
 cum [

RECONSTRUCTED TEXT

→ vii K(alendas) Maias fabrīcis h(omines) cccxxxiii
 ex eis sutores uacat xii
 s[tr]uctores ad balneum xviii
 a]d plumbum [
 5 a]d . ar [
 [] . a []ualetudinar [
 ad furnaces [
 ad lutum [
 tectores [
 10 m rpil [
 ad cae [
] . b [
 ad p [
 cum [

TRANSLATION

“April 25, in the workshops, 343 men. Of these: shoemakers, 12; builders to the bath-house, 18; for lead . . . ; . . . hospital . . . ; to the kilns . . . ; for clay . . . ; plasterers . . . ; for rubble . . . ; . . .”

1. *fabrīcis*: we are confident of the reading, which we take to be a locative ablative, ‘at the workshops’; *ri* are the only difficult readings, since there appears to be too much ink, but some of the apparent traces may be dirt or other marks. The letter which follows is certainly *h*; we have

not found a certain parallel for our resolution but note that it is offered as a possibility in *RMR* 131. The Bu Njem ostrakon published by Marichal (*CRAI* 1979, p.439) has *n(umerus)* in line 1 but we certainly cannot read *n* in the Vindolanda text.

2. *sutores*: the only meaning given in *OLD* is 'shoemakers'; this activity seems rather out of place with the nature of the rest of the assignments, which are largely concerned with building and construction; but it is perhaps not so very strange in view of the quantity and variety of footwear found in the *fabrica* deposits (Birley, *Vindolanda*, pp.125–6).

3. *§[tr]uctores*: we are confident of this reading, especially since it fits the context so well. A *structor* appears in line 10 of the Bu Njem ostrakon (Marichal, *CRAI* 1979, p.439).

balneum: compare line 18 of the Bu Njem ostrakon. No bath-houses have yet been identified in the pre-Hadrianic forts at Vindolanda but we can be fairly sure that they will have been there (cf. Webster, *RIA*², p.199).

4. *plumbum*: there appears to be nothing immediately following. A numeral will have been written further to the right on the lost portion of this fragment. The entry is perhaps best taken as indicating that men were detailed to acquire (or perhaps work with) lead; compare *ad lutum* in line 8.

5. The writing is very faded here; *d* is fairly certain, however, and the letter following it looks most like *p*. Given the context we are tempted to suggest *a]d p[icari]am* ('pitch-boilery'), but there is very little space for *c*. On the manufacture of pitch see Pliny, *NH* 16.52–60.

6. The first trace is probably the descender of *a*.

ualetudinar[: probably *ualetudinar[ium]* or *ualetudinar[ii]*, depending on what preceded, cf. *RMR* 51.ii.20. There may be a reference to the building of a hospital; for *ualetudinaria* associated with auxiliary units see *CIL* 3. 14537, R.P. Harper, *Dumbarton Oaks Papers* 29 (1975), p.321 and cf. Webster, *RIA*², pp.216–7.

7. *furnaces*: this is a less common spelling than *fornaces* (see above, p. 73) but it is reasonably well attested (cf. *TLL* s.v. *fornax*). The Bu Njem ostrakon has *furnus* in line 17 which Marichal (*CRAI* 1979, pp.446–7) takes to refer to baking-ovens, but in view of the other entries in the Vindolanda text it is perhaps just as likely that they are kilns for firing clay (compare line 8 and see Pliny, *NH* 28.16, *cum . . . quadrigae fictiles in fornace creissent*).

8. *lutum*: see note to line 7 and compare *a]d plumbum* in line 4; clay, the raw material for bricks and tiles.

10. We cannot elucidate this. We have considered the possibility that the first part of the supposed *m* should be read as *a* but it is very difficult to reconcile what remains with *d*; and even if we read *ad* at the start we cannot suggest what can have followed. *il* is certain and *p* very probable before this; preceding it, *a* or *r*.

11. *cae[mentum]* seems quite likely in the context. Loose rubble is perhaps indicated, cf. Pliny, *Ep.*10.39.4, *quia sint caemento medii farti nec testaceo opere praecincti*.

12. We have considered the possibility that we might have *fabri* (cf. No. 3.7 etc.) but it is not possible to read it here.

14. Perhaps compare *ChLA* 454.32–4, *cum Crato (centurione)* etc.

2

Inv.no.32
Plate I, 5
Unpublished

Layer 8
4.8 × 3.2 cm

Four joining fragments of an official document. The loss of the greater part of this text is particularly regrettable since it bears every sign of being militarily important. For remarks on the format of the document see No. 1 introductory comments. The text of No. 2 was written parallel with the broad side of the leaf. If it was written in a single column on a half-leaf which was not folded, we would guess that not more than about 3 cm are lost at the right; but there is no way of telling whether it was not written, as in the letter format, in two columns on a leaf approximately twice this width.

We have discussed the classification of Nos. 1 and 2 in the introductory comments to No. 1.

We propose to interpret No. 2 as recording the strength of *cohors viii Batauorum* (see line 2, note). It seems clear that there was a quingenary and milliary series of Batavian cohorts. Of the former we have attestations for the first (Britain, A.D.122) and second (Moesia Inferior?) units; of the latter for cohorts *i*, *ii* and *iii* (Pannonia and Raetia). There is also a *cohors ix* which appears in Raetia in 147 and is attested as milliary in 153 (Roxan, *RMD* No. 46). Some of the quingenary units may have fought at Mons Graupius (Tacitus, *Agr.* 36) where, incidentally, Tungrian units were associated with them (see No. 30.4 note). Richmond and Ogilvie (Tacitus, *Agricola*, p.78) thought that the Batavian units at Mons Graupius were more likely to have been the milliary cohorts later found in Raetia and Pannonia but see now P. Holder, *AAT* p.111. As for *cohors ix*, we must either place it in the milliary series or suppose that it was originally part of the quingenary but was later increased in strength, between 147 and 153 (Roxan, *RMD* No. 46, P. Holder, *AAT* pp.5–6). It is noteworthy that this unit and the quingenary *cohors i Batauorum* are both *cohortes equitatae* and we think it quite likely that *cohors viii Batauorum* was also *equitata* (see No. 1 introductory comments, No. 4 introductory comments).

The hand is a clear and functional cursive with no real elegance, although there is a noticeable use of serifs (*i*, *l*, *n*, *u*) in the first line. Note also the fairly ornate initial *p* and the fact that small *p* (line 4) has a closed loop which is unusual in these tablets (see above, p. 66).

DIPLOMATIC TRANSCRIPT

→ Prnonasiulia[
 viii ba[
 adlocum [
 adimp..]

RECONSTRUCTED TEXT

→ Pr(idie) Nonas Iulia[s
 viii Bat[auorum
 ad locum [
 ad imp..]

TRANSLATION

“July 6 . . . 8th Batavian (cohort?) . . . to a place . . . to . . .”

1. This line commences considerably further to the left than the following lines. There is no abbreviation mark after *Pr*. If we are correct in supposing that this is some kind of a daily report (see No. 1 introductory comments), the line might be completed somewhat as follows: *Pr(idie) Nonas Iulia[s n(umerus) mil(itum) numeral coh(ortis)*. This basically follows the pattern of *RMR* 47, but it should be noted that in the latter the word *coh(ors)* and the name of the unit stand alone in line 2 of cols. i and ii. However, as Fink points out, in all such documents we have to make allowance for the individual practices of different clerks.

2. It seems almost certain that we have a reference to a military unit and several considerations lead us to propose the restoration *viii Bat[auorum*. The numeral and *b* following are certain; the next letter must be *a* or *r*; the traces of the third letter admit several possibilities. This narrows the choice to *Bat[auorum*, *Bre[ucorum* and *Bra[caraugustanorum*. Of these, the last can be rejected on palaeographical grounds alone; if the third letter were *a* we should be able to see part of the descending tail of the left-hand stroke (in any case there is no known cohort of this name numbered higher than five, see P. Holder, *AAT* p.235). There is evidence for a *cohors viii Breucorum* in Germania Inferior in the Julio-Claudian period (P. Holder, *AAT* p.225) but it is not

known ever to have been in Britain. Furthermore, we prefer to read the second letter as *a* rather than *r*; the tail of *r* in line 1 has a more pronounced bend to the left than either the *a* in the same line or the letter here under consideration. The principal reason for choosing to read *Bat[auorum* rather than *Bre[ucorum* is the evidence of No. 23.12–13. There is very little doubt that this is an address to Flavius Cerialis as *praef(ecto) coh(ortis) viii Bat(auorum)*. Although the numeral is not entirely free from suspicion we can be confident that it is not possible there to read the name of the cohort as *Bre(ucorum)* (see note *ad loc.*). Finally, *Bat[auorum* is supported by other evidence for Batavian units (see introductory comments).

3. *ad locum* [: we suggest that this notation indicates the presence of personnel from the unit at a place further described or specified (the periphrasis may indicate lack of a specific proper name). Compare the entries in No. 1 and perhaps also No. 12.

4. The last two letters are difficult. The penultimate letter might be *e* or *f*, the last looks most like *t*. *ad impet[* might suggest something like *ad impet[randum* followed by a noun (cf. *RMR* 47.ii.4; *missi ad hordeum comparandum* and the entries in No. 1.4, 5, 7, 8, 11). If the penultimate letter were *f*, we would have to consider *ad imp()f[*, which seems to rule out the possibility of reading the last letter as *t* (unless *f* is also an abbreviation); but the top-stroke is horizontal, which does not favour *a* or *r*. We can only suggest something like *ad imp(eratum) fa[ciendum*; but this seems vague and *imperatum* in the sense of an order seems to occur in military documents only in the oath *quod imperatum fuerit faciemus* (e.g. *RMR* 47.i.6). Since there is no other example of *e* or *f* in this hand we cannot express any firm preference.

3

Inv.no.82.i

Plate I, 6 and 7

Unpublished

Layer 8

2.2 × 7.7 cm

This enigmatic text consists of four joining fragments with writing on both sides. The plates suggest that there is a flush fit between lines A.7 and 8 and B.7 and 8 but we think this may be illusory. The use of both sides and the fact that the writing runs across the grain of the wood (as in the accounts, Nos. 4, 5, 8) supports the notion that this is an official document of some kind. The content also, in so far as it survives, suits an official document rather than a letter. It is noteworthy that the writing on one side is upside down in relation to that on the other, which is curious since both handwriting and content leave no doubt that we have the same document on both sides. There is no basis on which we can decide which is the ‘back’ and which the ‘front’.

The hand is a bold, practised cursive, slightly right-sloping. Possible interpunct occurs in A.7 and B.6 (though in both cases the dot may not be ink) and a clearer example, in the form of a short horizontal stroke, before the centurial sign in A.10. The other feature of note in the writing is the fact that there appears to be a large number of deletions: on side A, lines 1–3, 6 (?) and 11–13; on side B, lines 1–4 and 10–11.

It is impossible to explain this text satisfactorily because there is so little of it left. But we note the repeated use of the centurial sign (A.8, 10, B.2, 13) and the repeated occurrence of the word *faber*. This suggests that we might have a record, as in No. 1, of activities and personnel in the *fabrica* at Vindolanda, and it is worth noting in this connection that the deposit of writing-tablets lay very close to a building which has been identified as a *fabrica* (Birley, *Vindolanda*, ch. VII). Apart from No. 1, our best comparison, in this respect, is with *ChLA* 409, a record of personnel, including *cohortales*, working in a legionary *fabrica* (cf. perhaps also the duty roster of *legio iii Cyrenaica*, *RMR* 9).

SIDE A

↓ [[]em[]]
 [[]riu.[]]
 [[]utarius[]]
]arium []
 5]us adiu..[]
 [[]arium []]
]s faber[]
]..s 7 u[]
]um gladi.[]
 10]ușas 7 fru[]
 [[]..ralem[]]
 [[]iș faber []]
 [[]rrum[]]
 (m²)]t qp e.[]

SIDE B

↑ (m¹) [[]eni a[]]
 [[]ius 7 []]
 [[]uș ma ri.[]]
 [[]lius faber []]
 5]..am..[]
]s rufini []
]a ean.[]
 traces
]. faber []
 10 [[]atorium []]
 [[] frumen[]]
]a..am[]
]7 frum[]
]m []
 15 *trace*

A.2.]riu.[: the trace of the first letter is compatible with *a* and at the end should probably read *m*. This combination of letters also occurs in A.4 and 6. Given the uncertainty of the context, many supplements are possible, but it is perhaps worth pointing out that the word *scoparius*, meaning 'sweeper', occurs in the duty roster of *legio iii Cyrenaica* (RMR 9). This activity might be particularly appropriate to a *fabrica*. Note, however, that the word would then be in the accusative, whereas *faber*, which occurs a number of times in the document, is always in the nominative.

A.3. The last letter is incomplete, but the left-hand hook at the bottom does not suit *m* and is suggestive of *s*. Of the words listed in Gradenwitz, *LVL*, *scutarius* seems most appropriate to the context; it would presumably refer to a maker of shields (cf. Vegetius 2.11, *fabricae scutariae* and *ChLA* 409.ii.9, 13). The use referring to a shield-bearing guard in the Palatine *scholae* is late.

A.4. See the note to A.2. Given the large number of words with this ending it is not necessary to suppose that the same word occurred in A.2, 4 and 6.

A.5. *adiuto[r]* is definitely excluded. The penultimate letter is most likely to be *u* and the trace following it suits *a*. Hence perhaps some part of *adiuuo* or *ad iuuq[ndum]*.

A.6. See the note on A.4.

A.7. *faber*: the break in the tablet has removed the bottoms of the last three letters. Presumably

the preceding *s* is the end of a name; it may be followed by an interpunct (see introductory comments). As the references in *RMR* p.213, n.9 show, there must have been *fabri* in legions and auxiliary units as well as in the navy; for legionary *fabri* see Caesar, *BG* 5.11.3; Ps.Aur.Vict., *Epit.* 14.5; Vegetius 2.11; *ChLA* 409 (including *cohortales*) and in general *RE* VI (1907), 1918–20. It seems very unlikely that our text has anything to do with legionary personnel and we are therefore perhaps justified in regarding it as firm evidence for the presence of *fabri* in auxiliary units.

A.8. The centurial sign seems more likely to refer to a century than to a centurion. In all four cases (A.8, 10, B.2, 13) it is probable or possible that it is both preceded and followed by a name, X of the century of Y.

A.9. Some case of *gladius*, or perhaps *gladiarius* (on analogy with *scutarius*?, see A.3 note).

A.10. Before the medial point and centurial sign we should like to read a name (cf. A.8 note) but the obvious reading is]uṣṣas. The first *s* could be *r* and the second *p* but it does not seem possible to read the penultimate letter as *u* and we cannot suggest what might have stood here. After the centurial sign we can see little point in the occurrence of *frumentum*. A reference to a *centuria Frumentii* offers more sense in the context, cf. Frumentius as the name of a soldier of *cohors ii Tungrorum* in *RIB* 2109 (Birrens). It seems to occur again in B.13 and possibly also B.11.

A.11. Perhaps *de]xtralem*, an axe or hatchet, but the only example we can find (Isid.19.19.11) is late. Dr. Adams draws our attention to the fact that *dextralis* goes into some Romance languages, including Spanish (*destral*: W. Meyer-Lübke, *Romanisches etymologisches Wörterbuch* (1911) 2620), and that the Spaniard Isidore would therefore have got it from contemporary usage rather than earlier Latin.

A.12. See note on A.7.

A.13. We cannot read]frum[here.

A.14. This line is definitely the work of a second hand and may be some kind of a summary of the information above or a fresh heading for a list which follows. It seems inevitable that it is an abbreviation of some sort and it is perhaps followed by *ex*[. *RMR* index 10 lists no such abbreviations as *qp* or *qs*, but we might note for comparison the abbreviations *qdp* and *qmc* (*quondam deputati* or *dispositi*? and *qui militare coepit*).

B.1.]eni: this form of *n* with a long diagonal stroke is not found elsewhere in this hand. Also possible is]ea*i*, perhaps]ea*i*.

B.2. See note on A.8.

B.3. We might have the name *Macrinus* here.

B.4. See note on A.7.

B.6. The form of *n*, with the first stroke descending well below the line, is unusual but seems to recur in B.11.

B.11. We can perhaps read a centurial sign at the beginning followed by the name Frumentius, cf. A.10, B.13.

B.12. Perhaps]a*tiam*.

B.13. See notes on A.10, B.11.

4

Inv.nos.33, 47 and 62

Plate II, 1 and 2

Publication: Bowman, *Britannia* v (1974),
pp.360–73, pl.xxx

References: Bowman-Thomas, *VWT*, p.26,
pl.xiii

Bowman-Thomas, *Historia* 24
(1975), pp.466, 476–7

Bowman-Thomas-Wright, *Britannia* v
(1974), p.477

Layer 8

3.2 × 4.0 cm

2.5 × 3.3 cm

15.9 × 5.3 cm

16.4 × 5.5 cm

8.1 × 5.5 cm

- Thomas, *Scriptorium* 30 (1976),
pp.41–2
Wright, *Proc. XIVth Int. Congress
of Papyrologists*, p.355
Birley, *Vindolanda*, pp.154–5,
pls.79–80
Bowman, *ZPE* 18 (1975), pp.
237–52
J.N. Adams, *BICS* 22 (1975),
p.23
Turner, *RV*, pp.51–3

This multi-leaved set of tablets is the longest single document in the collection. The series contained at least two full diptychs and a half of a diptych at the end; but there were probably more if we may judge by the number of minor fragments. We have conjecturally assigned two of these fragments to the beginning of the text, as we have it, but the others cannot be placed. If the half-diptych which contains lines 42–5 is the end of the document, as we think, then these other fragments must all be assigned to the earlier part of the text. We think that these diptychs were tied together in a kind of concertina format (see above, pp. 39–40). The diptychs were scored and folded with the writing on the inner faces and the text was written across the grain of the wood and parallel to the short edge of the leaf. This practice is also noticeable in other accounts (e.g. No. 5, or *CIL* 3², p.953, No. xv, pag. posterior) and has obvious advantages for records of this kind in offering the use of long, narrow columns.

The sequence of the leaves in the document had to be established on the basis of (a) the way in which the various fragments were found in the ground and (b) the sequence of dates in the text itself. Beginning with the latter, we had no difficulty in establishing the order of the pieces which contain lines 10–45 and run from *xiii Kal. Iulias* through to *vii Kal. Iulias*. The fragment containing lines 7–9 was found adhering face to face with that containing lines 13–19, whilst that containing lines 10–13 adhered to a blank piece. Since the join at line 13 could be made with certainty, the relative position of the other two fragments could also be established as forming the top half of a diptych (with the lower part of this half being blank, possibly because line 9 marks the end of one series of accounts).

We are confident that only one hand is at work in lines 10–45, but we are uncertain whether the same hand wrote lines 1–9. Both parts of the text are in similar hands — competent, business-like cursives with no pretensions to elegance — but the idiosyncratic form of *r* which occurs in lines 12, 16, 26, 32, 34, 37 and 41 is not found in lines 1–9 (nor elsewhere in the tablets except in No. 7.3 which may well be written by the hand which wrote No. 4.10–45). In fact, this section has its own rather odd form of *r* in *sacrum* (line 7). But since so little survives in lines 7–9 it is unsafe to suppose that a different hand is necessarily at work. Palaeographically noteworthy are the forms of *d* (sometimes almost like a modern *c* as in *hordei*, line 21); the three forms of *u* (contrast *uini* in line 25 with the same word in line 40, and the more usual form of *u*, for example in line 10); *n*, which sometimes has a very long cross-stroke beginning far to the left, e.g. *uini*, line 25 (contrast the form in *axungiae*, line 35); *i*, which often has a pronounced serif to the right at the top, or even only part way up the *hasta* (e.g. *uini*, line 25, *domino*, line 36); and in general the forms of *h*, *b*, *g* and *m*. There is no other hand in the collection which closely resembles this (apart from that of No. 7, mentioned above). Its cursiveness is emphasised by the number of ligatures, especially between *e* and a following letter (*ei* in *hordei*, *passim*, *er* and *es* in *ceruesae*, line 12 etc.) and between *r* and a preceding letter (*er*, as noted above, *pr* in *priuatum*, line 32 etc., *or* in *hordei*, *passim* and, most interestingly, *ur* in *muriae*, line 33, on which see the note).

Lines 1–9 of the text record deposits of money or payments *ad sacrum*. The actual amounts, recorded in *denarii*, are fairly small if our interpretation of the numerals is correct. We can think of only two plausible explanations of *ad sacrum* in a military context. It might refer to the unit's strong-box which was kept in the *sacellum* (see Webster, *RIA*², pp.189–90) and to which individuals might have made small deposits (for *deposita* in pay records see *RMR* 68.iii.10 and for

contributions *ad signa*, interpreted as payments towards a burial fund or for the cult of the *signa*, where the word *sacrum* might find a context, *RMR* 68.ii.19). But we cannot parallel this use of *sacrum*, and lines 38–9 where one *modius* of wine is credited *ad sacrum* would be particularly hard to explain (cf. also line 5). Therefore we think it on the whole more likely that we are dealing with items set aside for sacrificial or religious purposes. We know, for instance, that extraordinary deductions were made from pay for special meals at the *saturnalia* (see *RMR* 68.ii.8 and iii.7 and, for ritual aspects of such banquets to which the word *sacrum* might be appropriate, Josephus, *BJ* 7.16); and there are other features of this document which suggest a religious connection (see note to lines 38–9). We might also note here the observation of Seneca, *NQ* 4a.2.7 on Egypt, although the context is not specifically military: *in haec ora stipem sacerdotes et aurea dona praefecti, cum sollemne uenit sacrum, iaciunt*. The nature of the rest of the account leads us to assume that this section was preceded by a date-heading and it is noteworthy that payments *ad sacrum* are recorded in at least three consecutive lines (7–9).

Lines 10–45 contain accounts of foodstuffs. The entries are arranged by date, beginning with *xiii Kal. Iulias* and include various kinds of food and drink reckoned in *modii* and *sextarii*. It seems obvious that we have here a kind of day-book recording either receipts or disbursements of foodstuffs over a period of several days (for a conjecture at the existence of such records see *P.Mich.* VII, p.32 and note the statement of Vegetius quoted above, p. 47). A good parallel for the form of the account exists in *RMR* 82 (= *P.Ryl.* 223); it contains entries under consecutive date-headings of small quantities of matériel relevant to shipbuilding or maintenance. The small quantities involved suggest that the supplies were being expended rather than acquired, and this is supported by the fact that the document specifies the use to which the materials are to be put.

There are several reasons for regarding most of the items in the Vindolanda account as disbursements rather than receipts. First, the amounts recorded are not very large and it seems unlikely that supplies would be taken in on consecutive days in such small quantities. Second, the time of year is inappropriate for the intake of commodities such as barley from harvest, though this cannot be regarded as conclusive since it might have been purchased or brought in from depots outside the camp. Third, and more forceful, is the point that the phrases attached to some items (*per priuatum*, *ad sacrum*, *ad stipes*) are much easier to explain if the supplies are regarded as outgoing rather than incoming (see below). Finally, we may note the occurrence of the word *allatus* in line 22, a line which has caused us considerable difficulty; the reading of this word is unimpeachable and it must, we think, indicate something brought in (probably wine); and if this is so it is natural to suppose that the other items are outgoing.

We consider the account, then, as a record of (a) contributions in cash and kind for some religious purpose and (b) the disbursement (with one item excepted) of food-supplies to military personnel over a period of a few days at the end of June of an unspecified year. We must now consider briefly the significance of the qualifying phrases mentioned above:

per priuatum (lines 18?, 32, 34, 37, 41, see also No. 7.3). The explanation offered in the *editio princeps*, that these were items purchased privately by soldiers in addition to their regular rations, now seems to us less certain. It is true that this practice is attested (R.W. Davies, *Britannia* ii (1971), p.124 n. 15, perhaps also in the Pselkis ostraka, *SB* 6955–76, which need not necessarily be receipts for regular rations); but we should now prefer an explanation which allows *per* to mean something more like ‘through the agency of’. One possibility, suggested to us by Professor Eric Birley, is to take *Priuatus* as a personal name (Kajanto, *LC*, p.315); thus the items would be issued through a person, perhaps a slave, named Privatus. An alternative, along the same line, is to take *priuatus* as meaning a civilian as opposed to a soldier (see *OLD* s.v. 2c). We can find no parallel for our original interpretation which implied a meaning like ‘through a private transaction’. Whatever the correct explanation, we still think it likely that the phrase would denote a disbursement outside regular rations. In each case the phrase refers to the item preceding it (as lines 40–41 prove).

ad stipes (line 36). The full context is *domino ad stipes per priuatum*, referring to *axungia*. We understand this as an issue of a commodity to be used for charitable purposes, though we are now less certain that *domino* indicates that it was made to the commanding officer (see note to line 36). For *stipes* see the quotation from Seneca (above).

These accounts have an important bearing on our knowledge of the food-supply of the Roman army and the military diet. The information they offer is to be put in the context of the very full discussion by R.W. Davies, *Britannia* ii (1971), pp.122–42. As far as the actual commodities are concerned, the list does not provide any great surprises, apart from the fact that there is no mention of *frumentum* (it does occur in No. 5.9) which was certainly the staple item of the Roman military diet. The commodity most frequently mentioned is in fact *hordeum* (barley), which was rarely eaten by the soldiers except in peculiar circumstances or as a punishment, though it could be used as an ingredient in various dishes (see line 11 note). It is possible that the soldiers were reduced to eating it at the end of the season as a substitute for *frumentum* (for a similar phenomenon see *IG XI.2.158.46–7*, a reference which we owe to Dr. D.M. Lewis). Of course, its normal use was as animal fodder; and if we are right in supposing that Vindolanda was occupied, for at least part of the period covered by the deposit, by a *cohors equitata* (see No. 1 introductory comments) there is no difficulty in explaining the repeated occurrence of *hordeum* (which, it should be noted, is never qualified by the phrase *per priuatum*). The other commodities mentioned are *muria* (fish-sauce), *axungia* (pork-fat), *uinum*, *acetum* (sour wine) and *ceruesa* (Celtic beer). The amounts of vintage wine (*uinum*) are in fact quite large compared with the small quantity of *acetum*. For a fuller picture of the variety of foods in use we should add that the account in No. 5 also contains (in addition to *frumentum*) *condimenta*, *sal*, *bracis* (a cereal) and various kinds of meat, *caprea*, *porcellum*, *perna* and *ceruina*. The latter may not all be part of the standard diet of the regular soldiers in peace time (see No. 5 introductory comments) and we might suspect that the items in No. 4, apart from *hordeum*, were not standard rations either.

As we have said, there is some indication in the account of a religious connection. Another curious feature, perhaps linked to this, is the fact that with one exception, no single date-heading has more than three items. The exception is *viii Kal. Iulias*, June 24, for which there are eight separate entries, which include the less common commodities and all the certain occurrences of the phrase *per priuatum*. This day was the festival of Fors Fortuna (see *CIL* 1², p.320, *I.Ital.* 13.2, p.473, *RE* VII.1, 16 ff.) and might therefore be a day on which extra food-supplies were needed and additional items purchased (note that the Dacian account discussed in No. 5 introductory comments is dated to 1 May, which led the editor to suggest a possible connection with the Larales). It is also appropriate for the items designated *ad stipes* and *ad sacrum diuinae* (?). Whether these items were intended for ordinary soldiers or for officers remains uncertain. At any rate, the whole operation which these accounts represent was presumably part of the regular administration by the *cibariatores* (see p. 47, note 6) and the *horreorum librarii* (R.W. Davies, *Britannia* ii (1971), p.136, n.96).

Changes from the *editio princeps* are discussed in the line notes. New photographs have enabled us to improve the text at several points, but it should be noted that we have adhered to some readings based on the original photographs which are not evident on the plates (e.g. because a fragment has become detached in the interim).

DIPLOMATIC TRANSCRIPT

Top of diptych?	↓	]X̄ iii s
		l.
].
	
	
		] s
5		]m̄[]ii X̄ s.
		]i . m X̄ s

uacat 1.3 cm.

New diptych			<i>uacat</i> 1.0 cm.]. sacrum ✕ []m̄ . d̄ sacrum ✕ []atam ad sacrum̄ [<i>uacat</i> 3.1 cm.
Fold	(<i>m</i> ² ?)	10	xiii k iulī[hord.[ceruesa[x[.] k iuli . .[] hordei m̄ iii[15] ceruesae m̄ ii []lias hordei []m ad ho.[] . tum []m̄ ii [<i>uacat</i> 1.3 cm.
New diptych		20	x k iulias [hordei m v s̄ [allatus uin̄ . . . ssec[viii k̄ iulias [hordei m̄ v s̄ [25 uini m̄ i f̄ xiii[ceruesae m̄ iii [viii k iulias [hordei m̄ vi[Fold
		30	ceruesae m̄ iii f̄ . . . uini m̄ i f̄ xii aceti f̄ ii per priuatum muriae f̄ i s̄ per priuatum 35 axungiae f̄ xv domino ad stipes per priuatum uini m̄ i ad sa duae 40 uini f̄ xii per priua . . [<i>uacat</i> 1.5 cm.
New leaf			vii k iulias hordei f̄ i . domini brigae . . . [45 runt <i>uacat</i> 3.0 cm.
Unplaced fragments:	(a)		. . . . ].ias].].i].ur

(b)

50]s m̄ i
]iis

. . . .

(c)

]...
]f v s
] ii .

. . . .

(d)

55]si is

. . . .

RECONSTRUCTED TEXT

↓](denarii) iii s(emis)
].
].

.

.

5]m(odii) []ii (denarii) s(emis).
]i m (denarii) s(emis)
uacat
a]d̄ sacrum (denarii) [
]m̄ ad̄ sacrum (denarii) [
]atam ad sacrum [
uacat(m²?) 10 xiii K(alendas) Iuli[as
horde[i
ceruesa[ex[i]i K(alendas) Iulia[
hordei m(odii) iiiii [
15 . ceruesae m(odii) ii [
xi K(alendas) Iu]lias hordei [
], m ad hor[
].. tum
]m̄(odii) ii20 x K(alendas) Iulias
hordei m(odii) v s(emis)
allatus un̄i ..ssec[
viii K(alendas) Iulias
hordei m(odii) v s(emis)

25 uini m(odius) i (sextarii) xiiii
 ceruesae m(odii) iii
 viii K(alendas) Iulias
 hordei m(odii) vi. [
 ceruesae m(odii) iii (sextarii)...
 30 uini m(odius) i (sextarii) xii
 aceti (sextarii) ii
 per priuatum
 muriae (sextarii) i s(emis)
 per priuatum
 35 axungiae (sextarii) xv
 domino ad stipes
 per priuatum
 uini m(odius) i ad sacrum
 diuuae
 40 uini (sextarii) xii
 per priuatum
 vii K(alendas) Iulias
 hordei (sextarii) i.
 domini brigae... [
 45 runt
 uacat

Unplaced fragments (a)
].ias
].
].i
].ur
 (b)
 50]s m(odius) i
]iis
 (c)
]. . .
](sextarii) v s(emis)
]. ii.
 (d)
 55]si is

TRANSLATION

5 " . . . 3 (?) modii, 1/2 denarius +
 1/2 denarius.
 . . . for the festival, n denarii.
 . . . for the festival, n denarii.
 . . . for the festival . . .
 10 June 19:
 Of barley . . .
 Of Celtic beer . . .
 June 20:
 Of barley, 4 (?+) modii.

- 15 Of Celtic beer, 2 (?+) *modii*.
 June 21: Of barley . . .
 . . . to the granary (?) . . .
 . . . 2 *modii*
- 20 June 22:
 Of barley, 5 1/2 *modii*.
 Of Massic wine (?), brought in . . .
- June 23:
 Of barley, 5 1/2 *modii*.
- 25 Of wine, 1 *modius* 14 *sextarii*.
 Of Celtic beer, 3 *modii*.
 June 24:
 Of barley, 6+ *modii*.
 Of Celtic beer, 3 *modii n sextarii*.
- 30 Of wine, 1 *modius* 12 *sextarii*.
 Of sour wine, 2 *sextarii*,
 through Privatus (?).
 Of fish-sauce, 1 1/2 *sextarii*,
 through Privatus (?).
- 35 Of pork-fat, 15 *sextarii*
 to the lord for charitable donations,
 through Privatus (?).
 Of wine, 1 *modius* for the festival
 of the goddess (?).
- 40 Of wine, 12 *sextarii*,
 through Privatus (?).
 June 25:
 Of barley, *n sextarii*.
 The lords . . . at Briga (?)”

1. We have omitted to note the two tiny fragments which are placed before this line in the *editio princeps*. We think this placement is correct but the traces are so exiguous that we could not even hazard a guess at what they are supposed to represent. As the bent fibres at the edges indicate, they belong to the bottom edge of one half of a diptych and the top edge of the other. Lines 1–3 are on a fragment which is from the top right-hand corner of a leaf. At the top left is a cut which was probably part of a V-shaped notch.

2. ‘In line 2 perhaps]X’ (*editio princeps*). We still think this is the easiest reading; but as no trace of a numeral survives after it we should perhaps read *s(emis)* instead, assuming that the apparent cross-stroke is not in fact ink. The trace surviving in line 3 may be the same.

