WRITERS AND WRITING
IN THE ROMAN ARMY AT DURA-EUROPOS
by

Jacqueline Austin

A dissertation submitted to
the Department of English/Institute of Archaeology & Antiquity

for the degree of Doctor of Philosophy

College of Arts & Law
University of Birmingham
Birmingham B15 2TT
July 2010

' …l'écriture est la base même de notre civilization… N'y voir qu'un aspect secondaire de la révolution des communications, c'est sous-estimer son rôle absolument décisif dans la création de notre civilization'.[1]

Jack Goody

[1] (1996), **L'homme, l'écriture et la Mort: Entretiens avec Pierre-Emmanuel Dauzat,** Paris: LesBelles Lettres, p.199.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

A. PLATES

NOTE: ███████████████████████████████ all plates are ██████████

annexed to the work in Adobe PDF form from page 299

B. FIGURES

Figure 1: Cutting a Reed: The First Cut (Johnston: 1977, p.18, Fig 17)

Figure 2: Cutting a Reed: Removing the Pith (Johnston: 1977, p.18, Fig 18)

Figure 3: Cutting a Reed: Fashioning the Nib (Johnston: 1977, p.18, Fig 19)

Figure 4: Cutting a Reed: and Splitting the Nib (Johnston: 1977, p.19, Fig 20)

Figure 5: *Ductus* Illustration (reproduced from Sassoon: 1995, p.16).

Figure 6: *Graffito* on a Pompeii wall (reproduced from Garrucci: 1856).

Figure 7: Forms of <b> (reproduced from Mallon: 1952, p.34).

Figure 8: Diagram showing the chronological progression of Roman letters.

Figure 9: Forms of <e> (diagram reproduced from Gilissen: 1982, p.308).

Figure 10: Forms of <e> (reproduced from Casamassima & Staraz: 1977, p.22, Fig. I. 1).

Figure 11: Forms of <e> (reproduced from Casamassima & Staraz: 1977, p.22, Figure I. 2).

Figure 12: Forms of <m> (reproduced from Casamassima & Staraz: 1977, p.23).

Figure 13: Forms of <m> (reproduced from Casamassima & Staraz: 1977, p.23).

Figure 14: Detail from P. Tebtunis 686a.

Figure 15: Detail of the Principia at Dura (reproduced from TEAD-V, Pl. III, as slightly amended by James (2007, p. 34, Fig. 5, with kind permission of the author).

ACKNOWLEDGEMENTS

ABSTRACT

This socio-palaeographic thesis maintains that behind the uniform appearance of Roman army writing was a particular, dedicated training. Focussing on the third century Dura-Europos, it uncovers evidence for the thorough schooling given to the clerks of the resident *Cohors XX Palmyrenorum* enabling them to fulfil their administrative duties. These include maintaining efficient documentation systems and preparing a range of accurate, legible texts, and the clerks were trained to produce a repertoire of standard military scripts. Additionally other soldiers and the more general public were taught to read and to understand, to varying degrees, but the clerks, distinct, were specialist writers who found dignity in the work that they did.

This dissertation, a preliminary study, draws throughout from the camp's rich epigraphic and papyrological evidence. It sets out the context in which clerical soldiers worked and the evidence for army literate education and then introduces Roman writing, its form and development generally, before analysing in detail the letter-forms used in one particular standard hand over the decades the cohort's documents span. In this hand, the well-known development out of Old Roman Cursive is presented and discussed. A brief additional chapter presents the possibility that military clerks also produced camp signage.

PREFACE

Prior to their enlistment in the Roman army the clerical soldiers at Dura-Europos had probably been, many of them, illiterate farmers, desert peasants and traders who spoke exclusively native languages and worshipped local gods. Their military careers changed and moulded their lives. Like thousands of other scribes and clerical staff working in the service of the Roman Empire in other military bases equally distant from Rome, many of them learned, apparently willingly, to produce functional documents in a range of recognisably Roman handwriting styles. In this thesis, I set out to explore the working practices of the clerical soldiers at Dura-Europos with the intention of, at least partially, both revealing their training and accounting for some of the precise graphic details that characterise their writing styles.

Reasons for choosing Dura-Europos as the focus of any contextually-based study are not hard to find. The unusually well-preserved remains of the Syrian city mean that the archaeological records from the site, though they have their limitations and difficulties, are relatively full. The ruins and also the important wall paintings from the city have attracted the interest of many and drawn much and varied scholarship to the site. The importance of the East, and of Syria, in the third century Roman Empire has made Dura - a strategically-situated base in its wider environment - important too to several other historical disciplines, many of which are concerned with uncovering the history of the Roman army.

The city's epigraphy, architecture, art and abundant 'graffiti' all contribute to general understanding of life there, so that regarding evidence for a study of writers and of writing no other army camp compares. Indeed nothing is perhaps as important for the study of Latin

writing in the Roman Empire as the survival of the magnificent collection of documents known as 'the Dura papyri'.