5. ‘*m(odii) ii (denarii) s(emis)*’ (*editio princeps*). There is a break between the measure and the numeral which could accommodate one digit. *m* is certain and apparently has over it a flat dash like that which surmounts it elsewhere in this text (line 15 etc.), where it certainly stands for *m(odius)*. If it stands for *m(odius)* in this line, it is noteworthy that here and here only (but see note to line 43) it is followed by an amount in *denarii*. It was suggested in the *editio princeps* that the cash sum might represent the cost of the item preceding (on prices of commodities see in general R.P. Duncan-Jones, *Chiron* 6 (1976), pp.241–62), but it is perhaps more likely that the account is simply recording a credit of a commodity *and* a cash sum. Throughout the text we have resolved the measures in the nominative case, following the name of the commodity which is in the genitive (see our remarks in No. 5 introductory comments and in the notes to No. 4.16–18 and 22). In the case of fractions, as here, we suppose that *denarii* is a genitive followed by *s(emis)* in the nominative. The symbol following *s(emis)* might be the sign for *asses* (cf. R. Cagnat, *Cours d’epigraphie latine*⁴ (1914), p.472).

7. On the meaning of this notation see introductory comments, pp. 84–5.

8. ‘Perhaps]i qd> *sacrum*’ (*editio princeps*). The apparent long downstroke on the first letter is

almost certainly not ink; *a* is difficult but we are now reasonably confident that *d* was written. The word or phrase preceding *ad* might be the same as in line 9 but we cannot guess what it might have been.

9. *latam*: only the long tail of the first letter survives. *a* is preferable to *r*, since *r* is not elsewhere written with a long descender in these lines (nor in the account as a whole except in the rather special ligature in *muriae*, line 33, on which see the note).

10–13. About half the width of the complete column is missing at the right.

11. *hordeum* is the commodity most frequently mentioned in the account, occurring seven times. For possible explanations of this phenomenon see introductory comments, p. 86. For its consumption by soldiers see Vegetius, 1.13, Suetonius, *Aug.*24, Polybius 6.38.3 and cf. Galen (Kühn) vi.507, R. W. Davies, *Britannia* ii (1971), p.123. It could be used in cooking *polenta* for example (see André, *ACR*, pp.52, 57, 63–4). For barley and its collection cf. *P.Dura* introduction, p.41 and J.F. Gilliam, *YCS* 11 (1950), pp.243–4.

12. *ceruesa*[*e*: the more common forms are *ceruesia* and *ceruisia* but *ceruesa* is found elsewhere (see *TLL*, *OLD* s.v. and the remarks by J.N. Adams, *BICS* 22 (1975), p.23). *ceruesa* is Celtic beer which is known to have been in use in the army, see R.J. Forbes, *Studies in Ancient Technology* iii² (1965), p.130 and Davies, *op.cit.* (note to line 11), p.133 who cites evidence for grain-malting in its manufacture. André, *ACR*, p.180 says that the cereal basis is not known, but the references given by Lauffer, *DP*, ad 2.11 show that it could be made from *frumentum* or *bracis* (for the latter see No. 5.16 and note).

14. *modius* is throughout abbreviated as *m*; normally this is surmounted by a horizontal dash but here and in line 21 it is omitted, no doubt through inadvertence, cf. *ChLA* 436 and *P.Mich.*449 where it appears as *m̄* (cf. No. 6.2 note). It was stated in the *editio princeps* that the *modius* in use here is likely to be the *castrensis modius*. This was in standard use in the later Empire, but in the first century A.D. it is more likely to be basic Italic *modius* of approximately 8.6 litres. The *castrensis modius* is 1.5 times this capacity according to R.P. Duncan-Jones, *ZPE* 21 (1976), pp.43–52 and 53–62. The loss at the end of this line might have removed a quantity of *sextarii*.

15. The *modius* is normally used for dry goods, and it is rather odd that it should be used in this account for wine and beer as well as the other foodstuffs. We have not been able to find another document in which we can parallel this use. We can adduce only Pliny, *NH* 23.88 on walnut oil, *si quid in nucleo putridi fuerit totus modius deperit*, Sidonius, *Ep.*2.2.8 on the capacity of a *baptisterium* (cf. *TLL* s.v. 1242.57 ff.) and the late reference from *Ioniae uita Columbani* quoted in No. 5.16 note.

16–18. There are difficulties in restoring these lines. There is no doubt about the date in view of lines 13 and 20. Normally this stands alone in the line, but here the writer has gone on to fill the right-hand side of the leaf. We might be tempted to suppose that this entry was of a different type from most of the others and we could restore: *hordei [m(odium) i / allat]um ad hor[reum / per pri]uatum*. The two difficulties are first, that the trace before *m* in line 17 does not suit *u* very well and second, that we would expect a nominative rather than an accusative case here, especially if our interpretation of line 22 is anywhere near the mark. But we have no other suggestion to offer. Note also that the *ꝛ* at the end of line 17 is far from certain.

20. There is a large gap between *u* and *l* of *Iulias* where there is a crack in the leaf which the writer had to avoid. The *a* in *Iulias* has been remade from what looks like *s*.

22. *'allatus uā . . . rāsse.'* (*editio princeps*). The improved photograph confirms *allatus*, and we are fairly confident that it was followed by *uin* and that the letters immediately before the break are *ss*. Very hesitantly, we suggest that we should understand *m(odius)* to have been lost at the right (to agree with *allatus*) and that *uini Massed[i]* preceded. This is not easy palaeographically, since we probably have to assume that the writer first put *uini mssec[* and then wrote in the *a* by means of a long descender from the final part of *m*. There are two further difficulties: (1) the spelling should be *Massici* but it hardly seems possible to read the letter after *ss* as anything other than *e*; (2) we are unsure whether such a high-class product would be likely to be found at Vindolanda (on Massic wine cf. Pliny, *NH* 14.64). This must be an incoming item (see note to lines 16–18) and as a parallel we note *CIL* 4.1239, cf. *Add.*, p.205, *faenu(m) al(l)atu(m) viii Idus Octo(bres)*; cf. perhaps also *ChLA* 475.

25. *uini*: the final *i* has an emphatic serif to the right and the middle *i* also has a tick half-way up the vertical. The *sextarius* sign is paralleled on the Carvoran corn-measure of the same period (see F.J. Haverfield, *Arch. Aeliana* (third series) 13 (1916), p.84). It also occurs in *P.Mich.* 449.10 (not recognised by the editor) and in an account from Dacia (see No. 5 introductory comments). R. Cagnat, *Cours d'épigraphie latine*⁴ (1914) gives this (p.461) and another symbol (p.473).

31. *acetum* is a low-quality wine which could be mixed with water to make a drink called *posca*, see R.W. Davies, *Britannia* ii (1971), p.124. It also appears in the Dacian account (see No. 5 introductory comments) where the price is half a *denarius* per *sextarius*.

32. *per priuatum* has been written in afterwards and squashed in between two lines. On the interpretation of the phrase see introductory comments.

33. *muriae*: there is a remarkable ligature in *ur* (perhaps better described as a conjoint letter) in which the descender of *r* is prolonged to some distance below the line, a feature of *r* not found elsewhere in this hand. The writing of *ur* in this way reminds us of the manner in which these letters are occasionally joined in mediaeval manuscripts (a phenomenon which is attested much earlier as well). For *muria* (fish-sauce) see Davies, *op.cit.* (note to line 31), p.131 and cf. *condimen[torum]*, No. 5.3).

34. '*per priuatum*' (*editio princeps*). The second *p* runs into the tail of *r* in the previous line, but the new photograph shows that it was not omitted as was assumed.

35. *axungia* is pork-fat, for which there were many uses. See Pliny, *NH* 28.136, *usus axungiae ad emollienda, excalfacienda, discutienda purgandaque* (cf. Galen (Kühn) xii.346) and the references given by André, *ACR*, p.186, Lauffer *DP*, ad 4.11. It appears on the Palmyrene Tariff, *CIS* ii.iii.3913.49 (Greek) and in *CIL* 4.2070 (Pompeii), *iix Id. Iulias axungia p.cc.* See also the following note.

36. *domino*: this was taken in the *editio princeps* to refer to the commander of the unit at Vindolanda, but we are now very unsure of this since we cannot parallel the usage at all. The word is, of course, frequently used in military circles in addresses both to equals and superiors (for the third-person usage see No. 37.6). We have no alternative suggestion to offer and its meaning in line 44 is even more obscure (see note).

ad stipes: this means alms or charitable contributions and it can have a religious significance as is made clear by Varro, *LL* 5.182, *id apparet, quod ut tum institutum etiam nunc diis cum thesauris asses dant stipem dicunt* and by Seneca, *NQ* 4a.2.7 (quoted above, p. 85). The meaning of the whole entry in lines 35–7 might be that the pork-fat was credited to the *dominus*, through a *Privatus*(?), to be given away as a charitable distribution or dole (to local civilians?). The festival of *Fors Fortuna* might be a suitable occasion for the giving of charity. Or perhaps, as was suggested in the *editio princeps*, the commodity had some role in the performance of a sacrifice. For special needs on festival days cf. *CPL* 305.5, *quia in die festo mi opus est.*

39. '*d. ae*' (*editio princeps*). The correction to *diuiae* was suggested to us by M. Robert Marichal (by letter). It would presumably refer to a goddess and would make good sense with *sacrum* preceding it; it might then, however, mean 'shrine' rather than 'festival' (see the dedication of a shrine in *CIL* 1² 801, *sei deo sei diuiae sac(rum)* and cf. *ILS* 2986). However, *diua* = goddess is scarcely ever found except in poetry and would be somewhat unexpected in a document of this kind. We have also considered the possibility that *duae* is an error for *deae* (for the spelling cf. *CIL* 8.11700, Africa, *duis* — but that might rather represent *diis*), but this would be strange.

42–5. The new readings result from a much improved photograph. For our conjecture that this was the last leaf in the series see above p. 40.

43. Apparent traces between *hordei* and *f* may not be ink. If they are, we should no doubt read them as *m(odius)*. There is a mark at the edge of the leaf which looks like a *denarius* sign, but we think it is unlikely to be ink. The leaf is certainly complete at this edge and there would not be room for a numeral to follow.

44–5. We can make no sense of this though the reading of most of it seems clear. If *runt* is a verbal ending, as it surely must be, it would follow that *domini* is masculine plural (but we do not know who these 'lords' are, see note to line 36). *man[se/runt]* is a possible reading but we cannot explain it satisfactorily. Is *brigae* a place-name? If so, surely not the place in Hampshire (see

Rivet-Smith, *PNRB*, p.227 f.). Finally, we are puzzled by the fact that all this seems to have no evident connection with the rest of the text.

46. Not *Iu|liā*.

47. Possibly *js*.

5

Inv.no.11

Plate II, 3

Publication: Bowman-Thomas, *VWT* p.28

References: Bowman, *Britannia* v (1974), p.366

Bowman-Thomas-Wright, *Britannia* v
(1974), pp. 477-80, pl. XLIII

Wright, *Proc.XIVth Int. Congress
of Papyrologists*, p.355

J.N.Adams, *BICS* 22 (1975), pp.21-3

Birley, *Vindolanda*, p.155

Bowman, *ZPE* 18 (1975), p.239, n.8

Bowman-Thomas, *Historia* 24 (1975), p.476

Layer 8

3.3 × 13.5 cm

This document consists of a diptych which was scored and folded with the writing on the inner faces. The outer faces are blank. Comparison of the dimensions of the surviving pieces with other complete examples suggests that the loss at the top and bottom might be about 1.5 cm at most and at the right-hand side perhaps 2 cm. The loss of the top and bottom edges will have removed the tie-holes, if such there were, and it is thus impossible to be sure whether this document consisted of a single diptych or a series tied together, as in No. 4 (see above, pp. 39-40). Like No. 4, this text is written across the grain of the wood and parallel with the short edge of the tablet. It will have had to be opened longitudinally, thus presenting a single continuous column. The habit of using tablets in this way for accounts is paralleled in a very similar text on a wax tablet from Dacia (*CIL* 3², p.953 No. XV, *pag.posterior*), which closely resembles the Vindolanda text in several ways. It begins with a date-heading (we cannot tell whether No. 5 began similarly because the top is lost, but it is not at all unlikely) and continues with a list of items of food followed by amounts in *denarii*. The items are in the accusative case, except for two which are in the genitive, and are followed by the *sextarius* symbol (*f*). This does not appear in the present Vindolanda account but it is to be found in No. 4. It is clear that in the Dacian tablets the *sextarius* symbol explains the use of the genitive. In No. 5 the genitive is used in line 5 and probably in line 16, whereas we have the accusative in lines 4, 6 and 7, all meat items; the other case-endings are lost. In the *editio princeps* we restored all other endings of words for meat in the accusative, but used the genitive (understanding a word of quantity) for the non-meat items. We added that this was 'somewhat arbitrary'. J.N. Adams, in the article cited above, examined the language of this document and stressed that alternation between accusative and genitive in such lists may be entirely haphazard. This is correct, but the evidence of the Dacian tablet supports the use of accusative and genitive in the manner assumed in the *editio princeps*, and we have therefore retained the same restorations of the case-endings in the present edition. Adams supposed that the meat items must have been followed by a weight (and cited examples of this), but the Dacian text shows that this is not necessarily the case: in line 16 it has *porcellum (den.) v*. We might suppose that similarly in the Vindolanda text all the meat items were followed directly by an amount in *denarii*, that is, it recorded the purchase of 'meat at a price of *n denarii*'. Unfortunately, in the only line where any trace of ink survives after the meat item (line 7) we have been unable to read what follows *pernam*.

There is no reason to believe that No. 5 is part of the same series of accounts as No. 4. The hands in which they are written are markedly dissimilar. The present writer uses a right-sloping, not inelegant form of Latin cursive with tall, slim letter forms. Note the large initial *p* in line 6,

the shape of *n* with the cross-stroke almost horizontal, and the two forms of *d* (notably in line 12).

Although both Nos. 4 and 5 deal with food, no item which is in one recurs in the other. It seems likely that the items in No. 5 represent purchases made on behalf of one of the units stationed at Vindolanda. The most noteworthy feature is the high proportion of meat and its variety. Until very recently scholars, perhaps misled by Vegetius, were in the habit of saying that Roman soldiers ate little meat (e.g. Webster, *RIA*² p.255, 'meat was certainly eaten on special occasions, festivals and feasts but was not regarded as a daily need'). R. W. Davies has suggested (*Britannia* ii (1971), pp. 122–42), on the basis of a study of bone remains in Roman forts, that this is not true and that soldiers consumed a good deal of meat. The animal remains found at Vindolanda certainly fit this picture (see Birley, *Vindolanda*, pp.122–3). The present text would seem to confirm this (all the meats mentioned, except perhaps venison, were reasonably common), but a word of caution is necessary. There is no means of knowing for certain whether this list represents the soldiers' regular diet or whether it refers, for example, to officers' rations only or to special commodities purchased for a feast. The Dacian account contains both meat and non-meat items; it includes only *porcellum* of the meats in No. 5 and only *sal* of the other items (but it does have *acetum*, which is in No. 4.31). Its editor suggested that the account might refer to the Larales (but note that there is no evident connection in the text with the army) and part of the account in No. 4 might well relate to the festival of Fors Fortuna (see No. 4 introductory comments). On the other hand, the reading of line 12 in No. 5, if correct, suggests that there is a good chance that at least part of this account records purchases for daily use (see note *ad loc.*). For more general matters relating to diet, stores and provisions and the bookkeeping connected with them see above, p. 47.

DIPLOMATIC TRANSCRIPT

	↓	]n [
		]s̄ ✕ [
		condimen[
		capream[
5		salis [
		porcellum[
		pernam [
		in p[
		frumen[
10		ceruin[
Fold		
		in p.[
		ad cotidia[
		caprea[
		[[s̄ ✕ [
15 (<i>m</i> ² ?)		s̄ ✕ xx [
(<i>m</i> ¹)		braciş [
		✕ i[
		].um[

RECONSTRUCTED TEXT

	↓	]in p[
		]s̄ (denarii) [
		condimen[torum
		capream [
5		salis [
		porcellum [

pernam . [
 in p[
 frumen[ti
 10 ceruin[am
 in p.[
 ad cotidia[n
 caprea[m
 [[s(umma) (denarii) []]
 15 (*m*²?) s(umma) (denarii) xx [
 (*m*¹) braci[s [
 (denarii) i[
] .um[

TRANSLATION

“ . . . in . . . *denarii* . . . , of spices . . . , roe-deer . . . , of salt . . . , young pig . . . , ham . . . , in . . . , of wheat . . . , venison . . . , in . . . , for daily . . . , roe-deer . . . , total *denarii* 20 . . . , of emmer . . . , *denarii* 10+ . . . , total (?) . . . ”

1. *in p*[: the reading is probably the same as line 8 and line 11 (see note *ad loc.*).

2.]s: there are several dark marks visible on the plate at this point which seem not to be ink. In the *editio princeps* we read]ç but we are now satisfied that it is just as easy to read]s. s, which would presumably stand for *s(umma)*, cf. line 15, makes more sense. It is perhaps worth noting that the Dacian account (see introductory comments) has a date-heading followed by a total credit from which individual sums are then deducted. Possibly our text began with some such entry as *acc(epti) denarii* followed by a numeral.

3. *condiment[orum*: for the restoration of the genitive see introductory comments. Compare *Ed. Diocl.* 6.48, *condimen[torum] praemis quorum fasces n. octo*. On this and the items referred to below in Diocletian's Price Edict there are excellent bibliographies in the notes of Lauffer, *DP*, *ad locc.*

4. *capream*: also in line 13, the only item to occur twice. In the *editio princeps* we took this to mean goat's meat and supposed it equivalent to *capra*. In the fourth chapter of Diocletian's Price Edict the meats listed include all the others which occur in our text and *Ed. Diocl.* 4.45 refers to *capra*, which is certainly goat's meat because of the Greek equivalent (*αἰγάριον*). However, *TLL* and *OLD* distinguish *capra* and *caprea* and regard the latter as the name for roe-deer. It might be felt that a reference in our text to roe-deer is unlikely because of the occurrence in line 10 of *ceruina* (venison). But it is not at all unlikely that by *ceruina* was meant the flesh of red deer (deer *par excellence*). We know that both red and roe-deer existed in the vicinity of Vindolanda in Roman times (but not fallow deer which were not introduced until the thirteenth century), and that (in the middle ages and later) roe-deer were regarded as inferior; so the term 'venison' could be restricted to the flesh of red or fallow deer, cf. *OED* s.v. (we are indebted for some of this information to Mrs. J. L. Drury).

5. *salis* [: just before the break at the edge there is a trace of ink which could be part of a superscript bar as used over *m* (for *modii*) in No. 4 (see note to line 5). But we cannot be sure whether *m* or another kind of measure might have been written (but see Cicero, *Amic.* 67, *multos modios salis simul edendos esse, ut amicitiae munus expletum sit*). The weight abbreviations *p*, *q* or *Q* would be appropriate for a commodity like salt. Dr. R.W. Davies pointed out to us that salt might have been used for preserving the meat. It also appears in *CIL* 3² p.953 no.xv.25, *salem et cep(am)*.

6. *porcellum*: cf. *CIL* 3² p.953 no.xv.16, *Ed. Diocl.* 4.46, *porcelli lanctantis (sic)*.

7. *pernam*: cf. *Ed. Diocl.* 4.8, *pernae optimae petasonis*.

8. *in p*[: see note to line 11.

10. *ceruin[am*: used as a short form of *ceruina caro*, see *TLL* s.v., cf. *Ed. Diocl.* 4.44, *cerbinae*; see J.N. Adams, *BICS* 22 (1975), p.23. The fold in the tablet comes between this and the next line.

11. *in p*[: this reading ignores an apparent vertical stroke between *in* and *p*. Although the top of the first letter may be lost and the first part of *n* could well be *a* it does not seem possible to read a form of *far* or *farina*. We are confident that the apparent traces before *i* are not ink and that the line is indented like lines 1 and 8 and contains the same entry. In this line *p* is certain and in the other lines it is possible if not probable. In *Ed. Diocl.* 4 the meat is measured by weight, usually abbreviated *po(ndo)*; this is not normally preceded by *in* but *in po(ndo)* does occur in *Ed. Diocl.* 4.46–8, 7.24–8, perhaps cf. also Pliny, *NH* 33.158, *pretium in pondo libras denarii duo*. Other possibilities which have occurred to us are *in pretio* (*precio*), a regular expression in mediaeval accounts, and *in praetorio* or *in praetorium* (cf. perhaps *RMR* 82.7). In this line, just as the tablet breaks off, there may well be traces of a letter (or symbol), but they are too indecisive to help us solve the problem.

12. *ad cotidia*[*n*: a good, but not certain, reading. Further cleaning since the photograph was taken proves *o* certain; the foot of the first *i* has been fouled by the top of *c* from the line below. The apparent down-stroke after *d* is merely the grain of the wood. The word also occurs in No. 44.3 but that is probably a letter. Its implication in the context of No. 5 would be that the items under this heading were for daily use, whereas the earlier entries may fall into some other category (see introductory comments and note to line 11). This, of course, does not preclude the supposition that all the entries in this account may have been grouped under one (lost) date-heading, in contrast to the series of date-headings recorded in No. 4.

14. [s] ✕[: [s] . [], (*editio princeps*). We are now confident that *s* was followed by the *denarius* sign. The line was crossed through several times by the writer, presumably because he made a mistake in his calculation (cf. line 15).

15. The interpretation of *s* as *s(umma)* seems inescapable in the context. For the abbreviation cf. *RMR* 69.8 etc. We think it distinctly possible that this line (and therefore no doubt the deletion of the previous line) was the work of a second hand.

16. *braci*s: the writing commences further to the left than in the preceding three lines, almost directly under *ad* in line 12; what precedes it is almost certainly not ink. The writing is clear as far as *brac*; in the *editio princeps* we were uncertain whether to read *es* or *is* after this, but we now feel reasonably confident that the correct reading is *bracis*. Lewis and Short record a word *brace* (genitive *braces*) but seem to base this solely on the Pliny passage quoted below, where the word appears in its accusative form as *bracem*. We follow *TLL* and *OLD* where the nominative is considered to be *bracis* (doubtfully in *OLD*). In that case *bracis* in our text is likely to be genitive singular (we think accusative plural less likely). On this Celtic loan word see J.N. Adams, *BICS* 22 (1975), pp.22–3. The word suits the context very well. Pliny, *NH* 18.62 says of it: *Galliae quoque suum genus farris dedere quod illic bracem vocant*. *Corpus Gloss. Lat.*v.616.26 has: *braces sunt unde fit ceruisia* (cf. No. 4.12 note). It is therefore a Gallic name for a kind of cereal which could be used for malting (see N. Jaśny, *Wheats in Classical Antiquity* (*Johns Hopkins Studies in Historical and Political Science* 42, 1944), pp.134–5). A. Holder, *AS*, s.v. *braci-* adds a reference to *Ionae uita Columbani* c.21, ed. Sur. 21 nov., p.475: *centum dicens modia esse uini, ducentaque frumenti, sed et. bracis centum modia*, thus distinguishing *bracis* from *frumentum*.

18.]um[: before *m* we appear to have *u*, although *u* is not made quite like this elsewhere in this hand (*n* is not wholly impossible); before it the top of a tall letter, *c*, *e*, *f* or *s*. We cannot read *frum*[enti as there would be no room for *r*. In the *editio princeps* we suggested *sum*[ma (written in full as indicating the final total for the whole amount?) or *sum*[en. We still think both these are feasible alternatives, but the curve at the top of the first letter is more like *e* in *ceruin*[am (line 10) than *c*, *f* or *s* and it is possible that it was preceded by two or even three letters.

6

Inv. nos. 30 and 32
 Plate III, 1
 Unpublished

Layer 8
 9.0 × 1.8 cm

Three joining fragments containing part of an account written parallel to the broad edge of the leaf and along the grain of the wood (contrast Nos. 4 and 5). There is no indication here of the commodity in question, but the text contains a calculation of the amount required for a certain number of days. It is written in an upright, squarish cursive, notable principally for the occasional use of interpunct. The back of the tablet is blank.

DIPLOMATIC TRANSCRIPT

→]viik·ianuarias· insinguloꝛ dies
]..iiii· sunt dies·ii m xs

RECONSTRUCTED TEXT

→]vii K(alendas) · Ianuarias · in singulos dies
](sextarii) xiiii · sunt dies xii m(odii) x s(emis)

TRANSLATION

“December 26 (?). 14 *sextarii* per day. Total for 12 days, 10 1/2 modii . . .”.

1. Possibly *x]vii K(alendas)*; we cannot calculate the loss at the left, though the breadth of the tablet suggests that it is not likely to have been very extensive.

2. The calculation is as follows. $10\frac{1}{2} \text{ modii} = 168 \text{ sextarii}$. $12 \text{ days} \times 14 \text{ sextarii} = 168 \text{ sextarii}$. There is, however, an alternative which we think equally possible. The reading of the *sextarius* sign in line 2 and the numeral *x* following both this and the word *dies* is extremely precarious. If we were to read the number of days as seven, *vii*, this would require a rate of 24 *sextarii* per day and we should have to read at the beginning of the line [(*sextarii*)] *xxiiii* or possibly](*sextarii*) [*x*]*xiiii*. If the date in line 1 is complete, the reading as we have printed it in the text would be preferable since it would assume a smaller loss at the left; but of this we cannot be certain (see line 1, note). On the abbreviation *m* for *m(odius)* see No. 4.5 note. Here it is certainly not surmounted by a flat dash, but it is possible that the dark mark visible above it in the photograph should be read as *o*; for the abbreviation *m̄* see *ChLA* 436 and *P.Mich.*449.

7

Inv.no.50
 Plate I, 4
 Unpublished

Layer 8
 4.5 × 1.8 cm

Reference: Bowman-Thomas, *Historia* 24
 (1975), p.476

A fragment containing three lines of an account in *denarii*, headed by a date and mentioning an *adiutor*. The back of the tablet is blank. The phrase in line 3 suggests that we have a document comparable to No. 4, as does the date-heading (but note that No. 7 gives the day only and not the month). It is quite certain that No. 7 is not part of the same series of accounts as No. 4 since it is written along and not across the grain; but it is quite possible that it was written by the same hand as the major part of No. 4. The writing in lines 1 and 3 looks very like that in No. 4.10 ff., especially the idiosyncratic *r* in *priuatum* (on which see No. 4 introductory comments), but the

letter-forms in line 2 are not so similar; note in particular the form of *u* made in a rather angular shape with the first stroke being little more than a horizontal line.

TEXT

→ iiii Nonas
] adiutor ✕ .[
]per priuat[um

1. The digits all have a marked serif at the top right as in No. 4.23 etc. It is noticeable that the two examples of *n* in *nonas* are written differently.

2. Perhaps traces of one or two letters before *adiutor*; *u* is rather angular, made in two strokes. The digit following the *denarius* sign might be *i* or *s(emis)*.

3. *per priuat[um*; on this phrase see No. 4, introductory comments.

8

Inv.no.54
Plate I, 2
Unpublished

Layer 8
2.5 × 8.1 cm

Two joining fragments containing several lines of an account written across the grain of the wood and parallel to the short edge of the tablet. The back is blank. It is unfortunately impossible to be certain of the real nature of the text since it is so fragmentary (No. 19, even more fragmentary, might be similar). Most of the lines contain numbers; there is one possible *denarius* sign and several abbreviations, the meaning of which is not at all clear. Perhaps a comparison might be made with *RMR* 129 (= *ChLA* 272), which Marichal thought might be a record of deposits or expenses incurred on a mission. But, given that the *denarius* sign does not appear regularly before the numbers in our text, we remain totally uncertain of its nature.

TEXT

↓]x
]xxxii
]xx m̄ iii
] ✕ lxi
5]ī cccx
]fr̄xi
]...
]xii
]xyii
10]īī c̄ xvi[
]xiva.[
]iī d̄clxx.[

3. *m̄*: perhaps we should expand this as *m(ilites)*; this abbreviation is found in the *pridianum* published by R.W. Davies and J.D. Thomas, *JRS* lxxvii (1977), col.iii.15–16. The other possibility is *m(odii)*; elsewhere in the tablets *m* = *m(odius)* is usually marked as an abbreviation, but this is not always the case (see No. 4.14, 21).

4. Traces after *lxi* may or may not be ink.

5. There is a horizontal stroke above the first two letters which presumably indicates abbreviation.

10. Perhaps *iiī*, ligatured at the top as in No. 4.23 etc., or possibly *itī*. The following *c* appears to have interpuncts preceding and following (though the first interpunct might be a serif to the

last *i*); perhaps compare *RMR* 129.6 where *a · c ·* is expanded as *a(rmorum) c(ustos)*.

12. For the first two traces cf. line 5. The following *d* is difficult since it looks much more like *b*. To read *d* we have to ignore the apparent serif at the top left and treat it as part of the horizontal stroke over the previous two letters; the apparent tail at the bottom right of the *hasta* must be part of the following *c*. The number (670+) is very much larger than any of the others, but it can hardly be taken to indicate a strength report or something of the kind, since it is too large for a quingenary unit and too small for a milliary one.

9

Inv.no.37.ii
Plate I, 3
Unpublished

Layer 8
4.3 × 1.1 cm

This tiny fragment contains only a reference to a cohort with the number *vii*, *vii[i]* or *vii[ii]*. The other small fragment in this group (No. 77) could belong with this text since the hand is not dissimilar, but there is no more positive reason to connect it.

TEXT

→] . [.] [] .
coh vii]

2. There is no abbreviation mark after *coh*. The numeral has a long horizontal stroke above it and two parallel strokes running diagonally up to the right. A similar mark is found over *i* (numeral) in *ChLA* 455.1, probably as part of the phrase *co]h(ors) i*. It is tempting to connect this scrap with the evidence for a *cohors viii Batauorum* at Vindolanda (see No. 2 introductory comments and line 2 note). We have no means of knowing whether this is part of an official document or a letter; for references to cohorts in letters see No. 23.6 and No. 30.3, and for an occurrence in the address of a letter No. 23.13.

10

Inv.no.37.iii
Plate III, 5
Unpublished

Layer 8
5.9 × 1.7 cm

This small fragment containing part of one line and the tops of letters from a second is difficult to classify. One possibility is that it is the beginning of a letter written by Licinius Asper to an addressee whose name began with *G* (in which case one naturally thinks of Flavius Genialis, the recipient of Nos. 34-6). The main difficulty with this is that the pattern of the other letters in the collection would lead one to expect *suo salutem* or just *salutem* on a second line at the right, and the space between the two lines which survive on our fragment hardly seems to allow room for this. To allow room for *G[eniali]* with or without *suo* in line 1 we would have to assume that the address overran the central fold, which is possible. But the trace of the first letter in line 2 looks exactly like the initial *l* in line 1 and comes immediately underneath it. This leads us to suggest that we may have part of an alphabetical list of names.

Palaeographically the text is of some interest as the hand can be said to have some pretensions to style; note especially the form of *a*, with the second stroke starting a long way to the left and ending in a short third stroke parallel to the first (see above, p. 61).

TEXT

→ licinius asper g[
![,] [

1. *Licinius Asper*: the name does not appear elsewhere in the tablets (note, however, *aspr*[in No. 24.7). The final *s* of the *nomen* has the diagonal cross-stroke, whilst that in *Asper* has the short horizontal. If this is an address, the final letter on the line shows that it was not part of the archive of Cerialis or Crispinus. On the other hand it may be a notation or description (e.g. *galearius*, cf. *RMR* 9.4k) if this is a list. The Roman names (there is no sign of a *praenomen*) need not indicate a legionary (cf. *RMR* 64, *BGU* 423.22–3).

11

Inv.no.61

Plate III, 4

Unpublished

Reference: J.D. Thomas, *Scriptorium* 30
(1976), pp.41–2 and pl.66

Layer 8

3.4 × 4.1 cm

This scrap is of interest as being the only piece in the collection written in a capital script, albeit of a rather plain kind (on this see above, p. 67). It is somewhat surprising that this should be the only tablet from Vindolanda in a capital script, since its use in military papyri is not at all uncommon. Such a script is far more likely to appear in an official document than in a letter, and this is supported by the fact that the writing is across the grain. We suggest that it may have been the heading of a list of *optiones* or something similar.

TEXT

↓]TIONES

DESCRIPTA

12. Inv.no.192B

7.0 × 8.3 cm

Remains of 8 lines of a document written along the grain, much abraded. Line 2 appears to end with a numeral, line 3 with *ad loca* and line 6 with *optiones*. The lines appear to be complete at the right.

Layer 10

13. Inv.no.144.i and ii

4.2 × 2.3 cm

4.2 × 2.3 cm

Two fragments, probably from an official document, each with remains of two lines written along the grain. i. *mandata*[/ *pā* (traces)[. ii.]e..i *xxxx* / (traces).

Layer 10

Plate III, 2 and 3

14. Inv.no.8.i

1.6 × 6.7 cm

A fragment of an account written across the grain. Remains of 4 lines.]...[] /]po[]m[/]n *summ*[/]m ..[. For the *modius* abbreviation see No. 4.5 note. In line 3 perhaps *i]n summ[am*.

Layer 8

15. Inv.no.24 Layer 8
 1.7 × 7.2 cm
 Ends of two lines written across the grain. Probably an account.
16. Inv.no.52.ii and iii Layer 8
 3.1 × 0.8 cm
 Beginning of one line of a text which seems likely to be documentary: *xvi K(alendas) Mar[tias]*. There appear to be traces of writing on the other side (cf. No. 3).
17. Inv.no.91.iii Layer 8
 1.9 × 4.9 cm
 Traces of three lines written across the grain. Probably an account.
18. Inv.no.93.ii Layer 8
 1.1 × 1.5 cm
 Remains of two lines of an account written across the grain:], *lx*. [/]. *rti*.
19. Inv.no.174 Layer 8
 2.4 × 5.0 cm
 3.1 × 1.7 cm
 Two fragments of an account written across the grain (perhaps comparable with No. 8). The larger piece has remains of six lines in which only a few numbers can be read. The smaller has remains of three lines, the second of which has a clear *denarius* sign followed by a number (with illegible traces preceding and following).
20. Inv.no.179 Layer 8 or 10
 4.0 × 6.4 cm
 2.1 × 6.6 cm
 Two fragments which appear to be from the same leaf, each with traces of one line written across the grain. Probably an account.

B. LETTERS

1. The Archive of Flavius Cerialis

21

Inv.no.188
Plate III, 6: IV, 2
Unpublished

Layer 8
17.8 × 9.1 cm

This diptych, containing a letter written in two columns, is preserved complete. The tablet is extremely thin and should be compared for this and other features with No. 30 (see introductory comments there). The folding in this case is of particular significance because, when the tablet was found, the two halves of the diptych were still firmly joined together. There are two V-shaped notches in the left and right-hand edges (see above, p. 37) but no sign of any tie-holes. The writing on the inner faces is in two columns. The left-hand column is broader than the right (cf. Nos. 22, 30) and extends beyond the central fold (which was presumably made after the letter was written). The central area on both sides of the fold is defaced by offsets (cf. No. 39) which suggests that the writer folded the letter while the ink was still wet.

The letter is addressed to Cerialis by Nīger and Brocchus. The latter does not appear elsewhere in the Vindolanda tablets but it may be that Niger is to be identified with Oppius (?) Niger, who was perhaps the commander of the unit at Bremetennacum (Ribchester), see No. 30 introductory comments and line 6 note. In general, the main hand of No. 21 may be described as regular and elegant; the pen-strokes are fine and the letters carefully made. There is a tendency to enlarge the first letter of each line and to exaggerate ascenders and descenders. Perhaps the most noteworthy feature of the letter-forms is their variety: contrast the tall *l* in *salutem* (line 2) with the short form in *felicissimum* (line 4), long *i* in *precari* (line 8) with the short form prevalent elsewhere, and the marked difference in the size of *s* and the tail of *r*. There is no use of interpunct and word division is only occasionally marked. The writing slopes to the right and is very sparing in its use of ligature, which is scarcely found except in *us* (lines 3, 9, 11, contrast line 4). In format and in the general style of the writing this tablet closely resembles No. 30. Whether both are in the same hand and thus from the same Niger (though to different addressees) is further considered in the introduction to No. 30.

The letter contains an expression of the hopes of the writers for the success of something which Cerialis is about to do. We cannot be sure whether this relates to a specific enterprise (e.g. a military campaign) or is more general. But the final sentence of the main text, which suggests that Cerialis will soon meet the governor, perhaps slightly favours the first notion. There might well have been opportunities for military success in the period when the Romans were engaged in the withdrawal from southern Scotland.

DIPLOMATIC TRANSCRIPT

→ niger et brocchuꝣ ceriali
suo salutem
Optamusfrateritquot

conueniathoc
pro te precariettu
sis dignissimus con

5	acturus es felicis simumsiteritautem quometuotisnostris	10 (<i>m</i> ²)	sulari·n̄·utiquema turiusoccurres optamusfrater domine [...]bene a.er. <i>traces nore sse</i>
		<i>Back</i> →	]a]i]co]h

RECONSTRUCTED TEXT

	i
→	Niger et Brocchus Ceriali suo salutem. Optamus, frater, it quot acturus es felicis-
5	simum sit. erit autem quom et uotis nostris
	ii
	conueniat hoc pro te precari et tu sis dignissimus. con-
10	sulari n(ostro) utique ma- turius occurres.
	(<i>m</i> ²) optamus, frater domine, [te?] bene ualere <i>traces nore esse.</i>
Back	→ Ceriali]co]h

TRANSLATION

“Niger and Brocchus to their Cerialis, greeting. We hope, brother, that what you are about to do will be most successful. It will be so, indeed, since it is both in accord with our wishes to make this prayer on your behalf and you yourself are most worthy. You will assuredly meet our governor quite soon. (2nd hand) We hope, our lord and brother, that you are in good health . . . (*Back*) To . . . Cerialis . . . of cohort . . .”

1. *Niger*: he might be the same person as the writer of No. 30, Oppius (?) Niger (see No. 30 introductory comments and line 6 note); the tone and content of both letters suggest that he was of similar status to the addressees, both of whom held the post of *praefectus cohortis*.

Brocchus: the name appears only here in the Vindolanda tablets. It is a fairly well-attested *cognomen*, see Kajanto, *LC* p.238. Its origin is perhaps Italic rather than Celtic (see J.S. Conway, J. Whatmough, S.E. Johnson, *Pre-Italic Dialects of Italy* (1933), viiic, xic, xiiia, xxivc; D. Ellis Evans, *Gaulish Personal Names* (1967), p.159 n.5), though A. Holder, *AS* s.v. says it is part Celtic, part Roman.

Ceriali: the reading of the name is certain here despite the loss of the tops of letters at the end. We see no objection to the supposition that the same Niger wrote to both Cerialis and Crispinus (No. 30) at Vindolanda and that they were prefects of cohorts which garrisoned the fort in succession during the period A.D.95–105 (see above, p. 47).

2. *suo salutem*: this format, with both words on the second line and at the right-hand side, is unique in the Vindolanda letters.

3. *Optamus*: there appears to be a slanting ink-stroke above the *o* (*o* and *p* are noticeably

enlarged). We think this is probably unintentional. It has occurred to us that it might be an apex mark; but (a) there is no consistent use of this mark in the text (the only other possible example is over *tu* in line 8, see note), and (b) this is normally used only to mark long vowels: since its original purpose would have been to indicate quantity in cases where it was ambiguous, there would be no reason to place it over a short vowel lengthened by two following consonants.

it quot: the substitution of final *t* for *d* and vice versa is very common in vulgar Latin, see *P.Mich.*467.24 (=CPL 250), 468.2 (=CPL 251), 471.13 (=CPL 254) and cf. Adams, *VLLCT* pp.25–9.

5. *autem*: for its force here see *OLD* s.v.4.

6–7. *quom . . . conueniat*: for *quom* see above, p. 73. We have not been able to parallel the expression precisely. For this sense of *conuenio* followed by the infinitive see *TLL* s.v.III.B.lb (cols.834–5) and cf. Pliny *Ep.*2.6.6, *conuenit autem amori in te meo . . . sub exemplo praemonere quid debeas fugere*. For *uotis* we might compare No. 37.8–9, *inter praecipua uoti habeo* (see note *ad loc.* and above, p. 72); *P.Mich.*468.3–4 (=CPL 251), *ante omnia opto te bene [u]alere, que m[ihi ma]xime uota [su]nt* (for the Greek equivalent see *P.Mich.*476.3, *πρὸ μὲν πάντων εὐχομαί σε ὑγιαίνειν καὶ εὐτυχεῖν μοι, ὃ μοι εὐκταῖόν ἐστιν*); *CPL* 304.2, *opto deos ut bene ualeas que mea uota sunt*. *et* before *uotis* in our text is emphatic and is picked up by *et* in line 8, i.e. it will be successful both because we want it and because you are worthy of success.

8. *tu*: over *u* there seems to be a short diagonal stroke like an apex mark. Similar marks are sometimes found in Latin papyri over long vowels (e.g. *ChLA* 418, speech of Claudius, *CPL* 247, private letter, late first century B.C.), cf. P.J. Parsons, *JRS* lxxix (1979), p.134. We think it unlikely that the mark in line 3 can be an apex (see note) but we can at least explain a possible occurrence in the word *tu*. A single occurrence of the mark in a text might be thought unlikely, but it does occur once only in *P.Hibeh* 276.6 (=CPL 260).

9–11. *consulari n(ostro) . . . occures*: the only governor named in the tablets is Neratius Marcellus (see No. 37.14–15 and note); *consularis* appears without further identification in No. 30.5 and perhaps in No. 36. But given that these texts cannot be precisely placed within the period indicated by the archaeological context (i.e. the earlier part of the period A.D.95–105), it could easily be someone else.

n(ostro): it is certain that *n̄* was preceded and followed by interpunct. This does not appear elsewhere in this text; we are, however, certain that the marks visible on the photograph are ink. This abbreviation also occurs in No. 30.5, No. 34.3 and perhaps also in No. 36. It is found in papyri as early as A.D.103 (*ChLA* 215.25; when first editing this text in 1910 as *P.Oxy.*1022 Hunt remarked that it was unexpected, but it has turned up several times in papyri published subsequently cf. *ChLA* 270.6 note). Note that *nostris* in line 6 is not so abbreviated.

12. The second hand could be the same as that in No. 30 but there is not really enough clear writing to make a proper comparison.

optamus: it would be easier to read *optamus*, but such a mistake would be very unexpected; we have therefore decided to take the letter before *amus* as *t* rather than *p* and to suppose that *p* is represented by the slight traces at the right of *o*; *m* is ligatured to following *u* by raising the last stroke to the horizontal so that the letter looks more like *n* with a link stroke to *u*. Exactly the same thing has happened in the ligature *mi* in *domine* in line 13.

13. This line commences further out to the left, under the last letters of line 6. There is space between *domine* and *bene* which is more than enough to accommodate *te*.

ualere: a difficult reading. *u* is no more than a residual hook linked to *a* and only a small part of *l* and the final *e* is visible. In the context the only alternative which would seem possible is *ualeas* (for *opto* + subjunctive see lines 3–5), but we think the traces of the last letter suit *e* better than *s* and that the previous letter is more like *r* than *a*. We have considered the possibility that in lines 12 and 13 *optamus frater / bene ualeas* was written and that another line (which might have been Brocchus's contribution after Niger wrote the first greeting) was then added, beginning *domine* and continuing beneath *bene ualeas*. However, *ualere* seems a better reading, and it seems very unlikely that a second greeting could have commenced with the word *domine*.

14. *esse*: this is probable but not certain and we think *nore* before it inescapable. All this suggests to us is *in honore esse* but the ink has faded so badly that we cannot read it.

Back. *Ceri]ali*: the traces are meagre and the reading little better than a guess. There would be room for *praef(ecto)* either before *coh* or on a separate line between this and the name. As is normal, the address is written on the back of col.ii.

22

Inv.no.1

Layer 8

Plate IV, 1 and 3

17.5 × 8.0 cm

Unpublished

References: Bowman-Thomas, *VWT*, p.23
 Bowman-Thomas, *Historia*
 24 (1975), p.473
 Wright, *Proc.XIVth Int. Congress*
of Papyrologists, p.355
 Birley, *Vindolanda*, p.153
 (erroneously as 'No. 29')
 Cotton, *DLR*, pp.2, 48

Now broken into four fragments, this diptych is of coarser quality than most of the tablets, as well as being considerably thicker than the average. The wood is actually of uneven thickness throughout, and its condition has deteriorated through warping. The main hand is far from distinguished; it is a rather crabbed cursive, somewhat cruder than most other hands in the collection. This is rather surprising, since we are confident that the greeting in line 17 is added in a second hand, that is the hand of the sender himself, a certain Karus, who was probably a person of some standing (see note to line 1). One would therefore expect him to have employed a clerk capable of writing rather more elegantly (and to have had better 'stationery' at his disposal); this hand certainly compares unfavourably with the hand(s) of Nos. 21 and 30, probably also sent by officers. The main hand of No. 22 has some notable letter forms: *b* with a pronounced flourish to the *hasta* (especially in *bene*, line 16), very elongated *f* (line 15), *g* which is sometimes stunted (e.g. *digneris*, line 11), both short and long *i*, a pronounced hook at the start of *l* (see *obligaturus*, line 14), *n* with the first stroke descending well below the line (*nom[ine]*, line 12); *o* can be a mere blob of ink, whereas *p* can have a marked serif at the foot (*petit*, line 3). Several letters appear in more than one form. There is very occasional word or sense division, but hardly any use of ligature.

Although there is not much of the diptych missing; supplementation has presented some problems. The condition in which the tablet has survived and, in particular, the fact that there are many marks on the photograph which may or may not be ink, has posed serious problems in reading; we are not confident that we have found the correct solution to all such problems (particularly in line 8).

The letter is sent by a man whose name does not survive in full; his *cognomen* is Karus and it is at least a possibility that he can be identified with the auxiliary *praefectus* C.Iulius Karus, attested in Britain, perhaps in the reign of Trajan, by an inscription from Cyrene (see note to line 1). Cerialis is the addressee and the address on the back adds his rank, *praef(ectus)*. The format is the normal one for letters, with the text written in two columns and the address on the back of the right-hand portion of the diptych.

The content is of considerable interest, for this text adds to the small number of documentary examples of *litterae commendaticiae*. Literary examples of this genre are well-known in the correspondence of Cicero, Pliny and Fronto. Their importance in the military sphere was also considerable (cf. G.R. Watson, *ANRW* II.1, p.496, *RS*, pp.37 ff.), as is clear from *CPL* 251.38 ff. (= *P.Mich.*468): *hic a[ut]em sene aer[e ni]hil fiet neque epistulae commandaticiae nihil ualunt nesi si qui sibi aiutauerat* (see Adams, *VLLCT*, p.51). It is difficult to be certain what precise purpose the Vindolanda example served. Karus, we understand, recommends a certain Brigionus (?) to Cerialis, the *praefectus* at Vindolanda, and asks him to intercede on Brigionus's behalf with the *centurio regionarius* at *Luguualium* (Carlisle). If Brigionus has Roman citizenship and a *nomen* (cf. line 3 note), he might be a potential legionary recruit. If not, and his involvement with military

personnel makes it unlikely that this was a purely civil matter, then perhaps he was at least hoping to enlist in an auxiliary unit. But it is perhaps worth remembering that in *P.Oxy.32* (see below), in which a *beneficiarius* recommends a friend named Theon to a military tribune, there is no sign that Theon has, or is hoping to get, a military post.

The documentary examples of *litterae commendaticiae* in Latin which are known to us are the following: *P.Oxy.32* (=CPL 249=ChLA 267); *P.Ryl. 608* (=CPL 248=ChLA 245); *P.Berl. 11649* (=CPL 257=ChLA 424); *P.Hib.276* (=CPL 260); *P.Strasb.Lat.1* (=CPL 262); *P.Ryl. 623* (=CPL 263); ChLA 493. We might add that the fragmentary letters *P.Dura 63B* and ChLA 420 might also be *litterae commendaticiae*, and the same goes for Vindolanda tablets Nos. 54 and 55. C.H. Kim, *Form and Structure of The Greek Familiar Letter of Recommendation* (1972), is primarily concerned with Greek letters, but he does quote Latin parallels wherever appropriate; the texts of the 83 letters of recommendation which he reproduces include all the six Latin documentary examples known at the time he was writing, together with Polycarp, *Phil.14.1*. The Latin letters have been recently analysed much more fully by Cotton, *DLR* who takes account of Vindolanda tablet No. 22 (pp.2, 48).

For comparison with the Vindolanda example, it is perhaps worth quoting from those examples which come from the earlier imperial period and exhibit some striking similarities of phraseology:

P.Ryl.608.3 ff. (=CPL 248=ChLA 245, cf. J.R. Rea, *CE* 43 (1968), pp.373–4).

[...]onem domini nostri imper[a]tores seruum hominem mih[i] domesticum et carum domine commendatum hab[eas]. est enim dignissimus et processu et fauore tuo cui quidquid at dignitatem eius pert[i]nens praestiteris non dissimulo mihi gratissimum futurum.

P.Oxy.32.4 ff. (=CPL 249=ChLA 267).

Iam tibi et pristinae commendaueram Theonem amicum meum et mod[o] quoque peto domine ut eum ante oculos habeas tanquam me. est enim tales homo ut ametur a te. reliquit enim su[o]s [e]t rem suam et actum et me secutus est. et per omnia me se[c]urum fecit. et ideo peto a te ut habeat intr[us]um at te et omnia tibi referere potest.

P.Berl.11469.3 ff. (=CPL 257=ChLA 424).

Apri duplicari Carum duplicarium hominem probum commendo tibi qui si quid egerit auxili tui rogo in meum honorem adiuues eum saluo pudore tuo.

P.Hib.276.3 ff. (=CPL 260).

Et praese(n)s te domine frater rogaueram coram Ammonium orthographum leg() n(ostr) amicum n(ostrum) karissimum . . .

It is noteworthy, however, that the Vindolanda letter is strangely brief and reticent about the virtues of the person being recommended. It is also very curious that he is not identified further; normally we should expect to find it stated that he is the writer's friend, son, slave or whatever (for identification formulae see Kim, *op.cit.*, pp.37–53, esp.48–53).

DIPLOMATIC TRANSCRIPT

→]us karu .[.] []]. (uacat) . []]brigionus peti a . .]neuteumtibico . 5 ...daretrogo ergodo ...quodate petieri.]...s isubscribere ann...ques ri regi onariolugualio ro 10 go uteum commen] igneri . . []] quenom [] debetorem [] obligaturus . [] 15 tefelicissim [] bene [] (uacat) (m ²) uale · frater
	Back →] riali praef	

RECONSTRUCTED TEXT

i

→ []ius Karus C[e]r[ia]li
 [su]o s[alutem].
 [...] Brigionus petit a me
 [domi]ne ut eum tibi com-
 5 menda[re]t. rogo ergo do-
 mine si quod a te petierit
 [ut u]el[is] ei subscribere.
 Anno Equestri (centurioni) regi-
 onario Luguualio ro-
 10 go ut eum commen-

ii

[ca.4] digneris [...]
 [...] que nom[in]e
 debetorem m[e] tibi
 obligaturus. op[er]e
 15 te felicissim[um]
 bene ualere.
 (uacat)
 (m²) uale, frater.

Back → C[er]iali
 praef(ecto)

TRANSLATION

“. . . ius Karus to his Cerialis, greetings. . . . Brigionus has requested me, my lord, to recommend him to you. I therefore ask, my lord that, if he has made any request of you, you consent to give him your approval. I ask that you think fit to recommend him to Annius Equester, centurion in charge of the region, at Luguualium; by doing which you will place me in debt to you both in his name and my own. I hope that you are enjoying the best of fortune and are in good health. (2nd hand) Farewell, brother. (Back) To Cerialis, prefect.”

1. Our readings and restorations proceed on the assumption that nothing is lost before line 1. This is not entirely certain. As is clear from the plate, there *might* be space for a preceding line even if there is nothing missing at the corresponding point in the second column, before line 11; there would certainly be space if a line has been lost at the top of the second column (see note to line 11). The only thing which can have occurred in a preceding line is the name of the addressee; it is not unknown for writers to put the name of the addressee before their own name (e.g. *RMR*, 89.6–8), but there is no example of this in the Vindolanda letters. If this were the case, the traces after the name would presumably represent Karus’s title (they would, for example, permit the reading *pr[ae]f(ectus)*). However, we think it more likely that the writer left a space at the top of his letter, and that the first line preserved is in fact the first line of the letter. If so, we know (from the address on the back) that what followed Karus must have been *Ceriali suo salutem*; but it is not easy to fit this reading to the traces. After the name *Karus*, the bottoms of three letters can be seen, of which the third, appreciably lower than the other two, fits well enough for *s* of *salutem* in a second line (see note to line 2). Before it we have what can hardly be anything but the tail of *r*, and this is preceded by an uncertain trace. This trace does not suit *c* (or *e*) as made elsewhere in this text, and barely leaves room for a letter between it and *r*; we have supposed, in reading C[e]r[ia]li, that the initial *c* was made larger than other examples of *c* in this text and so descended a little below the level of the rest of the line.

[...]ius Karus: the identity of the writer poses a tantalising question. The *nomen* preceding *Karus*

must have been a short one and its loss is most unfortunate. It is tempting to propose the restoration of [Iul]ius and to consider the possibility of identifying our writer with the honorand of a well-known inscription from Cyrene (AE 1951.88):

- C.Iulio C.f. Vo[l.]
 Karo ex prouincia Narbo-
 nensi, trib. mil. leg. III Cy[r.],
 praef. coh. II Astyrum equ.,
 5 donato bello Britannico [or.]
 murali corona uallari cor.
 aurea hasta pura
 centyrones et
 milites leg. III Cyr. et leg.
 10 [X]XII missi in prouinciam
 [C]yrenensem dilectus causa.

No decisive support for the identification may be gained from the spelling of the *cognomen* as *Karus*; this is very common indeed and, in fact, the use of *k* before *a* is technically correct (see Adams, *VLLCT*, p.32). The rank of the writer is a more substantive point. This is not actually mentioned in the text; but, bearing in mind that Cerialis, the addressee, was the *praefectus* of *cohors viii Batauorum* (see No. 23.12–4), it is entirely appropriate to the tone and content of the letter that the writer should be a person of equal or similar rank, which would be the case if he were C.Iulius Karus, *praefectus* of *cohors ii Asturum*; the closing greeting, *uale frater*, suggests, at any rate, that the writer was not of inferior rank. However, the problems involved in dating the career of C.Iulius Karus, and our inability to assign a precise date to the Vindolanda letter, prevent us from suggesting a firm identification. C.Iulius Karus was decorated in a British war whilst holding the post of *praefectus* of *cohors ii Asturum*. Tenure of this post seems secure despite the complications introduced by the attestation of C.Iulius Carus as *praefectus* of *cohors vi Asturum* (H. Devijver, *Studia Hellenistica* 22 (1975), No. 60 and *PME* No. 75). Are they different people, or did the same man command two different cohorts of Asturians (cf. Birley, *RBRA*, pp.137 ff., Domaszewski-Dobson, *RRH*², p.119 for double commands), or is it simply a misreading? The date of the *bellum Britannicum* is not attested, but E. Birley argued for a war some time in the reign of Trajan (*RBRA*, pp.23–4) and *cohors ii Asturum* is attested in Britain in a diploma of 105 (*CIL* 16.51). If C.Iulius Karus won his decorations for action which took place between *ca.* 103 and 112, this would fit very well with the approximate date which we can assign to the Vindolanda letter (*ca.* A.D.95–105). It has recently been argued, however, that the *bellum Britannicum* should predate 100. Two milestones from Cyrene (AE 1951.210, 1957. 233) record road-construction in A.D.100 *per tirones lectos ex prouincia Cyrenensi*, and it is argued that this is likely to have been the occasion of Iulius Karus's recruiting mission (S.S. Frere, *Britannia, A History of Roman Britain* (1967), p.124; M. Jarrett, J.C. Mann, *BJ* 170 (1970), p.181), which came after his valorous action in Britain. R.W. Davies suggested that Iulius Karus's unusual decorations make sense in the context of loyalty to Domitian at the time of the treachery of the governor of Britain Sallustius Lucullus, at some time between 86 and 96 (*Acta Classica* 19 (1976), pp.115–21). It is obvious that there can be no certainty. As regards the possibility of the writer of No. 22 being the decorated C.Iulius Karus, it seems fair to say that a war in the middle or late 90s (Jarrett-Mann, *loc.cit*) still permits the identification. Karus could have written this letter *ca.* A.D.97 and there would be no real difficulty in supposing that it had been retained by Cerialis and then discarded *ca.* 100; it might further be noted that the archaeological context, layer 8, suggests the earlier part of the period 95–105.

2. *su]o*: it seems clear that there could not have been room for this word at the end of line 1 unless it projected appreciably further to the right than the other lines in this column. It must be said that the mark which we have interpreted as *o* need not be ink, but the size of the gap between lines 1 and 3 makes it likely that there was some writing at this point. The placing of *suo* in line 2 is paralleled in No. 21; the placement at the beginning of the line, with *salutem* at the end, is paralleled in *P.Ryl.* 608.2 (=CPL 248 =ChLA 245).

§[*alutem*: on this trace see note to line 1. The word may have been abbreviated to *sal*; this is, of

course, very common, though it does not occur elsewhere in the Vindolanda letters.

3. *Brigionus*: this must be a Latinised version of a non-Roman name. It seems possible that it will have been preceded by a *nomen* (perhaps not necessarily implying Roman citizenship since there are examples of non-citizen auxiliary soldiers using the *tria nomina*), but it must have been very short (or abbreviated). Alternatively, we may have only a single name, ending *-brigionus* (note that *-briga* often features as the termination of a compound geographical name, see e.g. Rivet-Smith, *PNRB*, p.278). The name itself may be Gallic in origin. As parallels we can cite *Brigio* (*CIL* 13. 7067, Mainz), *Bricio* (A. Holder, *AS*, s.v.), *Brico*, *Briccius*, *Brigio(s)* (J. Whatmough, *The Dialects of Ancient Gaul* (1970), pp.204, 374), and *P.Aelius Brigo* (*CIL* 6.31149 c.7). It may be connected etymologically with the common element *brig-*, meaning 'hill', on which see D. Ellis Evans, *Gaulish Personal Names* (1967), pp.314–6; note also that there is a place in Britain called *Briga*, between Sorviodunum and Venta Belgarum (see Rivet-Smith, *PNRB*, pp.277–8 and cf. No. 4.44–5 note).

petit: we take it that this is a contracted form of *petiit* (see *OLD* s.v). The final *t* looks very unclear on the plate, but we cannot imagine what else can have been intended, and it is perhaps a little clearer on an earlier photograph. For the expression see *P.Cair.Zen.* 59046.4 ff., ἡξίωσεν ἡμᾶς Μένανδρος ὁ παρ' Ἡρακλείδου γράψαι σοι . . . καλῶς ἄν οὖν ποιήσαις δούς αὐτῶι σαυτὸν ευκαίρως and cf. *P.Col.Zen.*41, *PSI* 520 (all third century B.C.).

a me: as alternatives for the end of this line and the beginning of the next we have considered *do/[mine a] me* and *do/[mi]ne*, but we are confident that the reading we have adopted is preferable to either of these; in particular the traces which survive on the right-hand piece and which belong to line 3 suit *e* much better than *o*.

4. *eum*: strictly speaking the reflexive *se* is required here but the use of *is* in such subordinate clauses is not uncommon (e.g. Caesar, *BG* 1.5).

4–5. *commendaret*: although the last letter is unclear this is what seems to have been written. The writer must, of course, have meant *commendarem*. Just possibly he first wrote *commendaret* and then attempted to correct the final *t* to *m*, writing through *t* and over the following *r*. The dotted letters at the beginning of lines 5 and 6 are not to be seen on the plate; they were on a small piece of the tablet which broke off during the cleaning process.

6. *si quod*: since *si* is almost certain, *si* is inevitable. For the use of *quod* here see above, p. 73. The final *t* of *petierit* is reasonably secure in an earlier photograph. Greek letters often have a comparable clause, cf. C.H. Kim, *Form and Structure of the Greek Familiar Letter of Recommendation* (1972), pp.78–81; for example *P.Mert.*62.7–8 has ὑπὲρ ὧν ἔάν σοι προσέλθῃ.

7. [*ut u*]elis: we are fairly confident of *e* and *s* and the traces between will suit *li*; *uelis* makes good sense but we are not at all certain that there is room for *ut* at the beginning of the line. [*u*]elis, without *ut*, is grammatically acceptable, but this writer uses *ut* with *rogo* in line 10. It may be, however that the warping at the left has given a misleading impression of the space available. We think it unlikely that *ut* can have come at the end of the previous line; although there are dark marks on the right-hand piece opposite the end of *petierit*, which might be ink, this would make the line project much further to the right than the lines preceding or following.

subscribere: for this sense cf. Pliny, *Ep.*10.95, *tuo tamen desiderio subscripsi et dedisse me ius trium liberorum Suetonio Tranquillo . . . referrī in commentarios meos iussi*; Val. Max. 8.13.ext.6, *Hellanicus uero ait quosdam . . . ducenos explere annos, eique subscribit Damastes*.

8–9. *Annio Equestri*: the reading of the whole of line 8 and the general construction at this point are far from certain. We have little doubt that the *nomen* *Annio* began the line (the first three letters are fairly certain, the last two suit the traces), and we therefore expect a *cognomen* to follow. After *ri*, which is clear, there is a space and it seems logical to suppose that the *cognomen* ended here, the whole name being in the dative. Of the preceding letters only *q* and *s* are certain, though *ue* suits well enough for what can be seen between these letters; between *s* and *ri* the reading is wholly uncertain (one or two letters?) and before *q* what we have transcribed as *e* is the merest trace which might not be ink at all. There appear to be two alternatives: *Annio Equestri* (for the *cognomen* see Kajanto, *LC*, p.313) or *Annioque* followed by a *cognomen* *S. ri* of which the third letter is *c*, *p* or *t* (we do not know of any such *cognomen*). In either case it would follow that *subscribere* in the previous line is the end of a sentence or a clause, and that line 8 begins a request,

introduced by *rogo* in lines 9–10, for a recommendation to Annius. Our preference for the reading *Equestri*, a *cognomen* which is not very common, raises the question whether this is the same man as the centurion of *cohors viii Bataurorum*, also called Equester, in No. 23.5 (see note); the identification seems possible, but we would have to suppose that the auxiliary centurion received promotion after No. 23 was written (see following note).

(*centurioni*) *regionario*: the reading of the centurial sign, which can best be described as sickle-shaped, is not very easy; but given that we are fairly certain of the word following, it can hardly be interpreted in any other way. For the following letter, *r* suits the traces best. The other possibility would be *l* but this involves disregard of a horizontal stroke and a descender which runs into *o* of *Luguualio* in the line below. This would appear to be the earliest attestation of the military title *centurio regionarius*. Other references from Britain are: *RIB* 152 (Bath), 583 and 587 (both Ribchester, third century). Of these only the first has the simple title (*centurio*) *regionarius*; the others have a *centurio legionarius* with the additional title *praep(ositus) n(umeri) et regionis* (perhaps not beyond doubt in *RIB* 583). *RIB* 152 cannot be dated precisely; it belongs to the reign of a single Emperor and ought probably to be assigned to the second century. All three inscriptions are religious dedications which give no clue to the nature of the post. They are discussed by I.A. Richmond, *JRS* xxxv (1945), pp. 15–29. *Regio* is presumably a geographical area and might include a number of settlements or communities. It is interesting to find this type of command attested at Carlisle during a period when its military importance will have been great; we would most naturally assume that the centurion was from *legio IX Hispana* which was at York until at least 107–8 (*RIB* 665 and cf. F.J. Haverfield, *Trans. Cumb. and Westm. Antiq. and Arch. Soc.* 12 (1893), pp. 280–2 for undated tile stamps showing soldiers of this legion at Carlisle). Perhaps he was in charge of operations in part of the western sector of the Stanegate during the period of the withdrawal from southern Scotland (cf. Birley, *RBRA*, p. 28). There are other references to *regionarii* in *CIL* 13.2958 (Agedincum), *AE* 1944.103 cf. 1950.105 (Brigetio), *AE* 1953.129 (Noricum), *IGR* 3.301 (Pisidian Antioch). All are later than the Vindolanda reference and none gives any clear indication of the duties involved. Policing functions are perhaps suggested by two second-century references from Egypt to τῷ ἐπὶ τῶν τόπων ἑκατοντάρχῳ (*BGU* 522 and *P.Lond.* 342, vol. ii, p. 173) but these may be applicable to more civilised regions (Haverfield *op.cit.*, p. 25).

Luguualio: on the name and its etymology see K. Jackson, *JRS* xxxviii (1948), p. 57, *Britannia* i (1970), p. 76; Rivet-Smith, *PNRB*, p. 402. It is derived from a personal name LUGUUALOS, 'he whose strength is like (the God) Lugus' or 'strong in (the God) Lugus' and the correct spelling is that used here.

9–11. For a similar chain of recommendation see Fronto, *ad M. Caes.* 5.36 (51) = Van den Hout p. 81.

9–10. *rogo*: there appear to be traces of ink after *ro* in line 9 and these marks could be read as *go*. But if this were correct, the only way to take *go* at the beginning of the line would be as the end of *ergo* (cf. line 5). However, it is difficult to see where *er* can have stood; if it came in line 9 it would make the line project further to the right than the other lines in the column, and if it came at the beginning of line 10 it would make this line commence further to the left than the others. It would also force us to take *rogo* as the beginning of a new sentence, and this makes it much more difficult to construe what precedes and what follows.

On the whole we think it probable that no line is lost between lines 10 and 11 (see note to line 1). If so, we can hardly restore anything but *commen[dare]* before *digneris* and take *Anniō . . . digneris* as a single clause with the meaning indicated in the translation. From the point of view of Latinity there is no difficulty in supposing a line lost, and supplying something like *commen[datum habeas et fa/uore] digneris*. If we read *rogo ergo* (see above), it would seem essential to introduce some such clause; the phrase *commendatum habeas* is very common and corresponds to Kim's third type of request-formula (*Form and Structure of the Greek Familiar Letter of Recommendation* (1972), pp. 68–71 with examples).