There are now hundreds of published Latin papyri from the Roman era. Observations can, and ought, to be made about their writing styles. The best way to begin to do this, palaeographically speaking, is to carry out detailed analyses of small samples, and, from this, to derive a set of principles that can later be applied to other examples. The Dura Latin papyri, a collection of some eighty documents spanning approximately fifty years, and all either produced or received by one particular Roman military unit, present an ideal opportunity in which to do this; because the documents are related to each other in their context, comparison between them can highlight – instructively - their regularities and common phenomena. It is this that I try to do, particularly in the second half of this thesis.

The intention has also been to describe, as fully as possible, the conditions in the military in which writing was produced, to uncover information about military scribal training, practices and professional behaviour, and to begin to relate the surviving scripts and their particular styles to the roles they once played, both at the site and in the Roman army more generally. In this respect too, the thesis should be treated as a work that provides a beginning and an understanding to be built upon and developed in future studies.

Filling in the detail in the sketchy outline we have of a military clerk's life in the Roman army and of the handwriting he produced as part of it obviously has its limitations. But Roman army studies today is, to my mind, a lively and stimulating field in which to work. So much heavy groundwork has been done by the earlier great army scholars, and the modern student who is less well-equipped than those who went before her, can nonetheless call upon a wide range of well-researched, well-written reference works for areas in which she may not have

progressed very far. I refer here in particular to the fantastic work done by the pioneer readers and editors of the apparently tangled and tortuous scripts of the Dura papyri, Bradford-Welles, Gilliam and Fink, as published in their edition of the documents **The Excavations at Dura-Europos Final Report V, Part I, The Parchments and Papyri** (TEAD-P&P: 1959). Without this scholarship, as of that in the later facsimile editions produced by the prolific and important editor of Roman documents, Robert Marichal in **Chartae Latinae Antiquiores** (especially ChLA-VI-IX: 1975-7, those volumes of the series that present the Dura material), I should never have been able to produce the thesis that follows.

Equally important perhaps, a wide selection of digital photographs of the Dura documents in very high resolution is now freely downloadable from the **Yale University Library** website (2004) [online] http://beinecke.library.yale.edu/papyrus [Accessed January 18th 2010]. This makes possible analysis of script details at sizes and resolutions which would challenge the most powerful handheld magnifying glass. The site also presents, for ease of reference, a full bibliographical apparatus with each entry (last updated July 29 2009). Such facilities were not available to earlier scholars. Here too, then, the Dura documents stand out as the ideal corpus on which to begin serious palaeographical analysis of Latin writing. However, my intention throughout this work and particularly in the handwriting sections, is that the findings I make with regard to the Dura papyri should later be tested more widely against other Roman documents from elsewhere in the military world.

My work belongs to and comes from the discipline of palaeography. However, I am also a subscriber to a belief, once cogently expressed by Hilary Jenkinson, eminent palaeographer and archivist, that 'the initial explanations of Palaeography' are gleaned from the 'History of Administration' (Jenkinson: 1915, p.7, Jenkinson's capitals). In other words, in order that the

palaeographer can explain the specific and particular details of a variety of script (which she, alone among scholars, is required to do) prerequisite is an understanding of the social and administrative context in which the document that bears it was produced. It is in the collaboration between his/her historical knowledge of the use of written documentation in the period under consideration, and of its scripts and their principles, that the palaeographer should be expert and is best able to contribute to scholarly debate.

In much of the thinking that has gone into the work I have consulted people who work today in this country as calligraphers and lettering practitioners, modern scribes, as well as their forefathers and masters in print. Association with letterers today and interest in their working methods and their tools, attempts to see through their eyes, to pick out and critique, as they do, fine details of letters unnoticed by most, and even, at times, to acquire their skill myself - all these have played a fundamental role in the development of my own ideas about Roman writing. Little attention has been given, in classical scholarship at least, to the consideration of writing as a technical craft, and exploration and scholarship of this area is commonly neglected. However, practical knowledge of the 'mechanics' of ancient writing has much to offer, both to the greater understanding of Roman documents and to that more generally of life as a literate Roman soldier.

Other scholars too, of course, have also inspired me forwards, and perhaps particularly all those who have responded to my presentations at conferences and seminars with interest and enthusiasm for my analyses. I should like to single out for special mention my stalwart supervisor Tom Davis who has always kept me positive and on the right track. Our meetings have always been most fruitful and important.

1.   THE ARGUMENT

Several centuries prior to the Roman period at Dura-Europos, Cicero had expressed a contemptuous attitude towards waged manual workers and craftsmen (*Cic. de Off.* 1.150-1, cited by MacMullen: 1974, pp.115, 119, Note 87 with further references; generally Burford: 1972). Evidence suggests, however, that the attitude of his day did not stick. Scholars have recently examined the activities of craftsmen in both the civilian and military worlds and have found, principally by reading their funerary inscriptions, that they increasingly located their pride and sense of self-dignity in the practice of their particular trades (Joshel: 1992; Hope: 2001, p.53). Such scholars took inspiration from earlier work questioning the role of and reason for the fashion for inscribing tombstones which had reached a peak throughout the empire in the later second century CE (Macmullen: 1982; Meyer: 1990; Woolf: 1996).