11. As is common, the right-hand column is considerably narrower than the left (cf. Nos. 21, 30). After *digneris*, *e[ius* or *i[llius* are equally possible alternatives; we do not think there is enough room before or after it for *commen-/[datum] digneris h[abere]*.

12. We suggest restoring *me]oque* at the beginning of this line but the *o* is very uncertain. We have considered *eu]sque* (which would, of course, necessitate restoring something else in the previous line); but, while the trace itself would suit the bottom of *s*, we really ought to be able to see something of the top.

nom[ine: cf. Symmachus, *Ep.* 2.84, *hoc tantum subicere contentus me quoque tibi eius nomine, si quid gratiae ceperit, obligandum*; Quintilian, *decl.* 253, p. 36, 2, *ut meo nomine sum uobis, Quirites, obligatus*. See also the phrase *εἰς τὴν ἐμὴν καταλογὴν* in Greek *litterae commendaticiae* of the early Roman period (*P. Mert.* 62.8–9, *P. Oxy.* 787). This section of the letter is what Kim, *Form and Structure of the Greek Familiar Letter of Recommendation* (1972), pp. 89–97 calls the ‘appreciation’.

13. *debitorem*: for the vowel-change see Väänänen, *LVIP*³, pp. 21–2; note that *TLL* quotes one gloss in the form *δεβήτορα*. For the whole sentiment in lines 12–4 compare Pliny, *Ep.* 3.2, *habebis me, habebis ipsum gratissimum debitorem* and *Ep.* 4.4, *obligabis me, obligabis Caluisium nostrum, non minus idoneum debitorem quam nos putas*.

14–6. For this very common closing formula compare, e.g. *RMR* 89.39. The traces at the right in line 14 are exiguous and we read *op[to* only because we believe the word is inescapable in this formula. If the construction were slightly different, palaeographically *obligaturus es [opto* etc. would be acceptable. The end of line 15 was originally preserved but was lost in the cleaning process. The reading of *uālere* seems inescapable, though it is clear that the writer began to write something else and then corrected it; an apparent *f* after *bene* suggests that he perhaps began to repeat *felicissimum*.

17. There is probably a medial stop after *uale*, but the mark may not be ink.

18–9. The address is written, as is normal, on the back of the right-hand section. There is no doubt about the reading of the name and title.

23

Inv.no.177

Plate V, 1 and 2

Unpublished

Layer 8

8.6 × 7.6 cm

The right-hand portion of a diptych, now in six pieces. This is certainly complete at the top and right (see further the note to line 15) and contains on the front ten lines of the right-hand column of a letter, and on the back an address to Flavius Cerialis. It is particularly important as being the only text which gives Cerialis his full title and allows us to identify him with confidence as *praefectus* of *cohors viii Batauorum*. The text on the front has been much abraded and the right-hand parts of the lower lines have virtually completely disappeared. The subject of the letter appears to be the despatch of letters by the hand of a centurion (see line 4 note).

We are reasonably confident that both sides are in the same hand, a competent, right-sloping cursive similar to that in No. 38. In fact, although the name and title of Cerialis in lines 12–3 are written in the elongated address script, lines 14 and 15 are written in the normal cursive and are certainly the work of the hand which wrote the letter on the front. Particularly noteworthy are the *st* ligature in *epistu* (line 3) and *equestre* (line 5), and the *n* in one movement with ligature to preceding *e* (and following *t*?) in *centurione* (line 5).

DIPLOMATIC TRANSCRIPT

→

]o

[ca.9], e tu e com
 m[.....][.]e epistu
 la[.]s quasa c. a.
 5 ab equestre centurione
 coh. iiii b. or ... [.] i
 sia tepr k ma nos
 te e ... de e [ca.6]
 traces of 3 more lines

Back → 12 flauio çeriali
 praef coh viii bat
 aut alfidio date
 aut

RECONSTRUCTED TEXT

→ i
 Ceriali su]ø
 ii
 ç[ca.9] e tu e çom
 m[.....].[.]e]t epistu-
 laş [..] s quas açcep..a.
 5 ab Equestre centurione
 coh(ortis) viii Batauorum [..]i
 si a te pr(idie) K(alendas) Ma nos
 te e .ede e...[ca.6]..us
traces of 3 more lines

Back → 12 Flauio Çeriali
 praef(ecto) coh(ortis) viii Bat(auorum)
 aut Alfidio date
 15 aut

TRANSLATION

“ . . . and the letters which I had received from Equester, centurion of the 8th cohort of Batavians, I forwarded on April 30 (?) . . . (Back) To Flavius Cerialis, prefect of the 8th cohort of Batavians. Deliver either to Alfidius or . . . ”

1. The ø at the very edge of the leaf must belong to the left-hand column which, in these letters, often overruns the central fold. The alignment suggests that it must belong to the first line of the letter and must therefore belong to *su]ø*.

2. The trace between *e* and *t* is perhaps *c*, but the mark may possibly not be ink. Both examples of *e* in this line are apparently made in two semicircular strokes (cf. FIG. 11.12, p.58); the letter is probably not made in this way elsewhere in this text or in any other of the texts.

çom: this may be the beginning of a reference to *commendatio* in view of the fact that line 3 begins with *m* (e.g. *tu ei çom/m[endauis]*).

3. The trace in the middle of the line is a descender, hooked to the left. We might possibly have *a[r]e]t* before *epistu* but the spacing precludes a restoration of *çom/m[end]a[r]e]t*.

4. At the end of the line we propose the reading *açceperam*, despite the fact that the reading of *pe* is difficult. The tail of *r* following can be seen descending through the line below. All that remains of the last letter is a *hasta*; part of the edge of the leaf has broken off here and there would be room for *m*. The trace would suit *s* also, but *açceperas* does not make sense since the writer is hardly likely to be referring to letters received by the addressee, especially if we are right in supposing that he goes on to refer to the forwarding of the letters.

5. *Equestre* is not a difficult reading except for the penultimate letter, which looks more like *t* than *r*. In view of what follows it must be a proper name and it is striking that the centurion named in No. 22.8 also has the same *cognomen*, not an exceedingly common one. We hesitate to draw the conclusion that these are one and the same man because the person in No. 23 is centurion of the auxiliary *cohors viii Batauorum* (see note to line 6) whereas the man in No. 22 is a *centurio regionarius* (see notes to lines 8–9) and must therefore be a legionary. It is possible,

however, that the letters were written at different times and that the man was promoted (for an example of promotion from auxiliary to legionary centurion see P. Holder, *AAT*, pp.101, 384). On the form of the ablative see above, p. 74.

6. *coh(ortis) viii Batavorum*: we have settled on this reading only after some hesitation. First, because it seems odd that in a letter to Cerialis the writer should name the centurion's unit when Cerialis was in command of it (see note to line 13) and had presumably sent him. Second, because there is some doubt about the reading of the numeral; what we can see could equally well be read as *iii* preceded and followed by a medial point (as in No. 30.4). But in view of the fact that we are reasonably confident about the name (*b...orum* is certain and the other traces suit the reading well enough), we consider it easier to accept the apparently superfluous naming of the unit than to create a third Batavian cohort (unattested elsewhere except for the remark in Tacitus *Agr.*36, see No. 2 introductory comments) and to explain Cerialis's connection with it. As is normal, there is no abbreviation mark after *coh*. The stroke over the numeral is saucer-shaped.

For the letters at the end, we propose the reading *d[i]mi* completed by *si* at the beginning of the next line. For the use of *dimitto* in this sense see e.g. Caesar, *BC* 3.22.1.

7. *si*: this is written to the left of the beginnings of the other lines, which suggests that it was omitted in the first instance and inserted later.

a, te pr(idie) K(alendas): interpretation and reading of the letters preceding *pr(idie)* is difficult. The letter after *a* most resembles *u* but this suggests nothing. We have considered *ad te* but this seems impossible because there is no sign of a *hasta* for *d*; *ante* is not much easier palaeographically but seems slightly preferable, although it is difficult to explain the phrase. Two possibilities occur to us: either it means 'I forwarded the letters at some point in time before April 30' or it is simply a clumsy way of saying *pridie Kal.*, that is *on* the day before the Kalends; there is perhaps some slight support for the latter in Pliny, *NH* 8.177 and 11.41 where he uses the expression *a.d. pridie*, which is taken to mean the same as *pridie* (but note that *diem* does not appear in the Vindolanda text).

ma.....: *maias*, with a short word following (e.g. *et*) seems to us to suit the traces best but *martias* cannot be excluded.

8. This line and the three following are very badly abraded at the right, and we can only really guess at plausible readings for the left-hand side. Here we might have *te excedere*, perhaps part of a new sentence beginning with *nos* or *et nos* in the previous line.

9. This line seems to begin with *do* and to end with *n̄*, i.e. some case of *n(oster)*, preceded either by a name or by a title (cf. No. 30.5, and No. 34.3).

11. Perhaps this line begins *uitali*, a name, or *uitabi*].

12. The last three letters of *Ceriali* are preserved in full; only the feet of the preceding letters survive, but the reading is not in doubt.

13. *pr* is certain; thereafter the traces, especially of *e*, are very faint but suit the reading, which is certain.

viii: the last digit in the numeral is a very faint trace, but something was clearly written here so that the reading given is, we believe, the only one possible.

Bat(avorum): the references in No. 2 (see introductory comments and note to line 2) and in this text are decisive in favour of the cohort being the 8th Batavian. Here the name seems to have been abbreviated without any mark (whereas in line 6 it is written in full). The normal practice in these letters was to write the address on the back of the right-hand section of the diptych after folding it; thus, to write *batauorum* in full here the writer would have had to turn over the folded diptych and continue on the back of the left-hand section.

14. We can only guess that this was an instruction to deliver the letter to an intermediary named Alfidius or to someone else (see note to line 15).

15. *aut* stands in the middle of the line on its own. There is no sign of writing below this, but it is possible that something may be lost from the bottom of the tablet (note that line 11 does not seem to contain a closing greeting). If the diptych was comparable in height with No. 21, for example, as much as 1.5 cm might be lost.

24

Inv.no.9
Plate V, 3
Unpublished

Layer 8
6.8 × 7.5 cm

Four joining fragments of a diptych containing parts of two columns of a letter addressed to Cerialis. The format is the normal one for a letter, and we have only the central portion consisting of the ends of the lines in the left-hand column and the beginnings of the lines in the right. The extent of the loss can be gauged from the fact that the whole of the writer's name is missing at the left. There is no real clue at all to the content of the letter. There are possible traces of an address on the back of the right-hand portion.

TEXT

→] i
 Ceriali suo
 salutem.
]ntiam agere
]culus ne cuiquam
5]d mōram fecit
].r.s...rd[

 ii
 aspr[
 sebam[
 cum h[
10 tuu[
 as r[
 sub[

1. There is a space of 1.5 cm before *Ceriali* but no trace of the writer's name.
3. The trace before *n* would suit *e* and many possible restorations could be envisaged, e.g. the phrase *paenitentiam agere*.
5. Perhaps restore *hau]d mōram fecit*.
7. Cf. perhaps the name Licinius Asper in No. 10.
8. Presumably part of a verb, e.g. *cen-]/sebam[us*.
12. Below this line the tablet appears to be blank, which suggests that this was the end of the letter.

25

Inv.no.4
Plate V, 4 and 5
Unpublished

Layer 8
10.4 × 2.1 cm

This tablet contains the end of a letter addressed to Cerialis. There is an apparent notch in the left-hand edge and the corners seem to be cut off. We think these features are accidental since, if they were not, we should have to regard the letter as being written either on a half leaf or on the left-hand side of a diptych (the right-hand side being blank); in the former case the notch for a binding cord would be otiose, in the latter we would expect the address to be on the back of the missing half. The hand which wrote line 1 is an interesting and distinctive one, with no close parallel elsewhere in the tablets. It is upright, rather bold and gives a somewhat stiff impression. Unfortunately only one line survives and of this we cannot always be confident of the reading, especially as some of the letters tend to be undifferentiated. In the second hand, which has added

the greeting in lines 2-3, the forms of *e* at the end of each line (see FIG. 11.11, p.58) and the *n* preceding it in line 2 (see FIG. 11.23) are noteworthy.

TEXT

→ c...ioinmaturaadmēta...
(m²) uale.....ne
frater karissime

Back → flaūio ceriali

1. *inmatura* or *in matura* would seem to be correct; for *immaturus* followed by *ad* see *OLD* s.v.lb. Before it the reading is very uncertain: the first stroke is a curve, perhaps part of a large *c*, then possibly *i* or *e* with what looks like *p* following, though *t* is possible; *io* looks almost certain. Of the various possibilities a noun ending *-citio*, with which *inmatura* could agree, is perhaps the most promising, though not the easiest reading palaeographically. After *ad* the reading appears to be *mēta*, though *e* is made quite unlike any other *e* in the tablets, with perhaps two letters before a final *a*. It would be just possible to read *metalla*, which would presumably be a reference to British mines or minerals.

2. We are confident of *uale*, so this line must begin a closing greeting. Since *ne* is certain at the end, we are driven by common sense and the parallels (No. 21.12-3, No. 30.9-10) to read *domine*, though it must be admitted that this is not an easy reading. If it is correct, we presumably have *ualeas* before it, even though what can be seen after *ualea* does not really resemble *s*.

3. We are confident of *fra*, so *frater* must be correct even though *r* is difficult. The traces of the next letter suit *k* (but not *c*) and *r* is certain, so we are confident that *karissime* was intended (final *e* is certain). However, the traces between *kar* and *e* are perhaps better represented by the reading *karisime* (for the spelling cf. No. 45); if we read *ss* we have to suppose that *me* is ligatured like *mi* in *domine* in No. 21.13.

Back. Of *ceriali* only the last three letters are certain and we have naturally considered, in view of Nos. 34-6, whether the reading *geniali* is possible. There is a trace at the foot of the first letter which might suit *g* better than *c*, but we think the third letter is much more easily read as *r*. Beneath this, there may be traces of the tops of letters from another line (presumably Cerialis's title, cf. No. 23.13).

26

Inv.no.178
Plate VI, 2 and 3
Unpublished

Layer 8
3.7 × 1.1 cm

This tiny scrap has writing on both sides, though that on one side is upside down in relation to that on the other. There are two reasons for thinking that this may be a draft of a letter from Cerialis: the remains of the name in line 1 point to the fact that Cerialis's name was probably in the nominative; on neither side is the writing in the address script. We have not enough of the text to decide whether the same hand wrote both sides. But we should note the contrast with the draft letter No. 37, where the name of the sender is not put at the beginning.

TEXT

Front →]uius ceriali[
] [

Back →] traces [
] missis oculi[
]...t amu..[

4. Perhaps the phrase *demissis oculis*, though rather poetic. There is an apparent stroke above the *o* which makes it look like *d*, but given that the reading of the previous letter is probably correct this seems impossible and we think it more likely to be dirt.

DESCRIPTA

27. Inv.no.91.i Layer 8
 5.6 × 1.4 cm Plate VI, 4
 Fragment of the right-hand column of a letter. On the front:] *cum de iniuria* (slightly misaligned). Back: tops of letters only, possibly *Flauio*[. The attribution to the archive of Cerialis is based on general probability and the association under the same inventory number with No. 28.
28. Inv.no.91.ii Layer 8
 3.3 × 1.3 cm
 Fragment of a letter (?). Traces of two lines on the front. Back: in an address script, possibly] *Ceriali*.
29. Inv.no.22 Layer 8
 6.5 × 1.9 cm
 Part of one line, along the grain:]*Flavius Cer*[. The *s* appears to have been remade; following this, *Gen[ialis* is less likely but not impossible. The connection with the archive of Cerialis (if the name is read correctly) cannot be elucidated. The nominative case indicates that it cannot be a letter addressed to Cerialis (cf. No. 26).

2. The Archive of Crispinus

30

Inv.no.90
Plate VI, 1
Unpublished

Layer 8
18.0 × 7.5 cm

References: Birley, *Vindolanda*,
pp.134, 136
Bowman-Thomas, *Historia* 24
(1975), p.475

Nine joining fragments which supply the larger part of a diptych which is remarkable for its thinness. The format is the familiar one — the leaf is scored and folded with the writing on the inner faces in two columns. The loss of the top of the right-hand-side of the diptych leaves only traces of one line of writing at the top of the second column of the letter. There is no sign of tie-holes and it is doubtful whether there were any notches in the left and right-hand edges. Faint traces of the address survive on the back of the right-hand section.

The matter of the text is brief and succinct. Niger writes to Crispinus to inform him of the progress of some soldiers of *cohors i Tungrorum* whom Crispinus had sent with letters to the governor. Our interpretation of the details, which is set out at length in the notes, is as follows. Crispinus, the *praefectus* of the *cohors i Tungrorum*, had sent soldiers from Vindolanda carrying letters for the governor. They had stopped *en route* at Bremetennacum (Ribchester), where Niger was perhaps the commanding officer, and Niger had then sent them on their way. It follows from this that if the soldiers travelled from Vindolanda to Ribchester on their way to the governor, then the latter was at some place other than York (see further line 6 note).

In spite of the fact that they are addressed to different people, Nos. 30 and 21 bear a close resemblance to each other in several respects, and a detailed comparison is instructive. Both diptychs are extraordinarily thin, though No. 21 is perceptibly larger in its vertical dimension (by about 1.5 cm). In both cases the left-hand column of writing occupies more than half the width of the diptych. In No. 21 the whole of the diptych is used, whereas in No. 30 the right-hand column contains not more than two lines of the main body of the letter; then follows the closing greeting, and the lower half of the right-hand side is blank. In both cases the first line of the text commences some way to the left of the body of the letter. Within the body of the letter, the first line (i.e. line 3 in both cases) also commences further to the left than the rest, though not so far out as line 1. In both texts the closing greeting is written by a second hand.

In these respects the tablets follow the normal pattern for the letters, and their close similarity might be thought unremarkable; but we have drawn attention to this similarity because of the fact that No. 30 is from Oppius (?) Niger and No. 21 from Niger and Brocchus. We need to ask therefore whether Niger in both these texts is likely to be the same man. Our answer will depend partly on whether we think the texts were written in the same hand or hands. The second hand of No. 30 does bear some resemblance to the second hand of No. 21, but so little of the writing survives and the reading of what does survive is so uncertain that we would not wish to build anything on this resemblance. At first sight, the main hand of both texts looks to be the same;

No. 30 is written in a fine, elegant, slightly right-sloping script, noticeable for the use of different sizes of the individual letters (e.g. *c*, *l*, *r*, *s*). All these features, as well as most of the letter-forms, occur equally in No. 21. The only letters which differ markedly in form are *d*, which in No. 30 is regularly in the 'uncial' form but in No. 21 is in the 'minuscule' form (see FIGS. 11.7 and 11.8, p. 58) and *i*, which is occasionally very long in No. 21 but which never appears certainly in this form in No. 30 (see, however, the note to line 8). Some idiosyncracies found in No. 30 (*h* and *m* at the end of lines 3 and 4, the digit *i* in line 4, on which see the notes *ad locc.*) are best ignored for this comparative purpose. Much more significant is the fact that ligature is almost entirely absent in No. 21 but, in the context of the Vindolanda tablets, it is fair to say that it is relatively common in No. 30: *er* in lines 1 and 6, *is* lines 1 and 3, *gr* line 4, *se* line 6 etc. Especially notable are the ligatures *or* in *Tungrorum* (line 4), and *sa*, followed by *ad*, followed by *dc* in *epistulis ad consularem* (line 5). We still think it possible, to put it no higher, that the same hand is responsible for both letters, but in view of these differences it is safest to leave the question open. Likewise, we cannot insist with confidence on the identity of Niger in the two texts; but even if the hands were not the same this would not, of course, preclude the possibility of identity, since the main hand in both letters is likely to be that of a clerk.

DIPLOMATIC TRANSCRIPT

→	oppius niger crispino [] [...] [...]
	crispumet. [c.6] e coh	(<i>m</i> ²)	] [...] umkal [...]]
	̄i tungrorum quos cum	10	a d m ...
5	epistulis ad consularem n		frater
	miseras abremetennaco	Back: →	traces of two (?) lines

RECONSTRUCTED TEXT

i
 → Oppius Niger Crispino
 s[
 Crispum et e[c.6] e coh(orte)
 ̄i Tungrorum quos cum
 5 epistulis ad consularem n(ostrum)
 miseras a Bremetennaco

ii
] [...] [...]]
] [...]] um Kal(end) ..[
 (*m*²) uale domine
 10 frater
 Back → Traces of two (?) lines

TRANSLATION

“Oppius Niger to his Crispinus, greetings. Crispus and from the first cohort of Tungrians, whom you had sent with letters to our governor, I have sent on (?) from Bremetennacum to (?) on (date). (*2nd hand*) Farewell, my lord and brother.”

1. *Oppius*: the first letter is certainly a large, rather angular *o*. For what follows the choice seems to lie between a repeated *p* or *c*. Both Oppius and Occius exist; the former, which appears to be the commoner *nomen*, seems to us a more probable reading.

Crispino: the reading is clear and it seems logical to conclude that he was the *praefectus* of *cohors i Tungrorum* (see note to line 4). The *cognomen* Crispinus also appears in No. 37.1 and 2, evidently referring to two separate individuals; but it seems unlikely that either can have been the Crispinus of No. 30 (see No. 37.1–2 notes).

2. The long descender cutting through *t* of *et* in line 3 is, we presume, part of *s* in line 2, before which there is no trace of writing. We could restore either ς [*alutem* or ς [*uo salutem* (for the latter cf. No. 21.2). If the former is correct *suo* will have come at the end of line 1 and will have overrun the central fold, as happens in lines 3 ff. It is possible that we have the top of another letter in this line below the second *i* of *Crispino* in line 1; if this is ink, it can only be the top of an *e* and we must, because of the spacing, read ς [*uo salut*]e[m].

3. *Crispum*: we are reasonably confident of the reading; the first stroke of the *i* is much more like the writer's usual *a* but the second stroke is horizontal, not sloping diagonally from left to right, and does not come to the left of the first stroke as it ought to do if *a* were written. *s* is made in the writer's smaller version as in *miseras* (line 6) and the final *s* of *epistulis* (line 5). The initial *c* is large and made in two strokes, the descender being slightly bowed; it compares well with the smaller *c* of *cum* in line 4.

ē[: only the feet of these two letters survive; the second can hardly be anything other than *e* in this hand; the first is, we think, most likely to be *p*. After the break, only the foot of the first letter can be seen; this is compatible with *s* (e.g. *eo*]s, *illo*]s?).

coh(orte): the form of the *h* is remarkable. The top is lost, but what remains curves sharply to the right at the foot of the upright, and the final descender sweeps down below this line to finish (we believe) level with the end of *Bremetennaco* in line 6.

For the phrasing here we should compare RMR 89.1.4–6: *misi / ad uos p[e]r aure[l ca.14]...[]um sta[tor]em / aurel mu[ci]anum [[Om[a]ri[ani]] (correction of line 5) / coh eiusdem quem dim[ca. 10] quintum [n]onas iul. Fink suggests dim[isistis after quem.*

4. \bar{i} : our remarks in *Historia* 24 (1975), p.475, which were based on an earlier photograph, were misleading. The digit is marked by a superscript bar and preceded and followed by medial points, thus making it clear that it is the numeral which is intended. In the context this can only be read as *i*, even though it is made quite unlike any other *i* in the text and closely resembles a small modern *c* (but not *c* as written elsewhere by this hand). Was the writer deliberately differentiating between *i* as a letter and *i* as a figure?

Tungrorum: the two forms of *r*, with the short and the long tail, appear in this word. This is the only reference in our texts to the *cohors i Tungrorum*, and we are entitled to deduce from the fact that Crispinus had despatched soldiers of this unit, that he was the *praefectus*. This text strongly suggests that the *cohors i Tungrorum* occupied Vindolanda during the period (or part of it) represented by layers 8 and 10 (ca. A.D. 95–105). We think it likely, on internal grounds, that it will have succeeded *cohors viii Batauorum* as the garrison of Vindolanda in the latter part of this period (see above, pp. 47–8). The other evidence for this unit is compatible with this suggestion. The cohort is attested in Britain in a diploma of 103 (*CIL* 16.48), where it is milliary. Normally, therefore, one would expect to find it commanded by a *tribunus*; but it has been shown that, like its sister unit *cohors ii*, it was anomalously commanded by a *praefectus* (E. Birley, *CW* n.s.35 (1935), pp.56–60 and see *RIB* 1580 and 1586). There is no doubt that the fort at Vindolanda will have been able to accommodate a milliary unit at this time (Birley, *Vindolanda*, p.109). In fact, the unit had been reduced to quingenary size by 122 (E. Birley, *Corolla Swoboda* (1966), pp.54–67), but it was again milliary in the Antonine period. This is shown by the important evidence of a new fragment of a diploma from Vindolanda, dating to 146 and issued to a soldier of *cohors i Tungrorum (milliaria)*. This is compatible with the suggestion that the cohort had been stationed at Vindolanda in the pre-Hadrianic period. The soldier to whom the diploma was issued would have been recruited in 121 or a little earlier, and the finding of the diploma implies that he had retired there some time after completing his service. We do not know for certain where *cohors i Tungrorum* was in 146 (*RIB* 2155, which shows it at Castlecary during the Antonine period, cannot be dated precisely), but we can be sure that Vindolanda was not militarily occupied during this period. It seems more than likely that it was, in fact, the first garrison of Housesteads (which it is known to have occupied in the third century) and that it was moved there direct from Vindolanda when the Wall was built. We are much indebted to Margaret Roxan for information about this diploma and her views on its historical implications.

5. *consularem n(ostrum)*: since No. 30 comes from the same layer as No. 37, which mentions the governor (Neratius) Marcellus, it is tempting to suggest that the reference here (and perhaps also

in No. 21) is to the same man. *n* is a clear reading but the leaf is broken at the point where one would look for an abbreviation mark; however, No. 21.10 and several examples in Latin papyri lead us to believe that there will have been a horizontal stroke above it.

6. *a Bremetennaco*: on the use of prepositions with place-names see above, p. 72. We interpret the letter to mean that Crispinus has sent men to the governor from Vindolanda and that these men have been further sent on their way by Niger from Bremetennacum: that is, we suggest that *a Bremetennaco* is to be taken not with *miseras* but with what follows. After all, there would be little point in Niger telling Crispinus that he (Crispinus) had sent the soldiers from Bremetennacum, and it would make it difficult to explain how the letter came to be at Vindolanda (see also the note to line 7). On the name *Bremetennacum* see now Rivet-Smith, *PNRB*, p.277. Rivet-Smith and K. Jackson, *Britannia* i (1970), p.69 speak of *Bremetona as 'roaring river' and think this may be a name for the Ribble. *RIB* 583, like the present text, provides documentary authority for the form of the name with *-nn-*. On the strategic importance of the site see I.A. Richmond, *JRS* xxxv (1945), pp.15–29; I.D. Margary, *Roman Roads in Britain*² (1967), pp.370 ff.; and for a recent summary account of the occupation of the north-west, T.W. Potter, *The Romans in North-West England (CW Research Series* i, 1979), pp.356 ff. Bremetennacum (Ribchester) must be a part of the development which took place under Julius Agricola; see in general J.H. Hopkinson, *The Roman Fort at Ribchester* (3rd ed. by D. Atkinson, 1928). We do not know for certain what its garrison was at this time, though *ala ii Asturum* has been suggested (Hopkinson, *op.cit.* p.8; see the undated dedication by a *decurio* of that unit at Ribchester, *RIB* 586). This might, therefore, be Niger's unit. Assuming that the road-network which linked the important forts in Lancashire and Yorkshire was being developed at the same time (Margary, *op.cit.*, pp.371–4), soldiers sent by Crispinus from Vindolanda to Niger at Ribchester would hardly have been *en route* to the governor at York (though there was a major linking road, see Margary, *op.cit.*, p.358, and also a main trunk road from Carlisle to Manchester on which Ribchester lay). But the most natural route from Vindolanda to York would be first to Corbridge and then south to Catterick (see *Itin.Ant.*I and Rivet-Smith, *PNRB*, pp.155–6). Hopkinson, *op.cit.*, p.7 suggests that Ribchester was established to protect the route from the northern frontier to Chester and Caerleon. If our interpretation of the text of No. 30 is correct, it suggests that the governor was in this part of the world, perhaps at Chester.

7–8. There can be no line lost in this column, and the remainder of the message must be contained in lines 7 and 8. If our interpretation is correct, we need a verb of sending (probably a compound of *mitto*), a date and, perhaps, the name of the place to which they were being sent on. Of these elements, the date clearly came in line 8, where the reading *kal* is certain. We are not at all sure what to read after this: all the letters of *kal* are made in a tall form and the letter following is equally tall; if the stroke running horizontally at the middle is to be taken as a cross-bar, we ought to have either *e*, i.e. *kalend-*, or *f*, i.e. *kal(end-) februari-*; the size and shape of the letter following *kal* favours *f* and we might expect *kalendae* to be abbreviated to *kal*; however, we are not at all confident of either of these readings since the writing following (visible on an earlier photograph) can hardly be accommodated to either *n* or *e*. Indeed, it looks very much like the writer's normal *u*, and we wonder whether the apparent cross-stroke is no more than a thick stroke leading in to *u*, cf. the *u* in *consularem* (line 5). If so, the tall stroke before it would have to be understood as long *i* (not used elsewhere in this tablet but found several times in No. 21, n.b. especially *precar* in line 8), and we should have a reference to June or July. The letters *um* before this suggest the phrase *ante diem* plus an ordinal number, but unfortunately we cannot fit the traces to any such number: the long descender at the left (which may well be from the first letter of the line, but need not necessarily be) looks like the foot of *a*, *r* or *s*; the next descender slopes more and suits *a* or *r* better; the writing immediately before *um* is curious, most resembling *a*; but *jaum* seems to lead nowhere. We should probably therefore do better to take it as *d* with the bottom of the curve missing or as *r* with the characteristic curve at the top left missing; the reading *orum* seems just feasible. If this is on the right lines, the writer must be saying that he took action on 1 June or 1 July.

9–10. We have printed what makes sense and what we should expect to find here, but some of the readings in line 9 are very difficult, notably *u* in *uale*, *o*, *i*, *n*, and *e* in *domine*. If *uale* is correct,

animus eorum in nostram salute[m]; Seneca, *ben.*5.20.2, *nihil refert an bonam rem malo animo quis accipiat*; Quintilian, 7.4.15, *male fecisse nos sed bono animo dicimus*. Its meaning is connected with motive rather than state of mind. The text of the left-hand column may have overrun the fold, but we would have lost only a short word.

4. Perhaps *contracti*[, most likely to be the perfect participle of *contraho*.

5. We might well have *es*[t at the end.

7. Perhaps *quod factum* [.

9. Perhaps *mod]esti* or *hon]esti pudo]ris*.

There are three tiny fragments, one of which (reading *]ti*[]) perhaps belongs to a line below this. The other two scraps might join but cannot be placed in the text: there are traces of three lines of which the second appears to have *]co*..[.

32

Inv.no.82.ii
Plate VI, 6
Unpublished

Layer 8
5.3 × 2.8 cm

Little can be said about this fragment except that it contains part of the first line of a left-hand column and the beginnings of three lines of a right-hand column of a letter which may belong to the archive of Crispinus. The back is apparently blank.

TEXT

→ i
]no suo

 ii
ei frau[
explica[
uiuit ex[

1. Evidently the first line of the letter which overran the central fold. It is a reasonable guess that Crispinus is the addressee whose name is lost, but it might be the addressee of No. 40. The first surviving letter has a final stroke proceeding well above the line and curving to the right; we do not see how it can be read as anything but *n*, but it is not like any other *n* in the tablets.

2. *frau*[: we are uncertain of the reading because we have such a small sample of this hand. The dot represents an apparent descender coming down to the left from the broken edge; if it is ink, *s* would suit our reading much better than *r*.

DESCRIPTUM

33. Inv.no.70.i
4.5 × 1.5 cm

Layer 8

Remains of the right-hand column of a letter. Bottoms of letters only on the front: perhaps *opto] te bene ualere*. Back, in address script: *Crispin]o* and tops of letters below, perhaps *praef(ecto)*.

3. The Archive of Flavius Genialis

34

Inv.no.64

Plate VII, 1 and 2

Unpublished

References: Bowman-Thomas, *VWT*, pl. xv
 Bowman-Thomas, *Historia* 24
 (1975), p.474
 Birley, *Vindolanda*, pl. 81

Layer 8

10.2 × 4.0 cm

Seven joining fragments from the right-hand portion of a diptych. There survive four complete lines of a letter and, on the back, an address to Flavius Genialis. We do not know what Genialis's position or rank was. Of the tablets which can be assigned to his archive, No. 34 is the only one with any substantial amount of text, and its content, in so far as it can be recovered, makes it seem likely that he belonged to the officer class. The loss of most of the text of the letter, which looks as if it might have been of some interest, is particularly regrettable.

The hand is an interesting one, not without some pretensions to elegance. Note in particular the regular use of an additional stroke at the right in *a* (cf. FIG. 11.2, p.58), the two forms of *d*, the common occurrence of long ascenders and descenders and, above all, the very marked serifs on certain letters, especially *l* and *n*. There is a remarkable *h* in *mihi* (line 1) in which the cross-bar starts from the top of the left-hand *hasta* (cf. *h* in *mihi* in No. 39.3).

DIPLOMATIC TRANSCRIPT

→ c̄isrogosiquidutilemihicredi.[
 autmittasautreseruesquidnobis̄o .ūs̄
 (m²) et gā.o .l̄ ui
 esset̄ paternoñ ad te manda[re]quem
 quem̄ita exegeras statimadtedimisi
 5 traces

Back → flauio geniali

RECONSTRUCTED TEXT

→ c̄is. rogo, si quid utile mihi credid[eris],
 aut mittas aut reserues. quid nobis opus
 esset̄, Paterno n(ostro) (m²) et Gā.o .l̄ (m¹) ad te
 manda[re] (m²) ui. (m¹) quem-
 quem̄ ita exegeras, statim ad te dimisi
 5 traces

Back → Flauio Geniali

TRANSLATION

“ . . . Please either send or keep on one side anything which you believe useful for me. I sent word to you by our friend Paternus (*2nd hand*) and by Ga. . . . (*1st hand*) as to what our needs were. Thus, anyone whom you had demanded, I immediately sent on to you . . . (*Back*) To Flavius Genialis.”

1. Since the space above this line shows no trace of the bottoms of letters, it is likely that this was the first line of the right-hand column of the letter.

çis: if this is correct it may be, for example, the end of a noun such as *ami]çis* or a verb such as *fa]çis*. But *şis* is also a possible reading.

mihi: on the remarkable form of *h* see introductory comments.

credid[eris: although broken, the last letter surviving can hardly be anything but *d*. If the writer followed the expected sequence of tenses *credid[eris* would seem to be the only reading possible.

1 ff. The sentence structure is far from certain. Dr. Adams has drawn our attention to the fact that *rogo* (*ut*) plus subjunctive is formulaic in epistolography of this period (see *CPL* 303.10, 246.5, 251.20 f., 255.11 f. and above, No. 22.5–7, 9–10) especially when the subjunctive is *mittas* (see *CPL* 304.15, 250.17 f., 251.23 f., 27). He adds that it is not uncommon for a *si*-clause to be interposed between *rogo* and the subjunctive, referring to Cicero, *ad Att.* 5.12.3, *rogo de aqua si quid poterit fieri sis*; *ad Att.* 5.18.3, 16.5.2; No. 22.5–7 and especially to *CPL* 251.23 f., *rogo te, pater, si tibi uidebitur, ut mittas* In view of this we are confident that *rogo . . . reserues* is to be taken as a unit. It is not clear whether the sentence should end here or after *esset* in line 3. We have chosen to end here because of the tense of *esset* which goes better with *mandauit*; it is also easier to explain the switch from *mihi* to *nobis* if the clauses to which they belong are in different sentences. It is also unclear whether we should make a heavy stop after *mandauit* and whether the next sentence came to an end with *dimisi*.

2. *opus*: an earlier photograph leaves no doubt about the reading of the first letter and little about the second; from the later photograph (PL. VII, 1) it can be seen that *u* is almost certain for the third letter and that *s* is possible for the last (*i* is also possible, but *usui* certainly cannot be read). *opus* is contextually and grammatically suitable.

3. *esset*: *esseş* is possible but cannot be right if we are correct in reading *opus*. Presumably the stroke over the final letter, which appears to be the top of an *s*, belongs to the second *s* of *esset*.

Paterno: this name does not occur elsewhere in the tablets.

n(ostro): for this abbreviation see No. 21.9–11 note.

Even though only a few letters survive, we are confident that the interlinear addition was written by a second hand (perhaps the author himself correcting the letter as written by a clerk?). This hand has corrected *mandare* (which appears to have no construction) to *mandauit*, and added some writing which we cannot read in full. The spacing suggests that there were three words of which the first is fairly certainly *et*. Presumably there follows a second name to go with *Paterno* and this probably begins with *Ga* and ends with *o*; in between there is probably only one letter but there is certainly too much ink for *i* (*Gaio*); *u*, *n* and *m* all seem just possible, and of these we should probably opt for *m* since *Gamus* is attested as a *cognomen* (it is not in *Kajanto LC* but it can be found in the indices of *ILS*). What follows is uncertain: *l* seems clear and it is preceded by one or two letters. We are reluctant to read *nil* since there does not seem to be enough ink for both *n* and *i*, and it is in any case improbable that an insertion of this kind would totally transform the sense of the original message. Perhaps it is an abbreviation: *n̄il* (for *militi*) seems too much for the traces; possibly *fil* (for *filio*)?

For the construction with *mandauit*, where *ad te* replaces the more usual *tibi* and *Paterno* is used in the sense *per Paternum*, cf. *TLL* s.v.III and cf. in particular Tacitus, *Ann.* 2.30, *extremas preces P. Quirinio propinquo suo ad principem mandauit* and Cicero *ad Att.* 11.12.1, *saepe enim ad eum scripsi multisque mandauit me non potuisse*; on the latter *TLL* adds ‘*sc. ut ei dicerent*’ and Shackleton Bailey (No. 223) translates ‘I have written to him repeatedly and sent word by others that I was unable . . .’, a translation which we have imitated (though it would perhaps more accurately reflect the construction were we to translate ‘I instructed Paternus to bring word to you’).

3-4. *quemquem ita exegeras*: all the dotted letters are uncertain but no other readings seem possible. *quemquam* would be acceptable palaeographically but can be excluded on linguistic grounds; it means 'any single person' and is usually found in negative statements or in questions implying a negative answer (we are again indebted to Dr. Adams for this observation).

6. The name is written in the elongated letters characteristic of addresses in the tablets. There is no doubt about the reading even though the bottoms of letters in the *cognomen* are missing. In spite of our tentative assignation of three letters to this 'archive' it is fair to say that No. 34 is the only one in which the reading of the name is beyond doubt. If Genialis's rank or position was specified it will have been in the lower part of this tablet, now lost.

35

Inv.no.175
Plate VII, 3
Unpublished

Layer 8 or 10
7.7 × 3.6 cm
3.6 × 4.3 cm

Part of a letter perhaps addressed to Genialis and mentioning the name of Cerialis (see Nos. 21-9). The larger of the two substantial fragments is from the left-hand side of a diptych and contains the beginning of the letter; the smaller seems to be from the top of the right-hand side, but we cannot make a join with the other piece. There is a third, tiny, scrap which cannot be joined to either of the other pieces. The back of the tablet is blank. There is not enough of the text remaining to allow any guess about the content.

TEXT

i

→]...uș genialī suō
]domine cerialis

.

ii

]uș ... benefi.[
]lis erbere[
traces?

.

1. The name of the addressee is far from certain. In reading *Genialī* we have taken into account all the strokes (but realise that the final one may not be ink). But the form of *g* appears to be anomalous; *n* is difficult, especially as the first part of it would more easily be read as *r*, and *a* shows no sign of the second stroke. However, we have considered and rejected *Cereali*; the initial letter cannot be *c*, *eali* does not suit the traces and the name is not normally spelt this way. There is no sign of *salutem* below this and we can only suggest that it may have been written in line 1, though this would be the sole example of such a format in our tablets.

2. If the name of the addressee is correctly read this cannot be a vocative addressing Cerialis, but must be a third-person reference, with Genialis addressed as *domine*.

DESCRIPTUM

36. Inv.no.32.ii
4.1 × 1.4 cm

Layer 8

Part of the right-hand column of a letter (?). Remains of two lines on the front:]...tes u[/]ri n̄ s [, perhaps *consula]ri n(ostro)*, cf. Nos. 30.5, 21.9-10. Back: probably G]enialī, in address script.

4. Miscellaneous Letters

37

Inv.nos.29+31

Plate VIII, 1 and 2

Unpublished

Layer 8

10.2 × 6.8 cm

- References: Bowman-Thomas, *VWT*,
pp.8, 19, 26
Bowman-Thomas-Wright,
Britannia v (1974), p.472
Bowman, *Britannia v* (1974),
p.360
Bowman-Thomas, *Historia*
24 (1975), pp.466, 475
Wright, *Proc.XIV Int. Congr.*
of Papyrologists (1975), p.355
Bowman, *ZPE* 18 (1975), p.237
n.2
Thomas, *Scriptorium* 30 (1976),
p.40
Birley, *Vindolanda*, p.136
Birley, *FRB*, p.87
Birley, *PRB*, pp.35, 93

This tablet, now in seven fragments and originally inventoried under two separate numbers, is easy to reassemble as the pieces are contiguous and can be joined on the basis of their shape and the content of the text. The various pieces are correctly aligned in PL.VIII, but the wood had suffered some warping since it was first recovered. In some places, therefore, earlier photographs have enabled us to make readings more easily and to assess the spacing more accurately. What remains is the greater part of twenty-six lines of a letter written on both sides of the leaf. The format — absence of the name of the sender, writing on both front and back of the tablet, one column written across the broad side of the leaf and with the grain — and the fact that in some places words are crossed out — clearly indicate that what we have is only a draft. This is confirmed by the remark in lines 24–5 that the letter is being written *at Vindolanda*. Obviously, what we have is not the fair copy. It is not improbable that the writer, having made a draft, would have handed the letter over to a clerk to copy out and to add the name of the sender and the greeting (cf. line 1 note). The writer might then have appended closing greetings in his own hand, for which see No. 21. We believe that this leaf is complete at all margins, but the loss of a large part of line 26 makes us uncertain whether the draft was continued on another leaf. One or two other fragments in the collection may well be in the same hand (Nos. 51, 52, 60, 83) but we have not been able to join any of these to the main text.

The writer does not give his name and we cannot say who he was. What can be said with confidence, on the basis of the content and the elegant style, is that he belonged to the officer

class. We think he may very well have been one of the *praefecti* in command at Vindolanda (see above, pp. 48–9). We have not included this text in the archive of Crispinus in spite of the fact that the *cognomen* occurs twice in this letter; the reason is that we think it unlikely that either Crispinus the addressee or Grattius (?) Crispinus in line 2 can be identical with the Crispinus attested as *praefectus* of *cohors i Tungrorum* (see note to line 2).

The letter is important for a number of reasons; indeed it is perhaps not unfair to describe it as the most important tablet in the collection. This is due first and foremost to the mention in line 14 of a certain Marcellus, a *uir clarissimus* and a *consularis*, who must therefore have been the current governor of Britain. L. Neratius Marcellus is attested in office as governor in 103 (see notes to lines 14 and 15) and this fits admirably with the dates assigned to the archaeological layer in which this tablet was found. It is worth stressing that this is the only information in the texts of the writing-tablets which helps to corroborate the date for the collection which has been deduced from the archaeological context. It is also noteworthy that the writer says in lines 24–5 *ha[ec ti]bi a Vindolanda scribo*, since there has been some doubt about the correct form of the Roman name of the fort; this point may now be regarded as settled (see note *ad loc.*).

As has been remarked, the letter is exceptional for the quality of the Latin, which has a literary flavour and some elegance (for further discussion see above, p. 72). Palaeographically, too, the letter is among the most interesting in the collection. Apart from the fragments mentioned above, which may be by the same hand, the script is not closely comparable to that found in any of the other tablets or to any we have noticed in contemporary papyri. Ligature is used boldly and more frequently than elsewhere in the tablets. Nearly all the ligatures discussed above (pp. 60–7) are to be found as well as some unexpected joins, e.g. between *e* and *preceding* letters (*te* line 5, *pe* in *semper* line 10, etc.) and between *l* and the letter following (*saluom* line 6, etc.). It is also noteworthy that *a* is occasionally made in one movement and ligatures at both left and right, e.g. *habeo* line 9 and *hanc* line 11. These features may be attributed to the fact that our text is no doubt only a somewhat hastily written draft. But the writing is also striking for the idiosyncratic way in which it uses many of the ordinary cursive forms of the letters, most noticeably perhaps *n*; this is written much like a modern small *n* but with a marked loop at the right, cf. *hanc* line 11 and *beneficio* line 22. The most remarkable letter-form is the *a* in *amicis* line 22, which should be compared with the final *a* in *Vindolanda* lines 24–5 (see also p. 61 above). Note also the first *m* in *amicorum* line 17, and the *ui* ligature resembling *q* in *cuius* line 11. It is also noteworthy that the writer normally leaves a space between words. This space may be equivalent to one letter, or to two or even more. But the writer does not leave spaces between the words in a consistent manner, and the result of this is that it is particularly difficult to judge the extent of the loss in the various lacunae. In the diplomatic transcript an attempt has been made to copy the spacing on the original as closely as possible.

The point of the letter seems clear. The addressee Crispinus is in a position to exercise influence with the governor, perhaps having recently obtained a post on his staff. The writer is asking Crispinus to use this position on his (the writer's) behalf to make his military service pleasant by putting him on good terms with as many influential people as possible.

Note that in Birley, *FRB*, p.87 there is a version of lines 9–15 and 24–6, which is rather different from that printed here. We should emphasise that the suggestions in the text and notes below are based on what we now regard as better readings.

DIPLOMATIC TRANSCRIPT

Front → [] uacat crispino suo [ca. 6
 [] rattio crispino redeunte [...
 [ca.10] ~~non fui mihi~~ et d. [...
 [ca. 9] benter amplex...[....
 5] mine salutandite occas...
 [] ominummeum et quemsaluom
 bere esse et omnis spei
 suaē compotem interpraecipua

- uoti habeo hoc enim de
 10 me semper meruisti usque
 adhanc d[ca.4]tem cuius f..
 ...a ho[ca.6]e teprimu.[...
 [ca.4]..[ca.6].cut..e. il[...
 Back [.....]mmarcellum clarissi[.....
 15 [.....]consularem meum quar.[.....
 [.]assionem nunc ut.[ca.11
 [.....]ibi amicorum do[ca.10
 s..[.]...sentia quost.[ca.9
 illius scio plurimos haber.[.....
 20 quomodo uoues implequid.[.....
 dete exspecto et me[.]...
 amicis ita instrue ut beneficio
 tuo militiam [..].im iucundam
 experiri ha[.....]bi auindolan
 25 a scribo .[ca.6] hiberna[
 [.]n u. h..[ca.6].iusa.[

RECONSTRUCTED TEXT

- Front → [] uacat Crispino suo [uacat ?
 [G]rattio Crispino redeunte .[...
 [ca.10] [[non fui mihi]] et d.[...
 [ca.7 li]benter amplexus s[um do-
 5 mine salutandi te occasione[m
 [d]ominum meum et quem saluom
 [[habere]] esse et omnis spei
 [[suae]] computem inter praecipua
 uoti habeo. hoc enim de
 10 me semper meruisti usque
 ad hanc d[ca.4]tem. cuius fid-
 ucia ho[ca.6]e te primum [...
 [ca.4]..[ca.6] .c`ut` ..e. il[...
 Back [.....]m Marcellum clarissi[mum ui-
 15 [rum] consularem meum. quar.[.....
 [oc]casionem nunc ut.[ca.11
 [.....] tibi amicorum do[ca.10
 sua [p]raesentia. quos tu[ca.9
 illius scio plurimos habere [.....
 20 quomodo uoues. imple quidq[uid
 de te exspecto et me .lu.[.]...
 amicis ita instrue ut beneficio
 tuo militiam [po]ssim iucundam
 experiri. ha[ec ti]bi a Vindolan-
 25 da scribo .[ca.6] hiberna [
 [.]n u. h..[ca.6].ius a.[

TRANSLATION

“To his Crispinus. Since Grattius (?) Crispinus is returning to . . . and . . . I have gladly seized the opportunity, my lord, of greeting you, you who are my lord and the man whom it is my very special wish to be in good health and master of all your hopes. For you have always

deserved this of me right up to the present high office (?). In reliance on this . . . you first . . . Lucius Marcellus, that most distinguished man, my governor. He therefore offers (?) the opportunity now of . . . the talents (?) of your friends through his presence. Of those whom you assist (?) with his permission (?) very many, I know, have just what you promise them. Fulfil what I expect of you and . . . so furnish me with friends that thanks to you I may be able to enjoy a pleasant period of military service. I write this to you from Vindolanda where my winter-quarters are (?) so that (?) . . .”

1. There would be room for *salutem* in the lacuna at the right, but we think it at least as likely that in this draft the writer merely put *Crispino suo*, leaving his clerk to fill in the greeting in the fair copy. For our uncertainty on the identification of this Crispinus see the next note. The *cognomen* is, of course, extremely common.

2. [G]rattio: the penultimate letter is rather oddly formed; but if we are to look for a *nomen* here, it can hardly be other than *i*; *r* is a good reading for the first surviving letter. To judge by the margin at the left in lines 7 ff. there would be room for two letters before *r*, but we cannot suggest a suitable restoration of this length. If only one letter is lost, we may restore Grattius or Crattius (Schulze, *LE*, pp.423–4); of these the former seems to be the more common. As remarked in the introductory comments, we do not think it likely that either he or the addressee of the letter is to be identified with the Crispinus who was *praefectus* of *cohors i Tungrorum* (see No. 30.1 and 4 notes). In theory we could identify the prefect with Grattius Crispinus if we supposed that he had just come to the end of his tenure of the prefecture of *cohors i Tungrorum* and was returning from Vindolanda, perhaps to the governor's headquarters. Alternatively, we could seek to identify the prefect with the addressee of the letter by supposing either (a) that he had not yet become *praefectus* of *cohors i Tungrorum*, or (b) that the letter was from an officer of *cohors viii Bataurorum* at a time when Crispinus was *praefectus* of *cohors i Tungrorum* but the unit had not yet been posted to Vindolanda. But both hypotheses are extremely tenuous.

The trace at the end of the line would suit *a* and we should perhaps read *a[d]*.

3. [[*non fui mihi*]]: for the form of the second *n* in *non* compare the second *n* in *Vindolanda* (lines 24–5). It is not clear what the writer had in mind in writing these words which he subsequently deleted.

et d[: the letter after *et* looks most like *p*, but this cannot be right unless another letter is lost between this and *d* following (which is a probable reading). *et ad* [is perhaps just possible.

4–6. Supplementation at the left is a little difficult: in line 6 there would seem to be room for two letters before]*ominum* and for one, or even two, before]*mine* in line 5. We have considered reading [do]mine at the start of line 5 (perhaps with a word like *frater* at the end of line 4), but it seems better to read [do/]mine, assuming a broad *m*, to fit the alignment suggested by d]ominum in the next line.

4–5. *amplexus s[um . . . / . . . occasiōnem*: on the literary flavour of this phrase see above, p. 72, and cf. Pliny, *Ep.*2.13.1, *et tu occasiones obligandi me avidissime amplecteris*. For the spelling of *ocassionem* see p. 73. The word is in two halves on separate fragments but the reading is not in doubt.

6. *saluom*: for the form see above, p. 73.

8. *compotem*: *compos uoti* is a common expression, see *TLL* s.v. *compos* 2137, but the two words cannot be combined here. For *compos* governing *spes* see Livy, 29.22.5, *spei conceptae . . . compotem populum Romanum facere*.

inter praecipua: a broad *a* is probably sufficient to account for all the ink after *praecipu*; *praecipuum* is a less likely reading (and *praecipuom* is impossible). For the expression cf. *TLL* s.v. *inter* 2134 with reference, e.g., to Quintilian, 1.8.7 [*comoedia*] *inter praecipua legenda erit*; for the following genitive cf. above, p. 72.

9–10. *de me . . . meruisti*: it would suit the sequel as we understand it (see below) if this could mean ‘you have always done well by me’; but this seems an impossible meaning for the phrase with *de* (even though ‘you have always deserved this of me’ would normally require the deponent form of the verb, cf. *OLD* s.v.).

11. *d[ca.4]tem*: the letter before *tem* is either *a* or *r*. With *semper* in the sentence it is very tempting to read *d[iem]*, but this leaves *]rtem* or *]atem* suspended. We think the most likely solution is to read *d[ignit]atem*, which can probably just be accommodated in the lacuna. We should take it in the sense 'this responsible post which you now hold', for which cf. *OLD* s.v. 3b.

11–2. *cuius fiducia*: after *f*, *i* is virtually certain and *d* suits the traces well. The reading at the start of line 12 is far from certain, but no case of *fides* can be read. Most easily reconcilable with the traces, we think, is *fiducia*, less probably *fiduciam*. Such a word division is unexpected but it is perhaps acceptable in the present context, which is only a draft. We take *fiducia* as ablative governing the genitive *cuius* in the sense 'relying on', for which see *OLD* s.v. 2b; see in particular Cicero, *ad fam.* 6.16, *cuius fiducia peto a te* etc., where the antecedent of *cuius* is *nostrae amicitiae*. The same sort of meaning would make reasonable sense in our letter, with the writer referring here to 'my goodwill towards you', as indicated in the preceding sentences. It would make even better sense if the writer had just said 'you have always done well by me' but, as indicated in the note to lines 9–10, we do not think this is a possible translation for the previous sentence.

12–3. So little remains of these lines that we cannot hazard a reasonable guess at the drift of the sense. The lacuna in line 12 is probably wide enough to accommodate *ho[c domin]e*.

13–5. As the tablet is complete at both the top and the foot, we must assume that the sense continues without a break from front to back. We think *ill[* almost certain and there is a space before it; it ought, therefore, to be the start of a word, presumably part of *ille*. Before *Marcellum* we expect a *nomen*, i.e. *Neratiu]m*; however, it is difficult to fit this in; it seems unlikely that there is room for the whole restoration in line 14 (see next note) and if we make a division, *Ne/ratiu]m*, this would appear to leave room for only one letter, or at most two, after *ill[* in line 13.

14. Although the left side of the tablet is preserved from line 18 onwards, there remains some difficulty in deciding how much is lost at the left in lines 14–6. In line 16 it would be easiest to suppose that only one letter is lost, but a word division *o/ccassionem* is hardly conceivable. There is barely room for any supplement after *clariss[im]um* but it is even more difficult to suppose that the whole of *uirum* was written at the beginning of line 15. We are sure that there is not room at the beginning of line 14 for the whole of *Neratiu]m* (see previous note) and we think that the best solution would be to read *Luciu]m*. The use of *praenomen* plus *cognomen* for men from the higher classes is commonly found in Cicero's letters, see J.N. Adams, *CQ* 28 (1978), pp.145–66, esp.153–4. We might then take *ill[lum* in line 13 with this as meaning 'the well-known Lucius Marcellus', cf. Cicero, *Verr.* ii.5.84, *ille uir clarissimus summusque imperator M.Marcellus*; however, we are not entirely happy with such a use of *ille* in this context; it ought perhaps to imply that Marcellus has already been mentioned, and there seems to be nowhere in lines 2–12 where this can have occurred.

Marcellum: the reading of the *cognomen* is beyond any doubt and is the key to the restoration and interpretation of lines 14–5. The man must be a governor, as *consularem* in line 15 shows, and the only possible person is L.Neratius Marcellus, who is attested in office on 19 January, 103 (*CIL* 16.48); he agreed to a request by Pliny to grant a tribunate to Suetonius (Pliny *Ep.* 3.8), which was then transferred to a kinsman. For a full treatment of the evidence for his career see Birley, *FRB*, pp.87–91, with citation of the Vindolanda text. This is the only piece of evidence in the tablets which helps to corroborate the date for the collection which is inferred from the archaeological date (see pp. 19–20, 50).

15. *consularem*: this is commonly used in the sense of 'governor' by Tacitus and other writers (see Birley, *FRB*, Appendix I). Its use in documentary sources is normally thought to be rather later, see H.-G. Pflaum in *Recherches sur les Structures sociales dans l'Antiquité classique* (CNRS, 1970), pp.170 ff., putting its earliest occurrences in the reign of Marcus Aurelius. Our Vindolanda example is therefore a very early use; but note the use of the Greek equivalent *ὑπατικός* for Bradua, who governed Britain late in Trajan's reign (*ILS* 8824a, see Birley, *FRB*, pp.92–4 and Appendix I).

15–8. Although more than half of the text is preserved at this point, we have not succeeded in producing a reconstruction which gives an entirely satisfactory sense. After *quar* it would be easy to read *u*, i.e. *quary]m*, but we do not see what this could refer to or how it could fit in the sentence. We therefore prefer to suppose that most of this apparent *u* is a curve completing *r*,

with a trace of an indeterminate letter following; this would suit *e*, and we suggest reading *quare* [and regarding this as the start of a new sentence. After *ut* in line 16 it would be possible to read *i*; but this involves ignoring an apparent cross-stroke which, if taken seriously, points to the reading *f*. In line 18 *sua* [p]raesentia is on two fragments, but we do not think the reading as a whole is in serious doubt. *sua* creates a problem, especially with *illius* in the next line. It seems inevitable that we should take both words to refer to Marcellus; if so, it is certain that they fall in different clauses or sentences, hence our suggestion that a new sentence began with *quos* in line 18. But it is also essential for Marcellus to be the subject of the sentence or clause in which *sua* [p]raesentia occurs. We are reasonably confident that this phrase is to be taken as an ablative in the sense 'through his helpful (powerful, opportune) presence'; for this meaning see *OLD* s.v. 2a, referring to Velleius 2.92.2, *aberat . . . Caesar circumferens terrarum orbi praesentia sua pacis suae bona*. The sense might be something like 'he offers this opportunity to win gratitude for yourself by helping your friends through his powerful presence' which could be represented by a reading such as: *quare* [dat / oc]casionem nunc ut [flaoris sit gra/ti]a tibi amicorum do[tes augendo] / *sua* [p]raesentia. *occasio* followed by *ut* is well attested, see *OLD* s.v. 1a; *amicorum dotes augendo* would mean 'by fostering the talents of your friends' see *OLD* s.v. *dos* 3.

18. *tu*[: *t* is certain, *u* probable. This may, of course, be the pronoun, but we allow the possibility, as our tentative translation implies, that it was part of *tueor*, e.g. *tu*[eris.

19. *illius*: it is not easy to see how to fit this in. As remarked above, it is most likely to refer to Marcellus. Possibly we should supply *pace* or a similar phrase which, with *tu*[eris, would satisfactorily fill the space. For *pace illius* meaning 'with his permission, approval' cf. *OLD* s.v. *pax* 3a.

habere[: of the letter before the break only a very slight trace remains; this would suit *e* and *habere* seems the only possible reading in the context. It may have been followed by *rem* or *res*.

20. *quomodo*: *d* looks more like *b* but this is an illusion induced partly by the tail of *s* from *scio* in line 19 and partly by a slight loop at the end of *d*, for which cf. the first *d* in *Vindolanda*, lines 24–5.

uoues: we find it impossible to decide between *uoues* and *uoles*. Palaeographically both are suitable, with *uoles* being perhaps a slightly preferable reading. If the general sense and sentence-division is as we have indicated, we can see no possible justification for the future tense, especially with *habere* in the previous line, and for this reason we have printed *uoues* in our text. Although the word with the meaning 'wish' has a poetical ring, the noun *uotum* is common enough in this sense and indeed is found in line 9 of the present letter. Prof. C.P. Jones has drawn our attention to the use of imperatives with a future tense referred to in Kühner-Stegmann, *Ausführliche Grammatik der lateinischen Sprache*³, i, pp.196–7 section (b), as well as to Pliny, *Epist.* 1.20.25, *quam uoles breui epistula sed tamen scribe*; cf. 3.6.5 and 4.11.16. This suggests an alternative way of understanding this passage, namely to read *uoles* and take it with what follows; we should then presumably have to abandon *rem/res* at the end of line 19 and supply here a conjunction to begin the next sentence, supplying an object for *habere* in the lacuna at the end of line 18. The whole might then mean something like 'Of those whom you assist very many, I know, enjoy his support. So, just as you wish, fulfil what I expect of you'.

21. The reading of the end of this line, where the letters are partly broken and partly lost at the top, is problematical. The type of word or words we should look for depends principally on how we read the last two letters. If we read the last letter as *r*, we should no doubt think of an adverb ending *-ter*, although *e* before *r* is not an easy reading. It might be possible to read the last letter as *m*, but then we would have to assume that all trace of the final diagonal stroke has disappeared; it would be possible to read *u* before this, suggesting an adjective ending *-um* and agreeing with *me*.

22. *amicis*: for the form of the *a* see p. 61.

instrue: for the use of this verb with the object as people rather than things cf. Pliny, *Ep.* 10.28, *Maximum libertum meum recte militibus instruxisti* and Tacitus, *Ann.* 14.52, *satis amplis doctoribus instructus maioribus suis*.

23–4. *militiam . . . iucundam experiri*: a remarkable expression reinforced by the unusual word order, see above, p. 72.

24–5. *a Vindolanda*: for the use of the preposition see above, p. 72. The correct form of the Roman name for Chesterholm, which is slightly garbled in the literary sources, had already been

	duo· etsubligarioru [	10	]ontibernaescumquibus[
5	duo solearumpariadu[		]ptofelicissimusuiuas [
	<i>traces</i>	Back →	<i>traces</i>

RECONSTRUCTED TEXT

i

.
traces

→ ram tibi paria udon[um
 t̄ ab Sattua solearum [

.

5 duo solearum paria du[o
traces

ii

.

]um salutare [

]ndem Elpidem Iu[

]enum Tetricum et om[n]es

10 c]ontibernales cum quibus [

o]pto felicissimus uiuas. uacat [

Back → *traces*

TRANSLATION

“. . . I have sent (?) you . . . pairs of socks from Sattua two pairs of sandals and two pairs of underpants, two pairs of sandals . . . Greetndes, Elpis, Iu. . . , . . .enus, Tetricus and all your messmates with whom I hope that you live in the greatest good fortune.”

1. Only one long descender (*r* or *a*) and the feet of two or three letters survive from this line.

2. *ram*: we are now much more confident of this reading than in the *editio princeps*. We regard *r* as certain and *a* as very probable (both strokes of the letter are in fact visible and the apparent horizontal stroke joining them to *m* is presumably not ink). This may well be a pluperfect with the force of a perfect, a use which is paralleled in *P. Oxy.* 32.4–6, *iam tibi et pristinae commendaueram Theonem amicum meum*, and the obvious restoration would be *miseram*. Another possibility, which would refer to the intention of the writer, is *afferam*, cf. *CPL* 305.13 ff., *dic Serapiadi si uult (denarios) xv accipere afferam illi* (l. *illi*).

paria udon[um: cf. *CPL* 251.23 ff., *rogo . . . ut mittas mihi inde caligas cori subtalare(s) ed udones par* (the writer of this letter was serving in the fleet at Alexandria). *Udones*, of which the etymology is obscure, seems to mean ‘felt socks’ or ‘woollen socks’; certainly it relates to a garment which came over the feet. *Digest* 34.2.25.4 says of them, *usum calciamentorum praestant*; Martial 14.140 says of *udones Cilicii*, *non hos lana dedit, sed olentis barba mariti* (i.e. the he-goat). See also Lauffer *DP*, ad 7.47. The end of this line will have contained a number word. In the *editio princeps* we tentatively suggested that line 3 might begin with *et*, but we no longer consider this possible. We are fairly confident that the first letter of line 3 is *t* (it does not slant sufficiently for *e* in this hand, and we are now sure that what we previously took to be the top of *e* is just part of the downstroke of *a* in the line above); the next letter might just be *e*, but we think it just as likely to be *i* (which usually has a pronounced serif in this hand). If line 3 does begin *t̄i*, then the restoration which naturally comes to mind is *uigin]/ti*, but this seems to be a very large number of pairs of socks for someone to be sending to a soldier.

3. *t̄*: see previous note.

ab Sattua: in the *editio princeps* we suggested that Sattua might be an alternative spelling for Sattia, remarking that A. Holder, *AS*, quotes numerous examples of the names Sattius-Sattia.

We recognise, however, that the well-known interchange between *i* and *u* attested, for example, in such words as *contibernales* (line 10) and *optimus/optumus* (cf. Väänänen, *LVIP*,³ pp.25–6) is not a linguistic parallel for the change here suggested. Nevertheless, the reading is certain; so we must therefore regard this either as an alternative form of the name Sattia or as a hitherto unattested proper name.

solearum [: *paria* must be supplied after the break (or perhaps *solearum[que paria]*). For *solea* see *RE* 2.1A, 2257–61 and 2.11A, 754–5. Well-preserved sandals have been found at Vindolanda (see *Britannia* iv (1973), pl. XLIB, Birley, *Vindolanda*, pp.125 f.). Dr. R. W. Davies reminded us that a relief of a legionary soldier from Britain wearing sandals is to be found in *RIB* 292 (Wroxeter). We can also cite a tablet from Vindonissa which has the instruction, *soleas clauatas fac mittas nobis ut abeamus* (O. Bohn, *Anzeiger für Schweizerische Altertumskunde* n.s. 27 (1925), p.14).

4. *duo*: there is a medial point after this word like that used elsewhere for interpunct (cf. Nos. 31, 41). If it is intended as a word-divider it is very strange that it does not occur elsewhere in this letter (but see note to line 5, below). It would be equally strange if it were intended as a punctuation mark, and perhaps (despite appearances) it is no more than an unintentional mark.

subligariorum [: presumably *paria* is to be supplied after the break. The usual nominative form is *subligar/subligaria*; on this form of the genitive see J.N. Adams, *BICS* 22 (1975), pp.20–1. This is an undergarment worn on the lower half of the body, see *RE* 2.IV A, 481–2 and cf. Pliny, *NH* 12.59 (*subligaria* worn by workmen in the frankincense factories in Alexandria).

5. It is possible that there is a medial point after *duo* (see note to line 4) but it is less distinct than that in line 4 and probably ought not to be taken seriously.

6. The possible traces of ink at the bottom of the fragment were not noted in the *editio princeps*. It is difficult to be quite certain of them since the photograph suggests that there is still some dirt adhering in this area. The clearest traces seem to be at the left-hand side. It should be noted that, as a consequence of this addition, the line-numbering of the text from this point onwards differs from that in the *editio princeps*.

7. *şalutaře*: we are now more confident of the reading of the first six letters than we were in the *editio princeps*; *alu* must be reckoned as virtually certain, as must the second *a*; although the tops of both *s* and *t* are missing, both readings are possible. The letter following *şaluta* could equally well be *a* or *r*, and we incline to prefer *e* for the letter following that (unless the apparent cross-stroke is not ink). We therefore no longer favour the restoration *saluta amicos meos*, suggested in the *editio princeps*. For the preceding word we cited *CPL* 255.23, *c[r]ebrum salutat te Claud[i]us*, noting that the first word is doubtful. What follows will then be the names of individuals to whom greetings are being sent. It would seem more natural for the writer to have separated each name from the one following by using *et* (for a list of names in Greek without consistent use of the copula see *P.Oxy.* 2435 verso. 35 ff., perhaps based on a Latin original).

8. *şndem*: presumably another name. Neither *euşndem* nor *taşndem* is attractive.

Elpidem: the reading is secure and can hardly be other than a proper name. *Elpides* is very poorly attested (*P.Flor.* 64.5 in *BL* II). The Romans regularly use the name *Elpis* or *Helpis* (sometimes Latinized as *Elpidius* or *Helpidius*), see H. Solin, *Beiträge z. Kenntnis griechischer Personennamen (Soc. Scientiarum Fennica, Commentationes Humanarum Litterarum* 48, 1971) i, pp.111, 115–6, who cites *Helpis* as the normal form in the imperial period. The regular genitive form is *Elpidis* so *Elpidem* would be quite acceptable as an accusative. In Greek the name is normally, but not always, feminine (see O. Masson, *ZPE* 16 (1975), p.36 and 20 (1976), p.232); the Romans used it as a masculine name (Solin, *loc.cit.*, cf. Pliny, *NH* 8.57, *Elpis Samius natione*) and it is no doubt masculine here. It is perhaps surprising to find a Greek-derived name in north Britain at such an early date.

Iu[: possibly *Pu*]. Presumably another name. Dark marks visible on the photograph after these letters are probably not ink.

9. *şenum*: the trace of the letter after the break best suits *r* and there is probably room here for *Seşrenum*.

Tetricum: in the *editio princeps* we read *Tetreçum* but we are now confident that the supposed cross-bar of *e* is no more than a chance mark which may not be ink, and that the correct reading is *Tetricum* with *i* having a marked serif at the top (cf. *uiuas*, line 11).

10. *contubernales*: the spelling with *i* is common in inscriptions, see the list in *TLL* s.v. and cf. Väänänen, *LVIP*³, pp.25–6. The expression is commonplace in the closing sections of letters, cf. e.g. *CPL* 251.61–2, *saluta omnes contubernales nostrous (sic)*; and since the Vindolanda text is from a military environment it should be taken quite literally as the members of the addressee's *contubernium* (for which see Vegetius 2.13, *contubernium autem manipulus uocabatur ab eo, quod coniunctis manibus pariter dimicabant*). It is probable that nothing is lost after *omn[es]*; if a supplement were required *meos* or *tuos* would suit.

11. *opto*: cf. *P.Oxy.* 32.28–30. Since our note in the *editio princeps* this latter text has been improved by J.F. Gilliam, *BASP* 13 (1976), pp.53–4, *opto te felicissi[mum] . . . ben[e ualere]*. The expression is commonplace, cf. No. 22.14–16. For the use of *opto* + subjunctive we may compare *RMR* 98.2.3, *opto bene ualeatis*.

uiuas: the expression *felix uiuas* is common on rings and drinking-cups (see *TLL* s.v. *felix*, col.444.9 f. and Gilliam, *loc.cit.*) but we have found no example of the superlative or of the addition of *opto* (the fragility of *ILS* 6870, *[opt]amus te felicissimum be[ne uiue]re*, is immediately obvious).

39

Inv.no.129

Plate VIII, 3 and 4

Unpublished

References: Birley, *Vindolanda*, pp. 153–4,
pl. 78Bowman-Thomas, *Historia* 24
(1975), p.474

Layer 6

18.9 × 3.4 cm

Part of a diptych, scored and folded, with the main text of the letter on the inner faces. The two broad V-shaped notches cut in the left and right-hand edges are aligned and must have functioned as anchors for a binding cord. The format is the normal one for a letter, with the text written in two columns and the address on the outer face of the right-hand portion. The part which survives is the middle section of the left-hand column and the feet of a few letters from the end of the right-hand column; the latter was clearly quite short because the majority of the right-hand section is blank (though defaced by faint offsets from the writing on the left-hand side, cf. No. 21, introductory comments). It is noteworthy that, unusually, the left-hand piece also has writing on its outer face; there are traces of five lines, much abraded and written across the grain. This probably has no connection with the letter, but is a casual notation of some kind. We have not attempted a transcript. It is worth emphasising that this is one of the very few substantial texts from the later archaeological context (*ca.* A.D.105–15).

The text was described briefly in Birley, *Vindolanda*, pp.153–4 (see line 4 note). The main points of interest in the letter are the reference to a gift of fifty oysters and the occurrence of an apparently new place-name, from which the oysters were sent. The letter is addressed to a *decurio* named Lucius. We are unsure what, if any, connection he had with the unit serving at Vindolanda. We hesitate to connect him with *cohors viii Bataurorum* (which we think was *equitata*) because of the archaeological date which must be assigned to this tablet (see above). We have suggested that by this time the Batavian cohort may have been replaced by *cohors i Tungrorum* (which was not *equitata*), see above, p. 48.

The writing is very clear, even to the naked eye. The lines in column i scarcely overrun the central fold. The hand is neat and regular with well-formed letters made with thick strokes. *i* regularly has a serif at the top right; *r* appears with a short and a long tail (the latter curling emphatically to the left); *h* has two short verticals and a cross-bar (see above, p. 64); *f* has a pronounced flourish at the top. There are several ligatures, e.g. *la* in *epistulae* (line 1), *ea* in *meae* (line 2), *cus* in *amicus* (line 3), *ia* in *ostria* (line 3). There may well be a conscious attempt in some places (especially line 3) to leave small spaces between words, which we have tried to indicate in

the diplomatic transcript. It is noteworthy that the address, although written in large letters, is not in the elongated style normally used for addresses in these tablets.

DIPLOMATIC TRANSCRIPT

→	quodestprincipium epistulae meaeetfortemesse acordono uis amicus missit mihi ostria quinquagintaquo uelocius fir	].[...].ar.....[uacat
	Back ($m^2?$) → lucio decurion[($m^3?$)].,teri	

RECONSTRUCTED TEXT

i

→ quod est principium epistulae
 meae te fortem esse. a Cordonovis
 amicus missit mihi ostria
 quinquaginta. quo uelocius fir

ii

5].[...].ar.....[
 uacat

Back ($m^2?$) → Lucio decurion[i]
 ($m^3?$)].,teri

TRANSLATION

“ . . . which is the first point of my letter (to express the wish ?) that you are vigorous. A friend sent me fifty oysters from Cordonovi. In order that . . . more speedily . . . (2nd hand?) To Lucius, decurion . . . ”

1. It is rather surprising that there is no sign of the bottoms of letters in the preceding line of writing, but the writer has allowed a fair amount of space between lines. We suppose that, preceding the clause which begins with *quod*, there stood a verb on which the phrase *te fortem esse* depends.

2-3. *Cordonovis*: this must be taken as a place-name. *Cordono*, as a name, seems equally plausible, but this would leave the first three letters of the next line (which cannot be read in any other way) impossibly isolated. We have not been able to identify the place. *Cordanum* is the name of an island at the mouth of the Gironde (Corduan) which appears in the Ravenna Geographer and is an appropriate place from which oysters might come. Professor A.L.F. Rivet was kind enough to write to us in answer to our enquiry: ‘-dono for -duno is so common that, assuming an origin in the Celtic provinces, I would certainly expect the place to be *Cordanum* or something similar . . . If one assumes an origin in Britain and looks for a place suitably situated on an estuary, a tempting possibility might be Ptolemy’s *Dounon Kolpos* (Tees Bay, and Ptolemy may well have got it wrong). There ought to have been a fort, or at least a settlement, somewhere here but none has been identified; so it is a very long shot.’ Unfortunately, the letters -uis at the beginning of line 3 seem to rule out this suggestion and *Cordanum*. We are therefore compelled to regard *Cordonovi* (-uae) as a hitherto unattested place-name. On the use of the preposition with place-names see above, p. 72.

3. *missit*: this must be taken as *misit* but gemination after long *i* is unexpected; for a possible explanation see above, p. 73.

ostria: for the form *ostria* instead of *ostrea* see *Ed. Diocl.* 5.6 (cf. above, p. 74). For a gift of oysters we might compare Ausonius's acknowledgement of thirty (*Ep.* 15 [Prete]) which he regarded as rather stingy (we are grateful to Mr. R.P.H. Green for drawing our attention to this reference). Oyster shells are not uncommon at military sites; for a summary account of the evidence see R.W. Davies, *Britannia* ii (1970), pp. 128–9, with references to several sites including Benwell and Waddon Hill in Britain and Vindonissa in Switzerland. Oysters could evidently be transported over considerable distances inland and could also be transferred to new habitats (Pliny, *NH* 32.61, *gaudent et peregrinatione transferrique in ignotas aquas*; and Athenaeus, *Deipn.* 7^d for the story that they were conveyed to Trajan whilst on campaign in Parthia). The large number of oyster-producing areas in the Roman period (see Pliny, *NH* 9.169, 32.62–3) prevents us from narrowing down the possible identification of the place of origin (see previous note). Within Britain, Richborough (Rutupiae) was particularly noted (cf. Juvenal 4.140 with the additional references given in the edition by Mayor, *ad loc.*), but they are attributed to the *Britannica litora* generally by Pliny, *NH* 9.169, cf. 32.62. On oysters in the Roman cuisine see in general André, *ACR*, p. 108, A.C. Andrews, *CJ* 43 (1948), pp. 299–303.

4. *quinquaginta*: the description of this text in Birley, *Vindolanda*, p. 154 implied a reading of *quadraginta*, which was an error induced by a piece of dirt on the wood which, on an earlier photograph, looked like ink. For the number, compare the reference in Ausonius (see previous note); a gift of fifty might be quite generous in military circles, as opposed to affluent fourth-century Bordeaux.

fir: the most obvious restoration would be some part of *firmus*, *firmo* or *firmitudo*. The writer may well be referring to recovery from some minor complaint. Our text takes the last three words in this line as the beginning of a new sentence, but it is possible that we should not assume a full stop after *quinquaginta*. The writer would then be saying that the gift of oysters was intended to aid a speedier recovery; Pliny, *NH* 32.64–5 gives a list of the supposed medical properties of oysters, and Galen (Kühn) xii, p. 345–6 writes of the use of the ash made from their shells; cf. in general Andrews, *op. cit.* in previous note.

5. One might expect to find the closing greeting here. We have only remains of the bottoms of letters. It might be possible to read at the end *clariſſim[e]*; less probable is *k]ariſſim[e]* since we should expect to see something of the *k*. Below this are offsets from the left-hand column.

6. *decurion[i]*: we are unsure whether there is a very faint trace of the final letter on the photograph. The addressee, who does not appear elsewhere in the tablets, was presumably serving either in an *ala* or a *cohors equitata* (see the remarks on p. 48).

12 .]. *teri*: the writing slopes up to the right (cf. Nos. 42, 45) and is almost certainly in another hand. The reading is fairly clear but we cannot explain it.

40

Inv.no.180.i

Plate IX, 3 and 4

Unpublished

Layer 8

7.2 × 3.7 cm

Part of the right-hand side of a diptych containing seven lines of a letter on the front, and an address to a *praefectus* whose name is uncertain (see note to line 8) on the back. Little of the content can be recovered, but it is worth noting the possible reference in line 4 to a trip to Rome and that in line 5 to *uiaticum*. The former is perhaps not very surprising if the person involved was an equestrian officer — which, as a correspondent of a *praefectus*, he might well be.

The ink on the tablet is rather poorly preserved and the best photograph still gives a rather blurred effect. Nevertheless, we can read enough to see that the hand was a professional competent cursive, notable for the use of long *i*, *q* with a tail to the right, and a probable example of *ui* ligature (*quitur*) in line 5.

TEXT

→]
 peruer.....[
 quos si[
 Romam petere o.[
 5 quitur uiatico ..[
 quod i si fibulaꝥ a..[
 traces

Back →]o ...urno praef(ecto)

2. *peruersum* is a possible reading.

4. Before *mam*, which is certain, are two letters of which the first is almost certainly *r*; the second letter must be a vowel and cannot be *i* (which in this hand is always a much more elongated letter), *e* or *a*; *o* and *u* are both possible, but *rumam* does not suggest any word that is at all plausible. We are therefore reasonably confident of *Romam*. Perhaps a reference to an officer making a trip to Rome.

5. *quitur*: a verbal ending, most probably, we suppose, of one of the numerous compounds of *sequor*.

uiatico: *uiaticum* is travelling-money, which was normally paid to recruits on enrolment; the pay records show that some or all of this was retained as savings, see Watson, *RS*, pp.44, 102, 105, 150, *RMR* 70, 73. There seems to be no reason why officers should not also have received *uiaticum*.

6. We might read *quod fit si fibulaꝥ a..*]; the lack of space before *si* is against the idea that this begins a new sentence.

8. We are certain that the name cannot be either *Ceriali* or *Crispino*. We are reasonably confident of the last three letters of the *cognomen*; before these we may have *e* or *u*. A name such as *Liburnus* would suit the traces. The attestation of another prefect at Vindolanda could be explained by the supposition that he was a predecessor or successor of either *Cerialis* or *Crispinus*.

41

Inv.no.65
 Plate VII, 5
 Unpublished

Layer 8
 7.0 × 4.0 cm

Reference: P.J. Parsons, *JRS* lxix (1979),
 p.131, n.43

A small fragment with the remains of five lines of a letter. It is possible that the tablet is complete at the top and right, in which case we must have the top of the right-hand column of a letter. We would then expect to see some trace of the address on the back, but it appears to be blank; it is, however, possible that it was written on the lost lower part of the tablet. Most of the words are well separated and the writer uses interpunction more consistently than any other in this collection (see Parsons, *loc.cit.*). The hand is a competent cursive in which the tall *c* (cf. *ratiunculis* in line 4) and the tendency for the cross-bar of *t* to slope downwards (e.g. *tamen* in line 2 where it makes a ligature with *a*) are noteworthy. There is a remarkable ligature in *erat* (line 1) in which *a* and *t* are joined by the addition of a link stroke.

The text contains a reference to the purchase of, and accounting for, some objects at a price of three *uictoriati* each (see line 3 note).

TEXT

→]· offici · erat·inposuisse
]uilitatis · est · quas·tamen
]iternis · uictoriatis
]ntatas · e, ratiunculis
 5][...] [...] bimo

2. *uilitatis*: this could be supplemented as *ci]uilitatis* or left as it stands. The former might be thought to fit with what precedes and the latter with what follows. Since we have not enough of the text to attempt any articulation, we cannot decide which is more likely.

3. The letter before *iternis* is difficult; its second part resembles *h* but the first *hasta* is missing at the top (where it is perhaps obscured by dirt). This would suggest *mi]hi ternis* but in this hand we would expect an interpunct between the words; there is no clear sign of one in the photograph, but it is just possible that it is there.

uictoriatis: Cicero uses the phrase *ternos uictoriatos* at *pro Font.* 9.19. The *uictoriatos* is a coin worth half a *denarius*, see *RE* VIII A 2, 2542 ff. Cf. Pliny, *NH* 33.46, *is qui nunc uictoriatos appellatur lege Clodia percussus est* and Quintilian, 6.3.80, *ut Gabba, dicente quodam uictoriato se uno in Sicilia quinque pedes longam murenam emisit* (we are indebted to Mr. M.H. Crawford for these references).

4. *]ntatas*: we assume that the objects purchased are represented by *quas* with which *]ntatas* agrees. There are many possible supplements, e.g. *arge]ntatas*, 'silver-plated'. What follows is difficult; *e* looks inescapable and the next letter looks most like *s*, but it is difficult to explain *es*. It may be just possible to read *ex*.

5. At the end *]..limo* is also possible.

42

Inv.no.34

Plate IX, 5, 6 and 7

Unpublished

References: Birley, *Vindolanda*, pl. XIII
 (wrongly described as 'no. 29')
 Bowman-Thomas, *Historia* 24
 (1975), p.474

Layer 8

7.2 × 2.6 cm

7.2 × 2.9 cm

Two fragments of a diptych containing parts of two columns of a letter in a bold and interesting hand. Unfortunately not enough of the content survives to enable us to reconstruct the sense of the letter, nor are we able to assign it to any of the identifiable archives. The key to its assignation must lie in the writing on the back of the right-hand portion; but this is so lacunose and faded that we have been able to make little sense of it. Apart from the letter-forms, the tablet is of interest for the fact that it has two tie-holes and one notch in each margin (see above, p. 37) and contains what must be a reference to Vindolanda (line 3). The hand is of considerable interest and has no close parallel in the tablets (except perhaps No. 45). The most remarkable letter-form is *p* with a loop at the top (line 3); *r* appears in a form which clearly shows the derivation of the cursive form from the capital; note also the stunted forms of *e*, *b* and *l*, *i* with a noticeable foot and *a* made in three rather than two strokes (especially in the exaggerated example in *felicissima*, line 6). It is perhaps fair to say that this has a more archaic look than most scripts in the collection.

TEXT

i

→ que[
 res scribere u[
 peruenisses uin[dolandam
 rog[.]c[.].....[

ii

5][...].....o
]is felicissima
]na et nos amare
]..s uacat?

Back → ..[.]au...
 10]...inna

1. *qui*[is possible, but we have preferred *que*[because elsewhere in this hand *i* has a considerable foot.

2. *res* is perhaps more likely to be a second person singular verbal ending than the noun, but there are obviously many possibilities.

3. The restoration of *uin[dolandam* seems inescapable; for the absence of a preposition see above, p. 72. This would make the line rather long, but if the leaf were as broad as No. 39 there would be no difficulty in accommodating it. This will then be the second occurrence of the place-name in the tablets (see No. 37.24–5 and note).

4. Since *b* and *l* are short letters in this hand, we think either less plausible than *r* for the first letter; *o* is probable for the second, and the third could equally well be *c*, *g* or *s*.

5–8. The sense of this passage might tentatively be restored somewhat as follows:]...opto / ut utar]is felicissima / fortu]na et nos amare / te cre]das.

9. The writing is on the back of the right-hand portion, as is normal, and appears to be by the same hand as the text on the front. *pr* would fit the first traces in the line; if it were taken as *pr(aefecto)* we would then expect the name of the addressee to have stood in a previous line and the name of the unit to have followed. But the traces following cannot be read as the name of either of the military units attested in the tablets (*cohors viii Batauorum* and *cohors i Tungrorum*).

10. The traces of letters written with an upward slant (cf. Nos. 39, 45) may perhaps be the name of the sender of the letter, e.g. *ab Erinna*. We are not sure what to make of the implication here that the letter was sent by a woman but, of course, it might still have been *written* by a man. The masculine name *Cinna* has the appropriate termination but this cannot be read here.

43

Inv.no.55

Plate X, 4, 5 and 6

Unpublished

Reference: Thomas, *Scriptorium* 30
 (1976), p.41, pl. 6a

Layer 8

5.3 × 1.9 cm

6.3 × 2.0 cm

Two fragments of a diptych containing parts of two columns of a letter and an address on the outer face of the right-hand portion. The names of both the writer and the addressee survive only

in part, but there is enough to make it clear that this letter has no connection with any of the three identifiable archives. The content of the letter is not recoverable, but the tablet is not without palaeographical interest. The letters are bold, slightly right-sloping and made with some style. Note the marked serif on *i* in line 4, the ligature *us* (line 1, twice) and *am* (*piscam*, line 4); possibly *n* ligatures to following *u* in line 1 and to following *s* in line 6. On the form of *a* in line 5 see the note. The back may be in the same hand and is written in the script normally used for addresses in these tablets (see above, p. 68).

TEXT

i

→]ius Fontanus [Ni..o su]o
[salut]em
traces

ii

5 piscam te p.[
quam me ips[um
instruere me[

Back →]i^{ss}inio Ni..o

1. The *cognomen* Fontanus is too common to help us identify the writer. As for the *nomen*, the trace at the extreme edge of the fragment allows, but does not enforce, a reading of *n* (e.g. Annius); but there is no means of measuring the extent of the loss at the left. The final *o*, which must belong to *su]o* indicates that the left-hand column must have overrun the central fold.

4. Presumably we have the first person singular of the future indicative or present subjunctive of *concupisco*. *TLL* s.v. gives examples of this verb with accusative and infinitive. The general sense might be something like 'I am so well disposed to you that I eagerly desire your success (or welfare) more than my own.'

5. *quam*: the *a* appears to be written with a cross-bar whereas the other two examples in this text have the normal form in two strokes. For this form see above, p. 61.

6. *instruere*: cf. perhaps No. 37.21-2, *me . . . amicis ita instrue*.

7. We must have *nomen* and *cognomen* here. Our reading of the remains of the *nomen* assumes that the second *s* was written over *i*; we could read *ssunio* (or *scunio*) but the indices of Schulze, *LE* reveal no name with this ending which would fit with the first surviving trace, which can hardly be anything but *i*. The possibilities appear to be Lis(s)inius and Dis(s)inius. For the *cognomen*, the remains are just compatible with a reading of *Nigro*. Of the less common names listed by A. Holder, *AS*, only Nistus and Niccus seem palaeographically possible (of these the latter would be preferable; it appears in *CIL* 13.6175 (Upper Germany), cf. also Nicus in *CIL* 12.5686, 637).

44

Inv.no.21
Plate VI, 5
Unpublished

Layer 8
8.4 × 1.9 cm

A fragment of a letter which is of lexicographical importance since it offers testimony for a word found only once elsewhere. The back of the fragment is blank. The hand is a fairly clear and ordinary cursive. As far as the exiguous content is concerned, it should perhaps be compared with No. 38 which refers to the despatch or purchase of various items of clothing.

TEXT

→
traces (?)
]sagacias duas e...[
 ...].[...].[.] cotidian[

2. *sagacias*: we are confident of the reading of this word (for the morphology see above p. 74). The files of *TLL* produce but one instance of the word *sagaceus*, Columella 11.1.21, *frigoribus et imbribus, quae utraque prohibentur optime pellibus manicatis et sagaceis cucullis*; the last two words must refer to cloaks with hoods attached to them. The word is obviously appropriate to the context of military clothing, cf. Cicero, *ad fam.* 7.10.2, *ualde metuo ne frigeas in hibernis . . . praesertim qui sagis non abundares*. In view of the location of the text in the north-western part of the Empire it is interesting that Polybius (2.28.7, 30.1) relates the use of the *sagum* to Celtic (Gallic) tribes. On military clothing in general see E. Sander, *Historia* 12 (1963), pp.144–66.

3.] *cotidian*[: only the tops of the letters survive but we are confident of the reading.

45

Inv.no.27
 Plate X, 7 and 8
 Unpublished

Layer 8
 4.5 × 2.5 cm

Three joining fragments from the right-hand section of a diptych containing two lines from the end of a letter and an address on the back. The name of the sender, Trophimus, suggests that we are probably not dealing with people of the officer class, in contrast to most of our other letters. This impression is reinforced both by the use of the word *conlega* and the misspelling *karisime*. The writing also tends to support this; it is bold and clear but can certainly not be described as elegant. Since such an exiguous amount of the letter survives we cannot be certain that both sides are in the same hand, although we think this probable. The loss of the major part is particularly regrettable since, palaeographically, the hand is of very considerable interest; no other hand in the collection closely resembles it, though there is some similarity in that of No. 42. Most striking is the ‘uncial’ form of *a* used in *karisime* (on which see above, p. 61); note that the address twice employs the normal form of this letter. Also worthy of comment are the *l* in *conlega*; the form of *e*, and *m* made in four strokes.

TEXT

→
traces
]imo karisime

Back →]....[
 ab Trophim[o
 5 conlega

1. Only traces of the bottoms of letters survive.
2. Perhaps the end of the letter, concluding with, for example, *karisime frater*. There is a space below this line with no sign of writing. For]*imo*, the supplement could be *aestimo*, *redimo* etc.
3. The second trace is a long descender, probably *r*. This may be the name of the addressee or his position or century or something similar.
4. This and the following line are written on a slant from bottom left to top right of the fragment (cf. Nos. 39, 42). The name Trophimus suggests a person of fairly low social status.

5. *conlega*: cf. P. Hib. 276 and *RMR* 81.ii.14. According to the glosses quoted in *TLL* s.v. this is equivalent to *commanipularis* — therefore a ranker rather than an officer?

46

Inv.no.40
Plate X, 9
Unpublished

Layer 8
5.8 × 3.2 cm

Three joining fragments containing parts of five lines of a letter in which the writer appears to be asking for indulgence from the addressee. The leaf is incomplete at the top, bottom and left-hand side. The fact that the lines stop short of the right-hand edge suggests that it is complete here and that we have the right-hand portion of a diptych. There is no trace of an address on the back where we would expect to find it, but since half the column is probably lost it may well have been there originally. The hand is a competent cursive, whose only feature of note is a marked space between the words.

TEXT

→].....
]am̄us rogamus
]fe tu neççsita
]..tris ignoçças
5]s..e.....
.....

1. Only the bottoms of letters are visible and they are very faded. Any reading would be pure guesswork.

3. *a]dfectu* is not certain but we think the *f* is a good reading.

4. *u]eççtris* or *n]oççtris* is possible.

47

Inv.no.39
Plate X, 3
Unpublished

Layer 8
6.3 × 1.6 cm

References: Bowman-Thomas, *VWT*, pl. x
Birley, *Vindolanda*, pl. 82
Thomas, *Scriptorium* 30 (1976),
p.41, pl. 6a

This fragment contains remains of two lines of writing which give us no clue to the content of the text. But the writing is of very great interest (see above, p. 53). The letters are elegantly formed and the writer has consistently used both thick and thin strokes of the pen. From a calligraphic point of view we can confidently describe this as the best hand in the collection. The marked space between words, even between the monosyllable *et* and the word following (line 1), is noteworthy.

TEXT

→ bunt et inpo.[
.....itjauit a.[
.....

1. The right-hand stroke of the first letter resembles *r* in some hands; we have preferred to read *b* because of the way in which the left stroke of the letter hooks to the right, which is characteristic of the 'panse' in *b*. But we have so little of the hand for comparison that *runt* cannot be ruled out as a possible reading. Either reading will be a verbal ending.

2. *uitiauit* is a persuasive reading. Before it only the tops of letters survive.

48

Inv.nos. 44 + 46

Plate XI, 6

Unpublished

Layer 8

8.5 × 1.6 cm

Two joining fragments with parts of three lines of a letter. No connected sense can be recovered from the small amount of text. The back is blank. The hand has a somewhat cumbersome look; note *a* in three and *m* in four strokes, and *n* with the cross-stroke starting well to the left of the first *hasta*. There may be an example of the medial point after *facis* in line 2 and perhaps also after *um* in line 1; but these marks are not necessarily ink.

TEXT

→]..u.n.um.....et ego[
]non magni facis ne pud[
].....e a tetur..[

1.] *quantum* is a possible reading at the beginning of the line.
2. *non magni facis*: see *OLD* s.v. *magnus*, 4b. What follows is presumably a case of *pudor* or a tense of *pudet*.
3. Only the tops of letters survive at the beginning of the line. The most promising reading for what follows is *captetur*.

DESCRIPTA

49. Inv.no.25 Layer 8
 4.0 × 1.3 cm
 Front: part of two lines of which the second reads]*credism*[(e.g.]*credis m*[*ihi*). Back: middles of letters in an address script. One other separate scrap has the top of what appears to be *a*.
50. Inv.no.32.iii Plate XI, 2
 2.8 × 1.7 cm Layer 8
 Front: remains of three lines of which the second reads]*rogo quam*[. Back: remains of three letters in an address script.
51. Inv.no.38 Plate XI, 5
 8.8 × 1.1 cm Layer 8
 Front: remains of two lines,]...*a quicq*[/]*tellexcisse p*[(*in*]tellexcisse ?). Back: blank. Traces of burning at the right-hand edge. Perhaps belongs with No. 52.
52. Inv.no.49 Layer 8
 5.8 × 1.4 cm Plate XI, 1
 Front: remains of three lines, (descenders only) /]*hoc confiteor*[/]*e.s factum*[. Back: blank. The hand is very similar to that on No. 37 but no connection can be established. Compare also No. 51 with which this piece may belong.
53. Inv.no.58.i Layer 8
 3.8 × 1.5 cm Plate XI, 9
 Front: traces of two lines,]...[...].[/]*rque domine* (perhaps]*erque*). Back: blank.
54. Inv.no.58.iii Layer 8
 2.8 × 1.2 cm
 Front: remains of three lines,]*atum esse* [/]*s comme*.[/ (tops only). Back: blank. Perhaps *litterae commendaticiae* (cf. No. 22).
55. Inv.no.61.ii Layer 8
 6.1 × 1.0 cm
 Two joining fragments with parts of two lines. Front: *rogo te domi*[*ne /...iss a dignum*[. Back: blank. Probably *litterae commendaticiae* (cf. No. 22).
56. Inv.no.73.i Layer 8
 4.0 × 1.7 cm
 Two joining fragments with traces of two lines on the front:]...*de te re*[/]*fuit*...*r* ..[. Back: blank.

57. Inv.no.80 Layer 8
6.7 × 3.4 cm Plate XII, 5
Three joining fragments with remains of two lines on the front: *facto* ...
(perhaps .. *benefacto*) / *persequar*. Back: blank.
58. Inv.no.83.i Layer 8
3.8 × 2.0 cm Plate XI, 10
Remains of six lines on the front: *fer*[/ *ipsi*[/ .[.]..[, and at the left from bottom to top
across the grain,], *alequi*.[/], *ant*..[/].. Back: blank.
59. Inv.no.83.ii Layer 8
4.0 × 0.8 cm
Two joining fragments with remains of two lines on the front:]*reſcribe uide*..[(perhaps
uideb.[/] *a te ſaluſat*! [(perhaps the first letter is the end of a woman's name). Back: blank.
60. Inv.no.83.iii Layer 8
3.2 × 1.4 cm
Two joining fragments, with some deletion, written by a hand strongly resembling that of
No. 37. Front: (traces) /], *enim*[/] [[*cetera*]] [/] *quem* [. Back: blank. For the hand see also
Nos. 51–2, 83.
61. Inv.no.88 Layer 8
5.2 × 1.2 cm
Front: perhaps]*karisime*. Back: *no pra*[/ *qoh* [...]. This is presumably an address; it is
not in the normal address script, but an ordinary cursive. The name is definitely not
Crispino; perhaps the addressee of No. 40. The name is presumably followed by *pra*[*ef*(ecto)
with the name of the unit in the following line.
62. Inv.no.92.i Layer 8
2.9 × 0.9 cm Plate XI, 7
Front:] *salutem*. Back: blank.
63. Inv.no.93.i Layer 8
2.8 × 1.9 cm
Traces of two lines on the front:]*quod* / (tops of seven letters). Back: blank.
64. Inv.no.115 Layer 8
2.0 × 1.7 cm
Front:], *utem* [(presumably *s*] *alutem*) /] *mearum* [, (or] *aremu*.. [). Back: blank.
65. Inv.no.120.i Layer 6
2.5 × 1.8 cm Plate XI, 3
Parts of two lines on the front:], *utuisdo* [/], *xillarum* [, perhaps *ut uis, do*[mine, or *mutuis*
do[nis; in line 2 presumably *u*] *exillarum*. Back: blank.
66. Inv.no.170 Layer 10
4.6 × 1.2 cm
Parts of three lines on the front: (traces of bottoms of letters) /], *nt et impedia*[/]..
nuntiaue.[Back: blank.
67. Inv.no.180.ii Layer 8 or 10
3.1 × 1.3 cm
Parts of two lines on the front: *e*] *pistulis* /], *um*. Back: blank.

68. Inv.no.196
 2.2 × 1.4 cm
 3.2 × 1.8 cm
 5.9 × 1.0 cm
 Three fragments, all in the same hand. No join can be made. Front: i. beginnings of two lines, *fi*[/ ..[; ii. (bottoms of nine letters) /], *iasmexu*[/], *commun*[; iii. (bottoms of letters) / *quis fide di*[/ (tops of letters). Back: blank. Layer 10
 Plate XII, 7
69. Inv.no.10
 Broken into tiny fragments. Contains much abraded remains of 13 lines in which only odd letters can be read. Back: blank. Layer 8
70. Inv.no.117
 8.8 × 1.9 cm
 Fragment with parts of two columns of a letter, three lines in each column. Only odd letters can be read. Back: blank. Layer 6
71. Inv.no.142
 10.1 × 1.8 cm
 8.3 × 1.0 cm
 Two fragments with remains of three and two lines of a letter, much abraded. Only odd letters legible. Back: blank. Layer 10
72. Inv.no.186A
 8.6 × 2.7 cm
 Substantial remains of three lines, much abraded; only odd letters legible. Back: blank. Layer 8
73. Inv.no.8.ii
 4.0 × 1.2 cm
 Parts of two lines on the front: *]is · t*[/ *itura*[. Back: blank. Layer 8
74. Inv.no.8.iii
 2.4 × 1.1 cm
 Remains of two lines on the front: *dub*[/]]. Back: blank. Layer 8
75. Inv.no.29.ii
 4.0 × 2.0 cm
 One line on the front: *]uitalis*[, perhaps a name. Back: blank. Layer 8 or 10
76. Inv.no.29.iii
 3.4 × 2.0 cm
 One line on the front: *]antiumco*[. Back: blank. Layer 8 or 10
 Plate XI, 8
77. Inv.no.37.i
 2.4 × 1.0 cm
 Front: *adm*[. Back: *]es* in large letters (the form of *e* is noteworthy). Layer 8
 Plate XI, 4
78. Inv.no.51
 3.8 × 1.9 cm
 Part of two lines on the front: *]trictae*[/]].*nes* .[. Layer 8
79. Inv.no.52.i
 3.5 × 1.0 cm
 Part of one line on the front: *]e .nus*, perhaps a name. Back: blank. Layer 8

80. Inv.no.58.ii Layer 8
 3.0 × 0.7 cm
 Parts of two lines on the front:]..[...][/]*tuis* [. Back: blank.
81. Inv.no.58.iv Layer 8
 2.2 × 0.8 cm
 Remains of one line on the front:]*pto*.*es*[. Back: blank.
82. Inv.no.70.ii Layer 8
 3.6 × 1.0 cm Plate X, 1 and 2
 Fragment with writing on both sides, along the grain. One side has]*ssime*; the other].. *septembres* [(perhaps]*id*). If this is a letter, we may have part of the closing greeting on one side and a date on the other (perhaps the date of despatch or receipt).
83. Inv.no.83.iv Layer 8
 2.1 × 1.6 cm
 A fragment with deletions in a hand resembling that of No. 37 (see also Nos. 51–2, No. 60). Front: remains of four lines but only *uig*[in the second line is clear. Back: blank.
84. Inv.no.92.ii Layer 8
 3.4 × 0.9 cm
 Remains of two lines on the front, of which the second has:]*ceş abşel*[(e.g. perhaps *abşel[ntes]*). Back: faint traces.
85. Inv.no.120.ii Layer 6
 5.8 × 1.5 cm Plate XII, 4
 Front: traces of two lines of which the second perhaps has:]*creşcentel*[. Back: blank.
86. Inv.no.120.iii Layer 6
 2.5 × 1.9 cm Plate XII, 6
 Front: part of one line,]*suetyş*. Back: blank.
87. Inv.no.127 Layer 8
 3.3 × 1.3 cm
 Front: beginnings of two lines, *ma*[/ *di*[. Back: blank.
88. Inv.no.146 Layer 10
 7.0 × 1.8 cm Plate XII, 3
 3.1 × 1.6 cm
 Two fragments. The larger has remains of two lines on the front: (*uacat*) *domino* (*uacat*) / *co*....[. The smaller has only the tops of about 6 letters. Back: blank.

C. TEXTS OF UNCERTAIN NATURE

89. Inv.no.8.iv Layer 8
A tiny scrap with traces of a few letters.
90. Inv.no.13 Layer 8
6.5 × 2.2 cm
4.6 × 1.1 cm
Two fragments which do not join. The larger has traces of three lines of which the second seems to end *fles*. The smaller has the bottoms of letters in part of one line. Letter forms slender and fine. Back: blank.
91. Inv.no.35 Layer 8
8.5 × 5.5 cm
Perhaps an almost complete half of a diptych with traces of writing along the grain on both sides. One side has remains of possibly seven lines, the other more scattered traces. Both sides much abraded.
92. Inv.no.42 Layer 8
9.4 × 3.4 cm
Three fragments which probably join, containing exiguous traces of fine writing. Back: blank. Traces of burning.
93. Inv.no.43 Layer 8
9.4 × 1.4 cm
A fragment with the tops of five letters. Back: blank.
94. Inv.no.72 Layer 8
4.1 × 0.9 cm
Fragment with traces of two lines. Back: blank.
95. Inv.no.112.i Layer 8
3.0 × 2.3 cm
Fragment with possible traces of writing. Back: blank.
96. Inv.no.112.ii Layer 8
5.0 × 3.6 cm
Fragment with possible traces of writing. Back: blank.
97. Inv.no.125 Layer 8
2.4 × 1.2 cm
Fragment with possible traces of a couple of letters. Back: blank.

98. Inv.no.126
4.1 × 1.6 cm
Fragment with parts of a few letters. Back: blank. Layer 8
99. Inv.no.137
3.6 × 1.1 cm
Possibly traces of one or two lines. Back: blank. Layer 5A/B
100. Inv.no.160
5.5 × 2.0 cm
Faint traces of writing on one side. Layer 10
101. Inv.no.181
7.0 × 1.4 cm
Faint traces of writing on one side. Layer 8 or 10
102. Inv.no.186B
6.7 × 1.5 cm
Traces of 8 letters on one side only. Layer 8
103. Inv.no.194
18.1 × 6.8 cm
A complete diptych with much abraded traces of writing on one side of one half and on both sides of the other. Layer 10
104. Inv.no.197.
4.4 × 1.3 cm
Faint traces of writing on one side only. Layer 10
105. Inv.no.202
2.1 × 1.0 cm
3.6 × 1.6 cm
Two fragments with traces on one side only. Layer 8
106. Inv.no.53
5.3 × 1.6 cm
A fragment with a tie-hole and traces on both sides of parts of large letters apparently in an address script. Layer 8

D. STYLUS TABLETS

- 107.** Inv.no.14 Layer 8
7.6 × 2.6 cm
8.0 × 1.8 cm
Three fragments, two of which join. Front hollowed, back smooth. Traces of burning. Several lines of incision on the front and one line of heavy incision on the back, perhaps reading *dabiş*, cf. O. Bohn, *Anzeiger f. schweiz. Altertumskunde* 1925, p.195.
- 108.** Inv.no.17 Layer 6
7.6 × 6.3 cm
A thick slab of wood, smooth on both sides and with no evident trace of incision. Perhaps an incomplete stylus tablet.
- 109.** Inv.no.109 Layer 6
8.6 × 6.8 cm
Scant traces of ink on the hollowed side. The flat side has parts of six lines written in ink and diagonal lines running through the writing.
- 110.** Inv.no.19 Layer 6
14.0 × 2.3 cm
Incomplete stylus tablet with a few traces of incision on one side.
- 111.** Inv.no.20 Layer 6
7.5 × 1.6 cm
Fragment of a stylus tablet with traces of three incised lines on the hollowed side.
- 112.** Inv.no.28 Layer 6
7.8 × 5.3 cm
Stylus tablet of the same type as No. 117. Traces of incision on both sides. Both sides are hollowed and one has a seal-bearing strip, see above, p. 44.
- 113.** Inv.no.66 Uncertain
10.2 × 6.2 cm Plate XII, 1 and 2
References: Bowman-Thomas, *VWT*, pp.11, 14, pl. viii; Thomas, *Scriptorium* 30 (1976), p.39; Birley, *Vindolanda*, p.133; Bowman-Thomas-Wright, *Britannia* v (1974), p.473; Bowman, *ZPE* 18 (1975), p.238 n.3.
A stylus tablet with several lines of writing in ink on each side. Discovered near the later fort ditch; but the writing, although it cannot be read, makes it clear that it belongs to the same general period as the rest of the tablets. For the unusual format see above, p. 44.

- 114.** Inv.no.86 Layer 6
16.6 × 3.1 cm
Part of a stylus tablet with faint traces of incision on the hollowed side.
- 115.** Inv.no.123 Layer 6
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Reference: Birley, *Vindolanda*, pl. 75.
Complete stylus tablet, but no trace of incision.
- 116.** Inv.no.131 Layer 6
6.5 × 2.4 cm
Stylus tablet with possible traces of incision.
- 117.** Inv.no.2 Layer 6
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13.9 × 6.2 cm
References: Bowman-Thomas, *VWT*, pl. III, *Historia* 24 (1975), p.472.
Stylus tablet with traces of incision both sides. Both sides are hollowed and one has a seal-bearing strip, like No. 112 (see above, p. 44).

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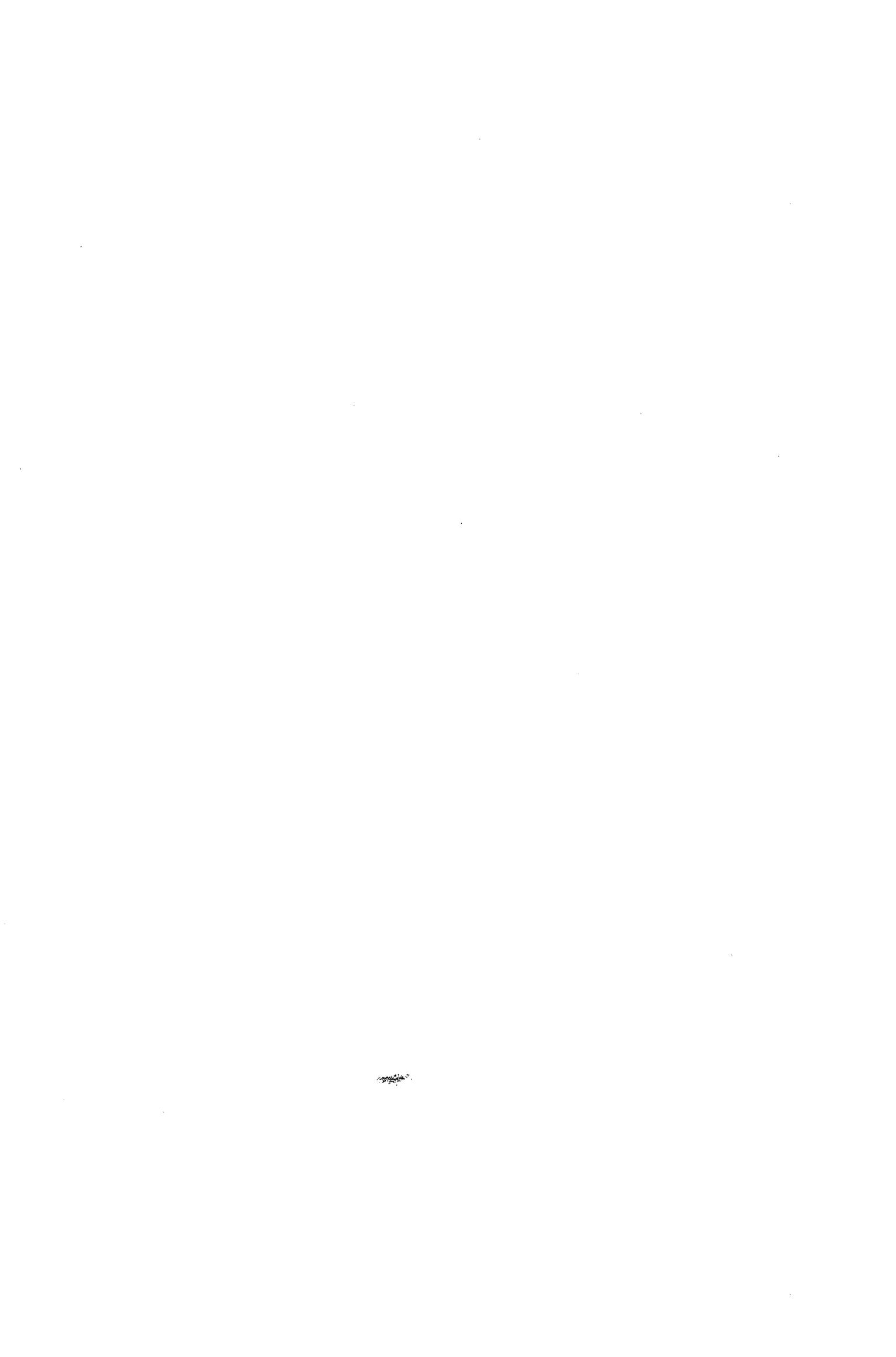
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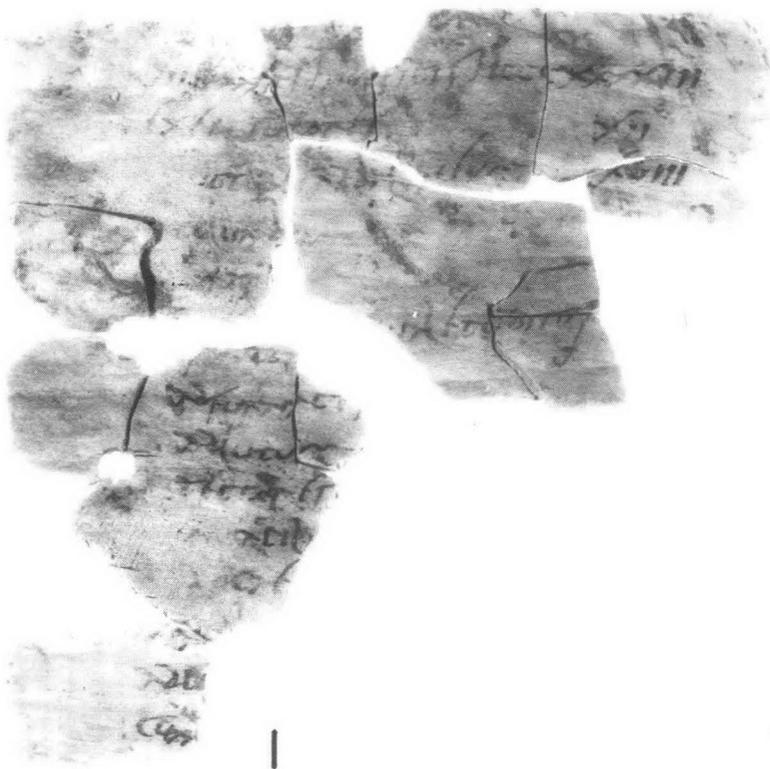
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- Cohors i Tungrorum* 47–50, 77, 117–9, 127, 129, 135, 140
- Cohors xx Palmyrenorum* 20, 46, 68
- Diet 86, 94
- Fabrica* 46–7, 77, 81
- Fors Fortuna* 86, 94
- Forts, pre-Hadrianic at Vindolanda 19–21, 47, 77
- Governor of Britain 102, 104, 117, 119–20, 130; *see also* L. Neratius Marcellus, Sallustius Lucullus, M. Ulpius Marcellus, Index VII
- Infra-red photography 26, 55
- Ink 31, 51
- Larch 29, 31, 35
- Letters of recommendation 105–6, 112
- Ligature 60–67
- Lime 37, 41, 42
- Oysters 50, 135
- Papyri 24, 26, 32, 36, 37, 38, 43, 44, 46, 51–4, 56, 59, 60, 63, 65, 66, 70, 132
- Pridianum* 77–8
- Pugillaria* 43–4
- Rotulus* 40–2, 77
- Spruce 29, 31
- Stylus tablets 20, 24, 28–9, 31–6, 42–5, 60, 70, 151–2
- Tablettes Albertini 33, 36 n.40
- Veneers 30
- Willow 28
- Wood, anatomy of 26–30



PLATES

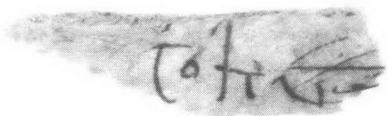




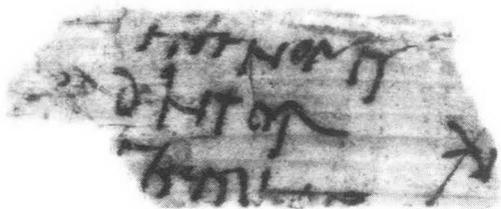
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PLATE I

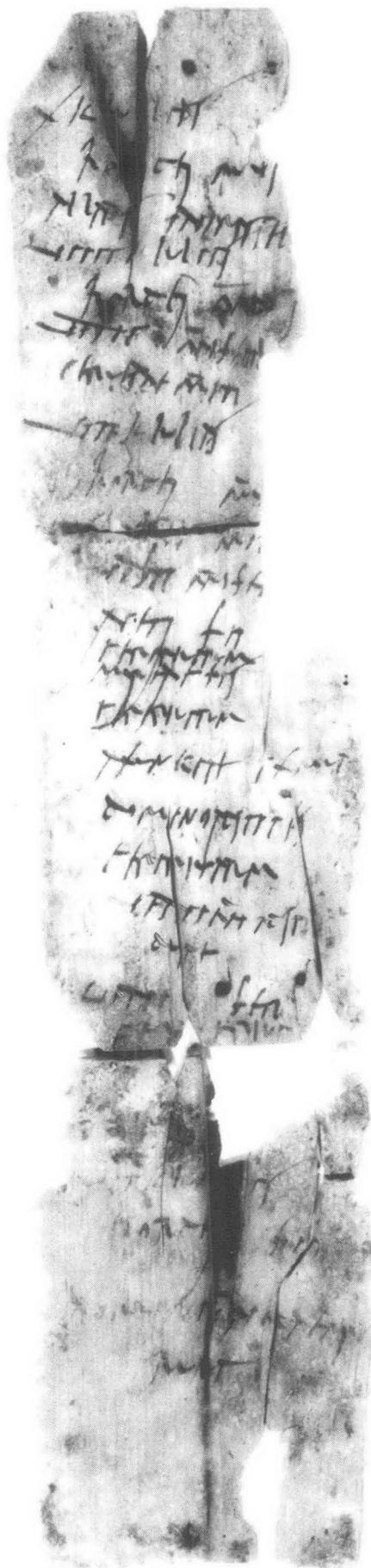
- 1. **Tablet No. 1**
Scale 1.3:1
- 2. **Tablet No. 8**
Scale 1:1

- 3. **Tablet No. 9**
Scale 1.2:1
- 4. **Tablet No. 7**
Scale 1.4:1
- 5. **Tablet No. 2**
Scale 1.2:1

- 6. **Tablet No. 3, side A**
Scale 1:1
- 7. **Tablet No. 3, side B**
Scale 1:1



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PLATE II

1. Tablet No. 4, lines 1-19
Scale 0.9:1

2. Tablet No. 4, lines 20-45
Scale 0.9:1

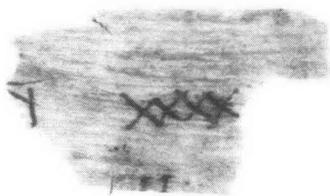
3. Tablet No. 5
Scale 1:1



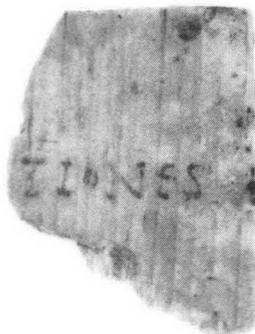
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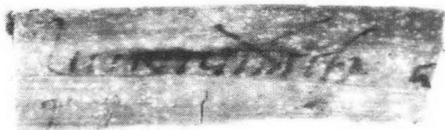
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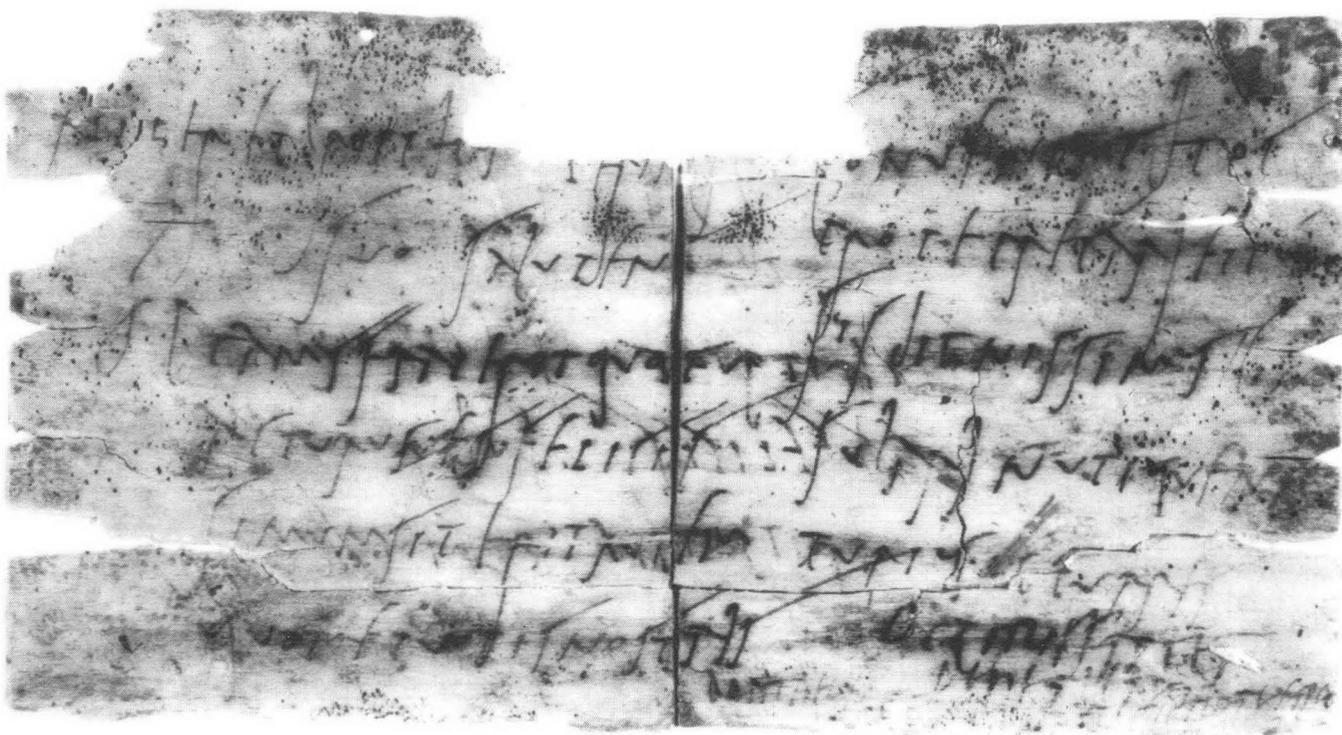


PLATE III

1. **Tablet No. 6,**
Scale 1.3:1

2. **Tablet No. 13 (i)**
Scale 1:1

3. **Tablet No. 13 (ii)**
Scale 1:1

4. **Tablet No. 11**
Scale 1:1

5. **Tablet No. 10**
Scale 1:1

6. **Tablet No. 21, front**
Scale 1:1

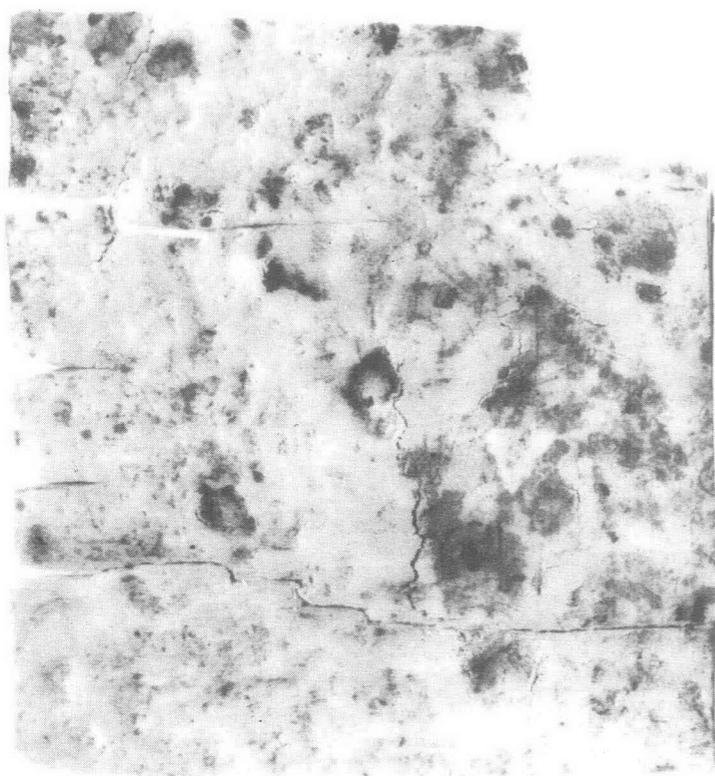
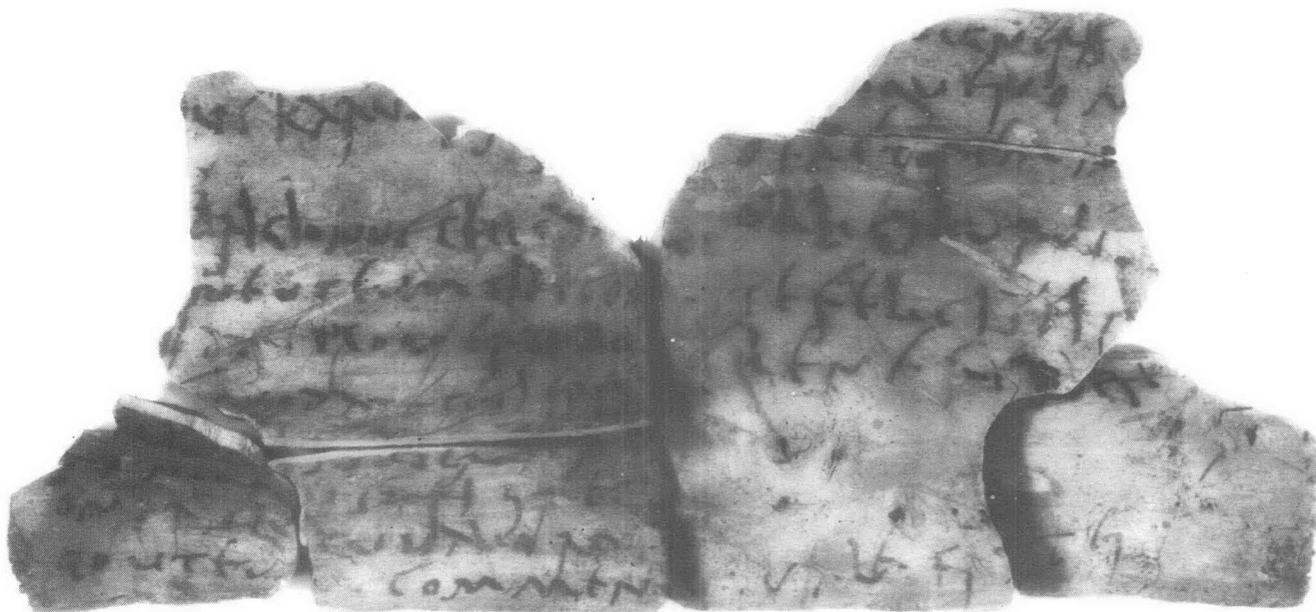
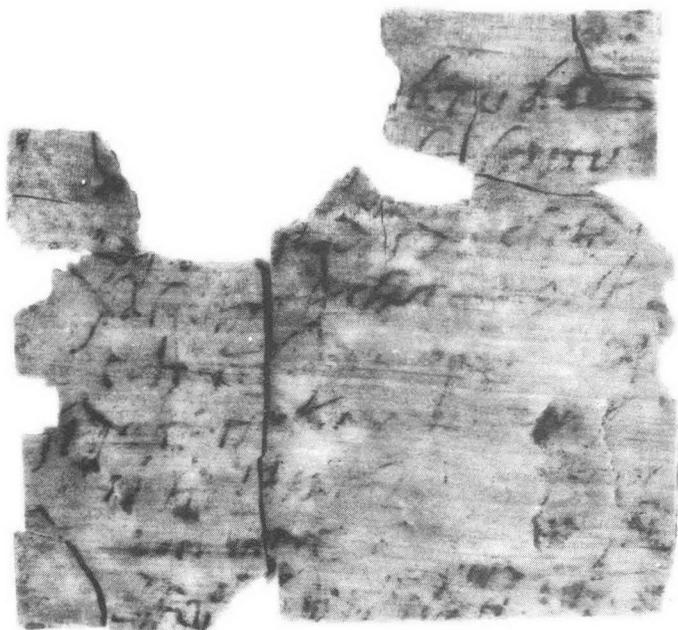


PLATE IV

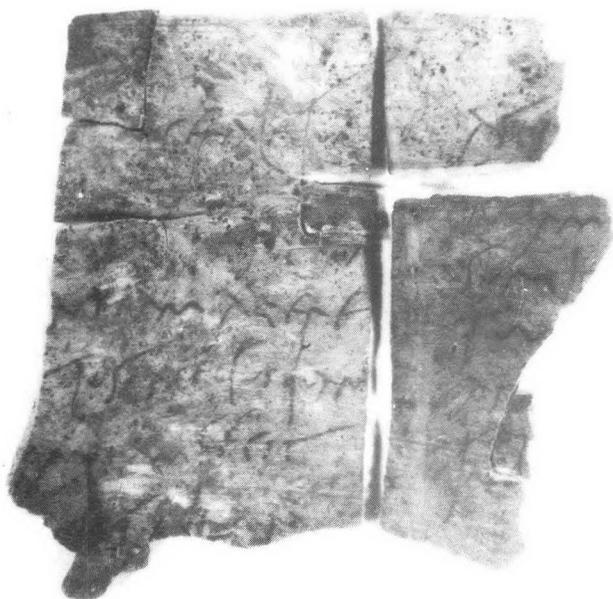
1. **Tablet No. 22**, front
Scale 1:1
2. **Tablet No. 21**, right-hand section, back
Scale 1:1
3. **Tablet No. 22**, right-hand section, back
Scale Scale 1:1



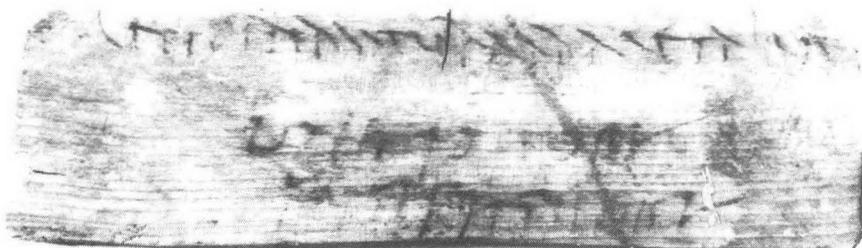
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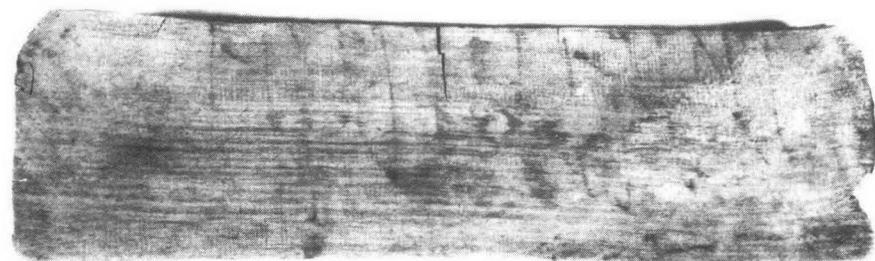
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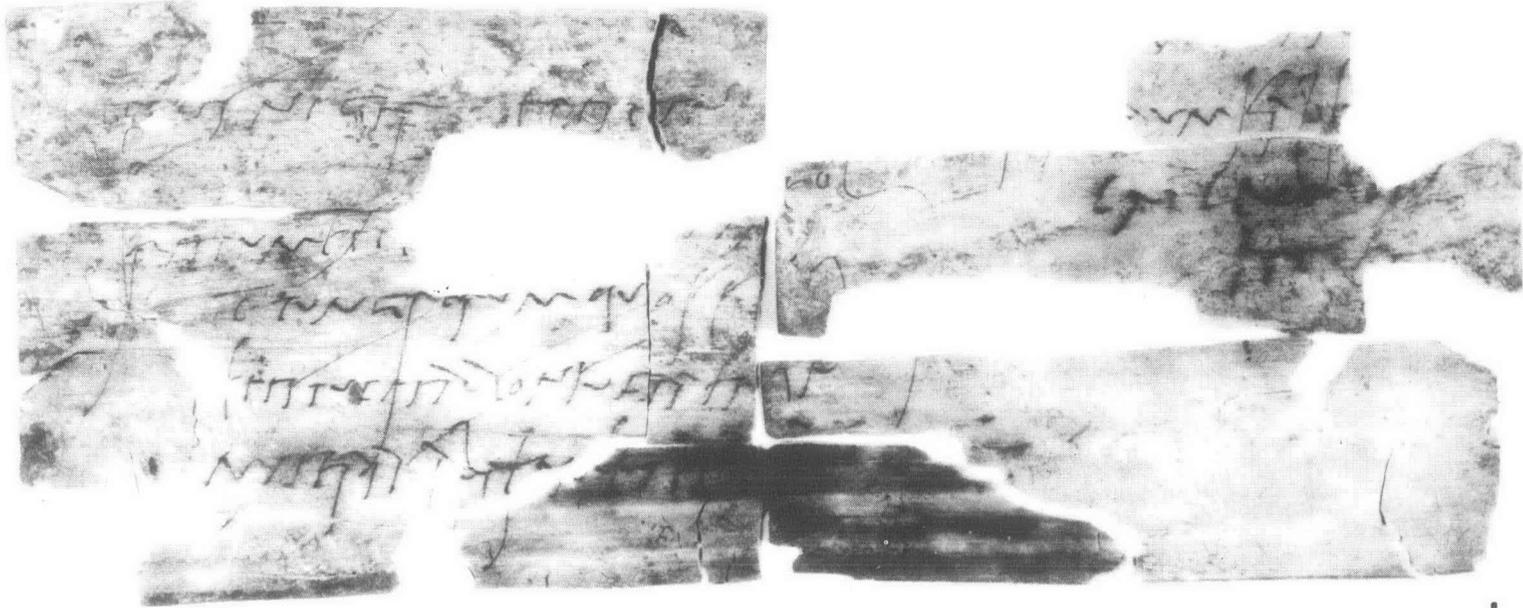
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PLATE V

- 1. **Tablet No. 23, front**
Scale 1:1
- 2. **Tablet No. 23, back**
Scale 1:1

- 3. **Tablet No. 24**
Scale 1:1
- 4. **Tablet No. 25, front**
Scale 1:1

- 5. **Tablet No. 25, back**
Scale 1:1



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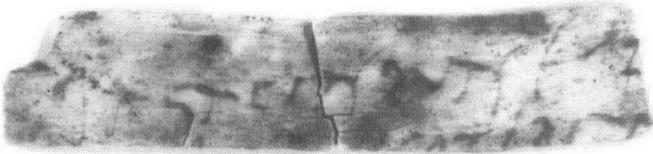
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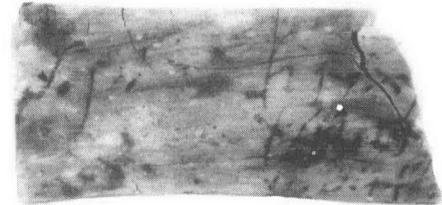
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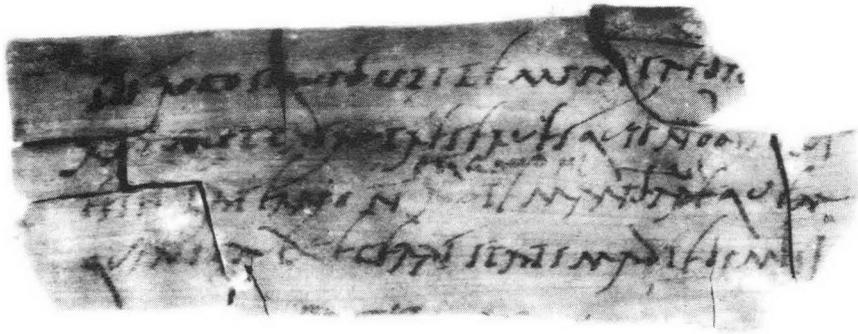
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PLATE VI

- | | | |
|--|---|--|
| 1. Tablet No 30 , front
Scale 1:1 | 3. Tablet No. 26 , back
Scale 1.2:1 | 5. Tablet No. 44
Scale 1.1:1 |
| 2. Tablet No. 26 , front
Scale 1.2:1 | 4. Tablet No. 27 , front
Scale 1:1 | 6. Tablet No. 32
Scale 1:1 |



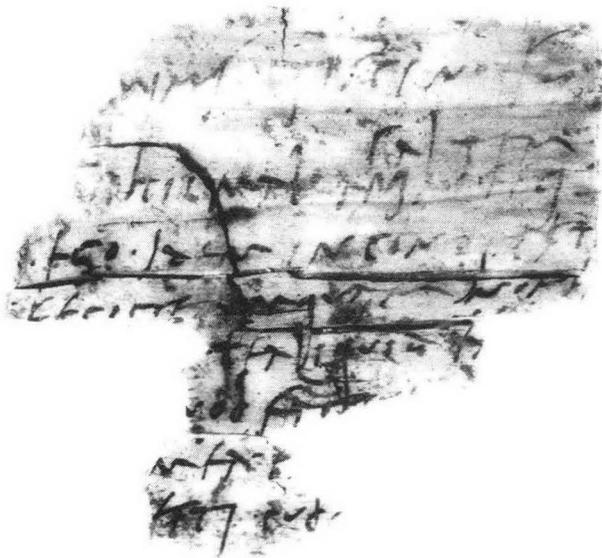
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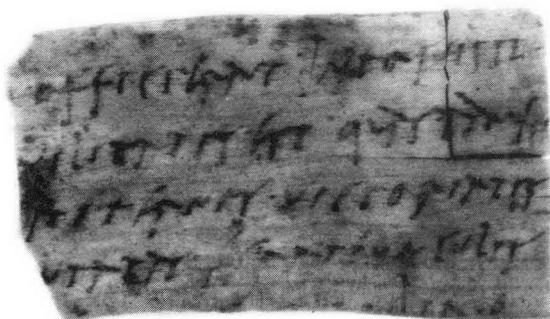
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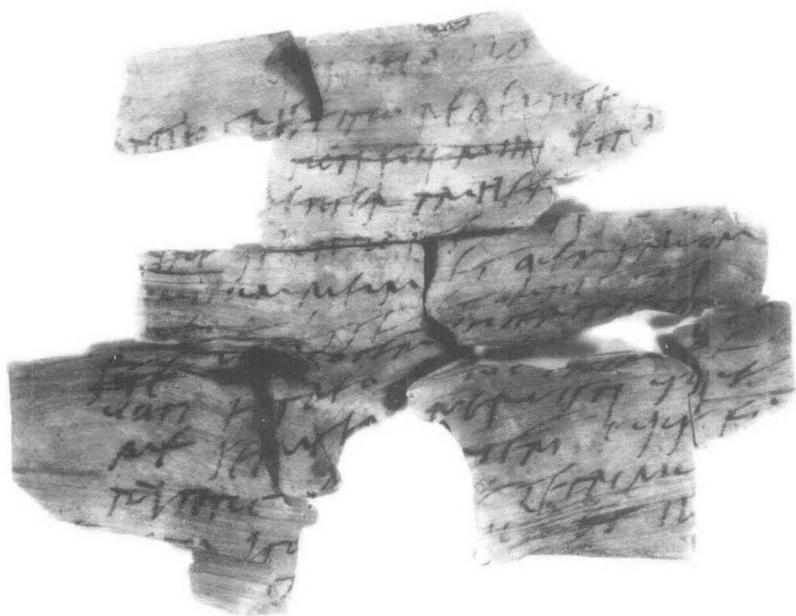
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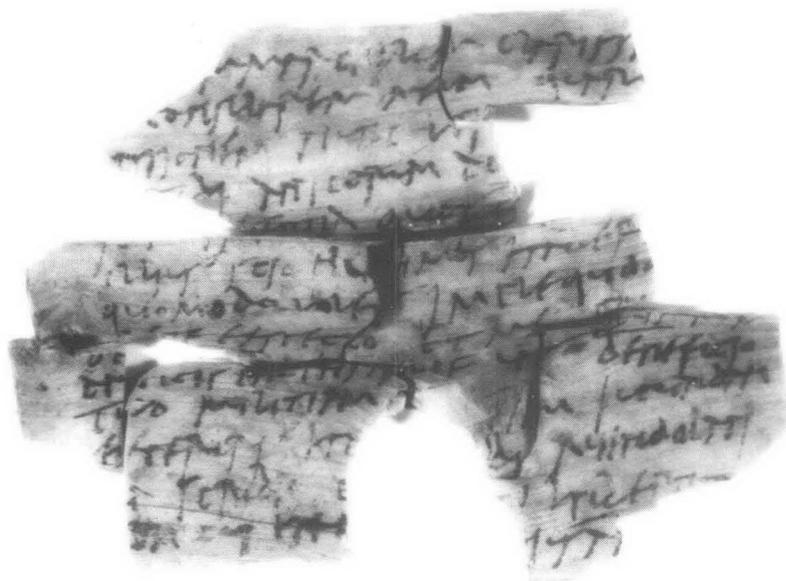
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PLATE VII

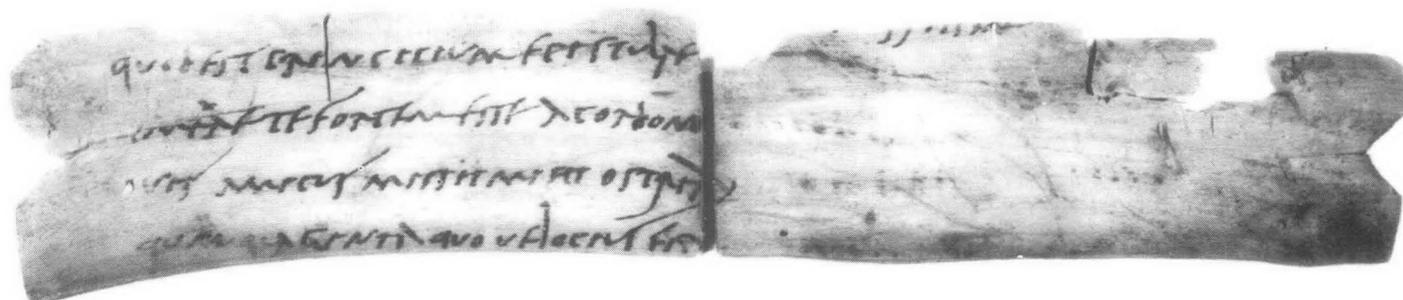
1. **Tablet No. 34, front**
Scale 1:1
2. **Tablet No. 34, back**
Scale 0.9:1
3. **Tablet No. 35**
Scale 1:1
4. **Tablet No. 31**
Scale 1:1
5. **Tablet No. 41**
Scale 1:1



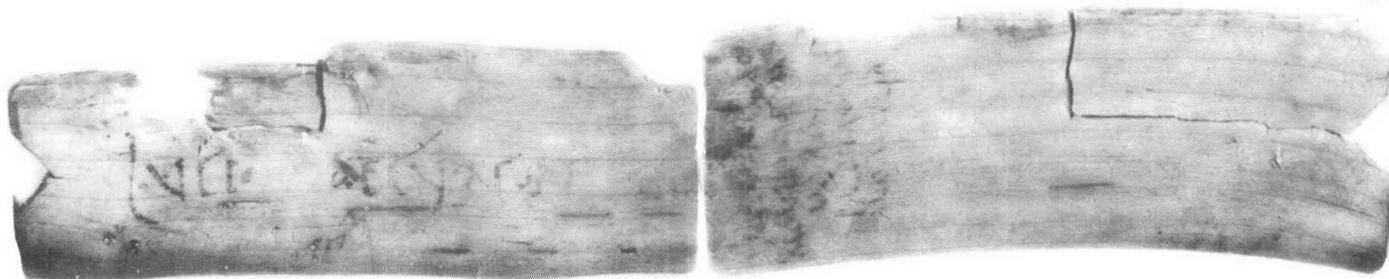
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PLATE VIII

1. Tablet No. 37, front
Scale 1:1
2. Tablet No. 37, back
Scale 1:1

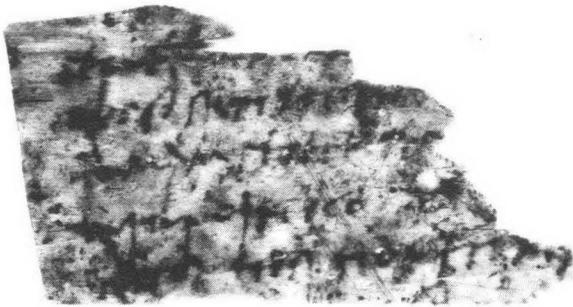
3. Tablet No. 39, front
Scale 1:1
4. Tablet No. 39, back
Scale 1:1



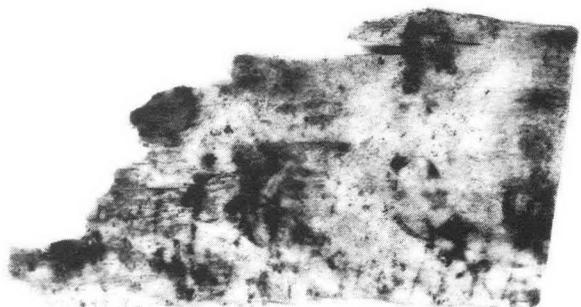
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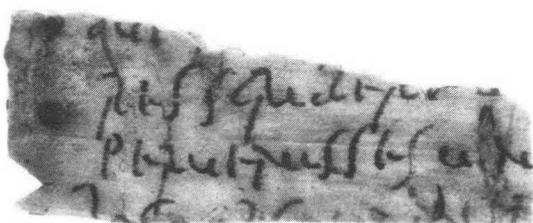
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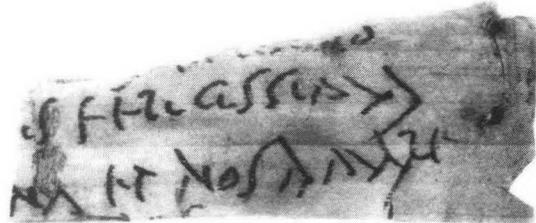
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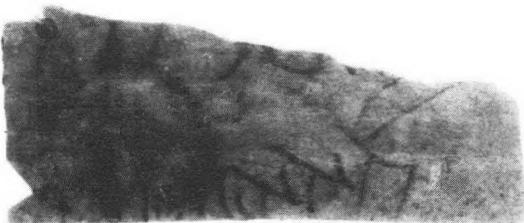
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PLATE IX

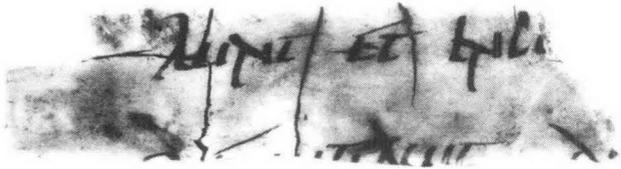
1. **Tablet No. 38**, front, left-hand section
Scale 1.7:1
2. **Tablet No. 38**, front, right-hand section
Scale 1.7:1
3. **Tablet No. 40**, front
Scale 1:1
4. **Tablet No. 40**, back
Scale 1:1
5. **Tablet No. 42**, front, left-hand section
Scale 1:1
6. **Tablet No. 42**, front, right-hand section
Scale 1:1
7. **Tablet No. 42**, right-hand section, back
Scale 1:1



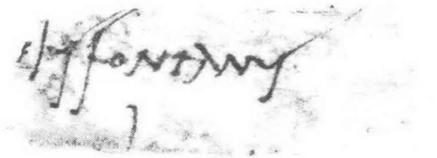
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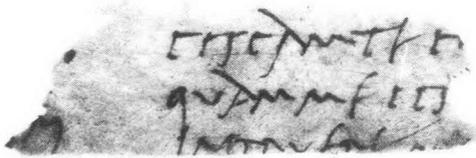
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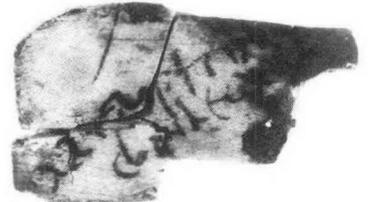
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PLATE X

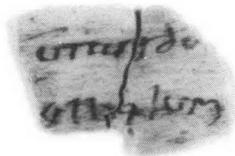
- | | | |
|---|--|--|
| 1. Tablet No. 82 , front
Scale 1.5:1 | 5. Tablet No. 43 , right-hand section, front
Scale 1:1 | 7. Tablet No. 45 , front
Scale 1:1 |
| 2. Tablet No. 82 , back
Scale 0.9:1 | 6. Tablet No. 43 , right-hand section, back
Scale 1:1 | 8. Tablet No. 45 , back
Scale 1:1 |
| 3. Tablet No. 47
Scale 1.3:1 | | 9. Tablet No. 46
Scale 1:1 |
| 4. Tablet No. 43 , left-hand section, front
Scale 1:1 | | |



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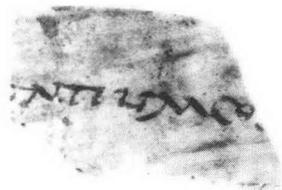
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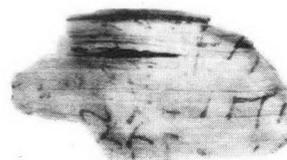
7



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PLATE XI

1. **Tablet No. 52**
Scale 1:1

2. **Tablet No. 50**
Scale 1.7:1

3. **Tablet No. 65**
Scale 1:1

4. **Tablet No. 77, back**
Scale 1.2:1

5. **Tablet No. 51**
Scale 1:1

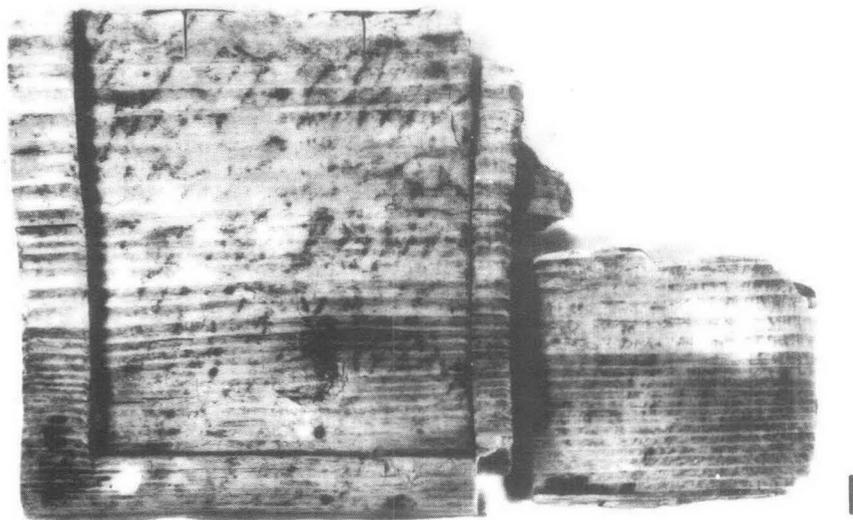
6. **Tablet No. 48**
Scale 1:1

7. **Tablet No. 62**
Scale 1.2:1

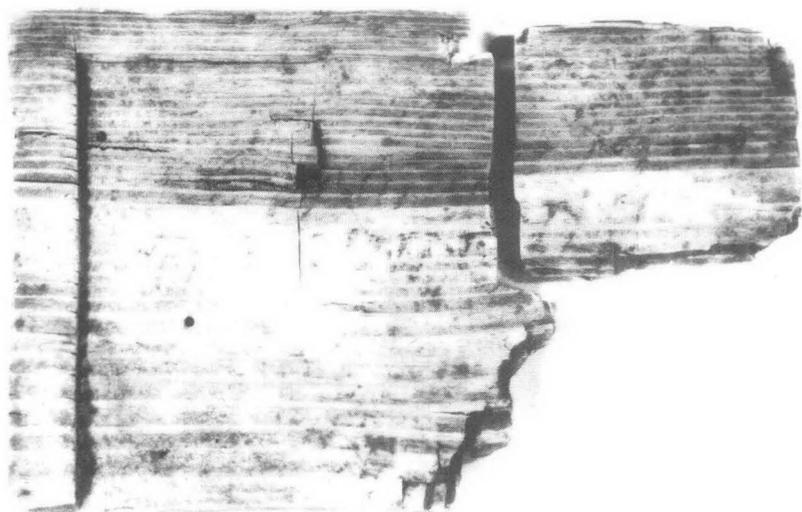
8. **Tablet No. 76**
Scale 1.1:1

9. **Tablet No. 53**
Scale 1.2:1

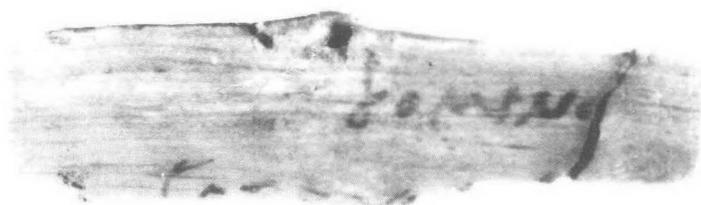
10. **Tablet No. 58**
Scale 1:1



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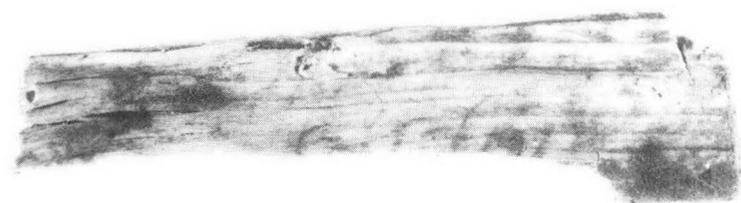


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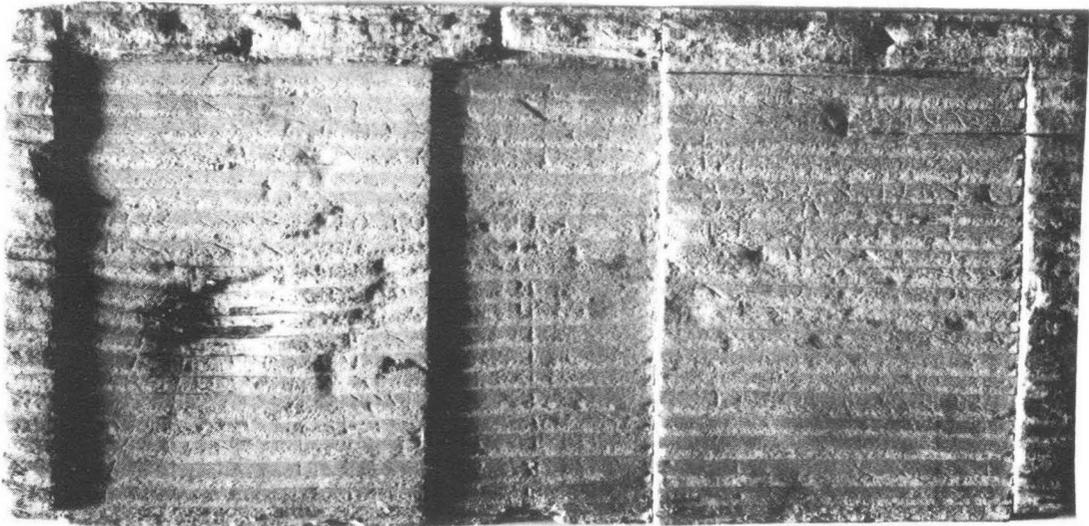
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PLATE XII

1. **Tablet No. 113**, front
Scale 1:1
2. **Tablet No. 113**, back
Scale 1:1
3. **Tablet No. 88**
Scale 1.4:1
4. **Tablet No. 85**
Scale 1.6:1
5. **Tablet No. 57**
Scale 1:1
6. **Tablet No. 86**
Scale 1.6:1
7. **Tablet No. 68** (ii) and (iii)
Scale 1.3:1



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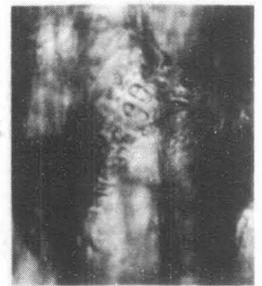
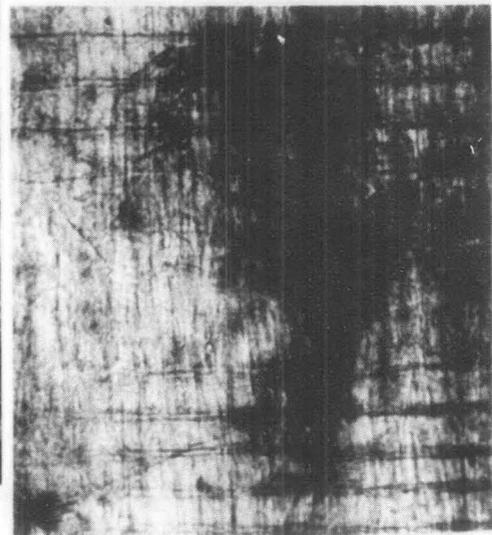
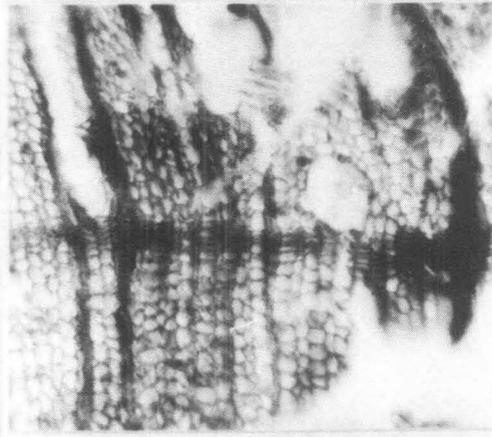
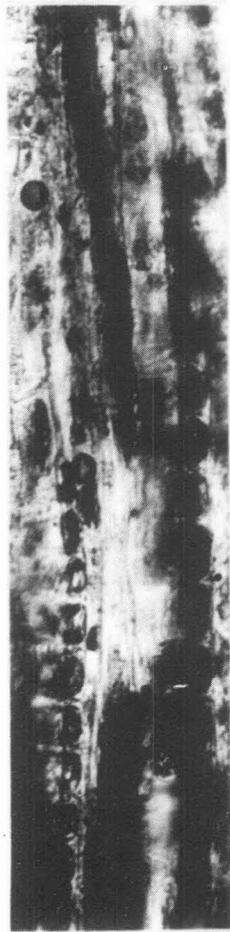
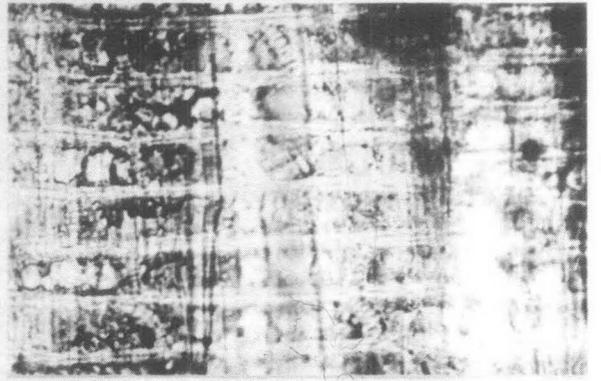
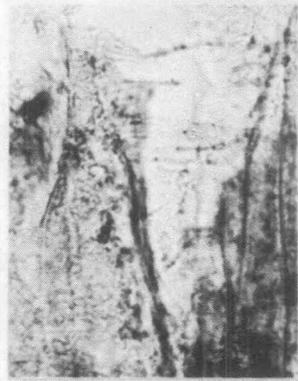
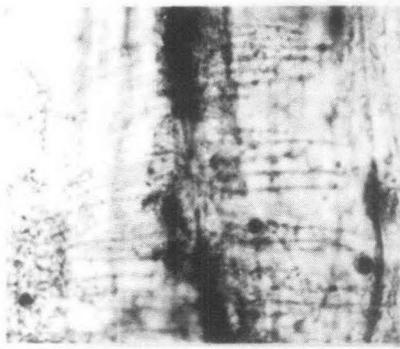
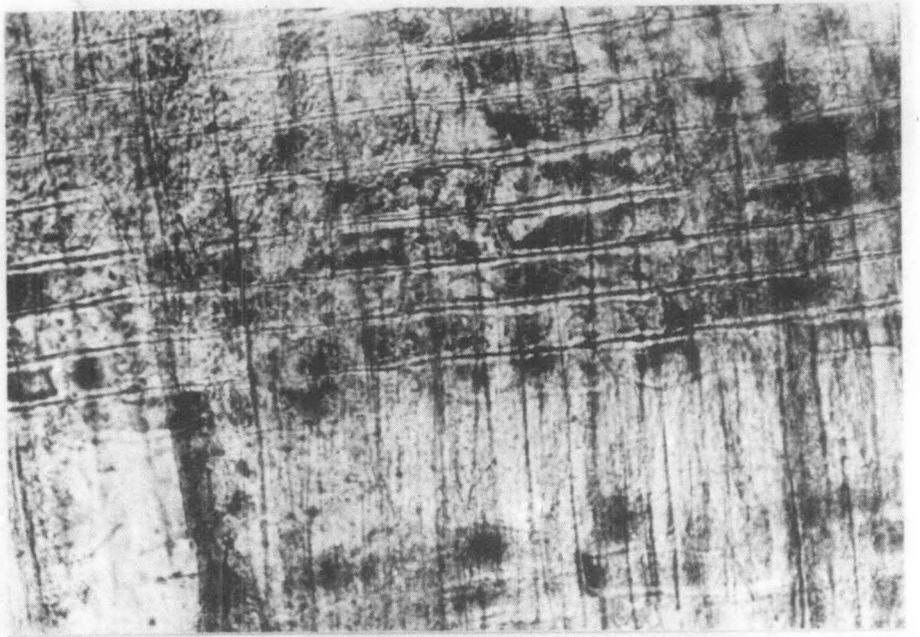
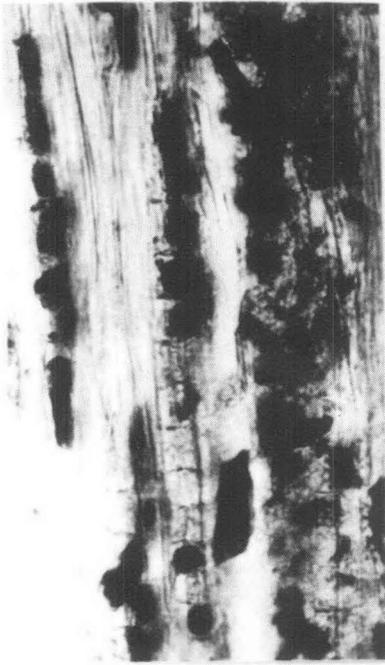


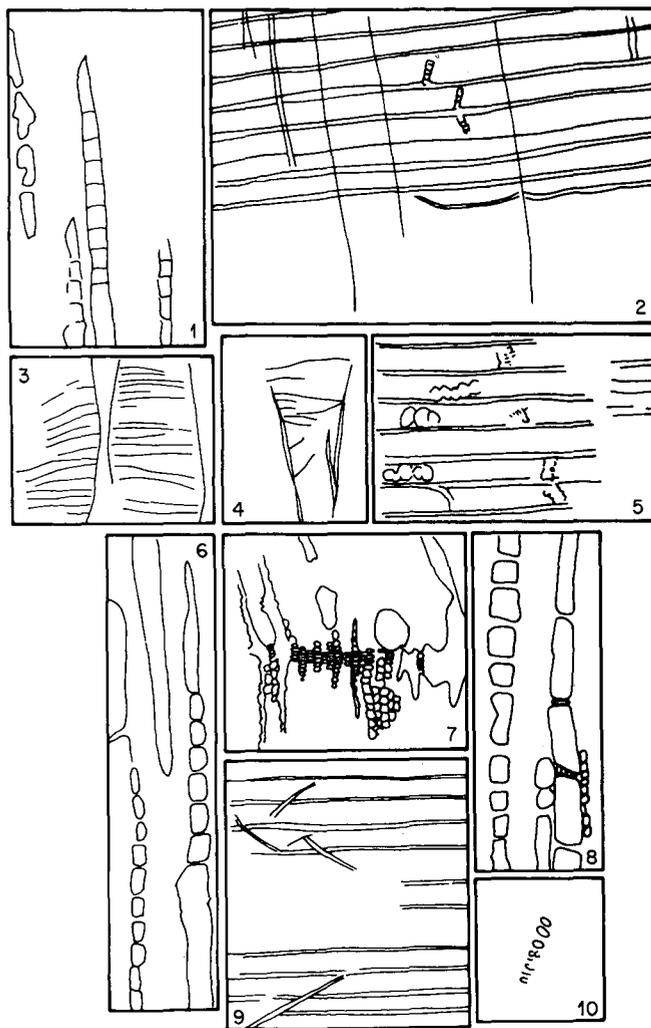
2

PLATE XIII

1. **Tablet No. 117**, Front.
Scale 1:1

2. **Tablet No. 117**, Back. Scale
1:1





PLATES XIV and XV

Photomicrographs of sections from the Vindolanda tablets, with interpretative line drawings. All magnifications are $\times 270$. See pp. 26–31

1. TLS from Tablet 2 showing uniseriate medullary rays of Alder (*Alnus glutinosa*) in cross-section.
2. RLS from Tablet 5 showing medullary rays of Alder (*A. glutinosa*), with beaded plasmadesmata visible in the crosswalls of some cells. The rays run at right angles to the xylem tracheids and parenchyma.
- 3 & 4. RLS from Tablet 5 showing scalariform end-plates of xylem vessels of Alder (*A. glutinosa*).
5. RLS from Tablet 29 showing uniseriate medullary rays of Birch (*Betula* sp.) in transverse section.
6. TLS from Tablet 29 showing uniseriate medullary rays of Birch (*Betula* sp.) in cross-section. A few spherical spores of fungi are also visible.
7. TS from Tablet 29 showing an annual ring of Birch (*Betula* sp.), with the small-celled parenchyma formed at the end of the growing season, and the large vessels produced during the following spring. The annual ring is traversed by biseriate and multiseriate medullary rays.
8. TLS from Tablet 39 showing uniseriate, slightly heterogeneous medullary rays in cross-section.
9. RLS from Tablet 39 showing medullary rays in transverse section. The rays appear multiseriate under the microscope in RLS.
10. Large elliptical pore (long axis approximately $10\ \mu\text{m}$ across) in a xylem vessel side-wall from Tablet 39. The wood of Tablet 39 has not been conclusively identified, but shows similarities to Willow (*Salix* sp.)