Joshel and Hope both emphasised the growing predominance in funerary urban settings of tombstones put up by workers, or by the guilds to whom they had belonged, which in relief sculpture depicted the workers in their working environments, often in great detail, and accompanied by inscriptions containing lengthy work-related biographical accounts of the deceased. They showed that craftsmen were represented on their stones *in situ*, carrying out their particular crafts and trades; their tools and their working circumstances fully visible and highlighted so as to have made them hard to miss by the ancient passer-by. They argued that this was a new and growing trend in the late first and second centuries of the Empire.

In fact craftsmen viewed (and publicly presented) the way in which they earned their living, the practice of their own particular skills, in a manner akin to that in which the earlier, more privileged members of society had earlier seen (and publicly presented) their own position

(Joshel: 1992, p.167, cited by Hope: 2001, p.53). They can only have felt this way, and depicted themselves in such contexts, had they known that their position in their respective societies was also respected and valued by others. Craftspeople and other manual workers now found, in the actual and tangible skills they had learned and the contribution they made of them to the good of wider Roman society, a source of self-dignity and personal pride.

In Lucian's fiction 'The Dream' (written in the second century) the *persona* pitches the idea of life as a sculptor against an alternative life of leisured culture (Cornell *et al*.: 1987, citation p.28). The cultured life easily wins. It is seen as more desirable than living by the work of one's hands. However, the very fact that Lucian makes this argument at this time shows that he is fighting a rearguard action: protesting against the ongoing 'workers' revolution' as just described while his cause is already almost certainly lost. That he raised the issue at all indicates, however, that it was probably very much alive in debate and discussion in many circles, particularly amongst those who at the time felt themselves and their lifestyles threatened by it.

The idea that self-pride might be located in an individual's occupation has also been developed by Onno Van Nijf, who extended his enquiry to the trades-related *collegia* or working men's guilds which had also grown very popular amongst the male population of the second century Empire (1997). Van Nijf determined, using the evidence for *collegia*, that the possibility of belonging to such an association was another way in which less-privileged classes could pitch the importance of their own roles against the power structures set up and held in place by the ruling élite. He stressed also the fact that the increasing preponderance of workers' inscriptions in public places gradually altered the character of the messages transmitted in the public environment and had further society-related consequences.

'One function of inscriptions was to help (re-)define the social and political order in the city' (Van Nijf: 1997, p.23).[2]

The detailed representation of the workman on his tombstone, the stone itself often financed and erected by the guild which the deceased had been part of, functioned as a form of public advertisement for the particular trade. Thus membership of a collegial union was another illustration of workers 'fighting back' against the earlier contempt of the aristocracy for artisanal trades (further comments on this in Habinek: 2009, esp. pp.119-120). In the eyes of the craftsmen, there was no stigma or contempt for what they did. They were proud of their skills and their visible and public expression of this using traditional Roman media shows that they regarded themselves as part of Roman society and as having their own rights within it.

But if the situation and status of non-military craftspeople was altered, would the craftsmen in the army not also have begun to see themselves as having new importance, new work-related dignity? In fact I suggest that the clerical soldiers in the army, and specifically in the Dura camp under discussion here, fall into the same category as other skilled workers and artisans. I propose that the military clerks too found their sense of self in the craftwork they did for the army and ultimately for the empire it sustained. There is a specific indication of this in the text of a lettering exercised to be analysed in Section 11. I suggest too that the sense that they had of themselves finds visual and visible expression in the work that they did, and specifically, in the character of the writing upon the documents that they wrote in their professional capacity which, at Dura-Europos, especially is quite remarkable in its consistency.

---

[2] See also Häussler (2002).

The appearance of military documents, whatever the material they were written on, formed part of general camp consciousness and the clerks who regularly produced military texts were instrumental in ensuring that this was so. Theirs was an important job and the army and the higher administration took care, at least at Dura, to ensure that they were trained so as to be able to do it. Military clerks were, at all levels throughout the administrative offices, key people in the control of the material form that the army's official writing and lettering took. The work they produced advertised their own presence and moulded the conscious experience of everyone else. Those who saw it recognised its importance and all lives were guided by written words, pronouncements and laws.

Many of the Roman soldiers at Dura-Europos would only have been citizens since early 212 CE when Caracalla had passed the *Constitutio Antoniniana*, the decree that bestowed citizenship upon almost all free inhabitants of the empire (Potter: 2004, pp.138-9).[3] For the new citizen soldiers, their membership of the empire was still a novelty, something fresh and exciting that brought new possibilities and a renewed sense of dignity (as well as more taxes). There was also a reinforced bond between citizen and emperor that would have been felt all the more strongly in the army.

The emperor Caracalla had, according to Dio, declared himself, a few months before passing his decree, a 'fellow soldier' and encouraged the *Legio II Parthica* to celebrate his being 'one of you' (Potter: 2004, p.136 quoting Dio, 77.3.2). If the clerical soldiers, at Dura and in the army more widely, had earlier taken pride in the work they did for Rome because, like other craftsmen, they found importance in the skills they gave to the empire, a still greater incentive

---

[3] The only exceptions to this were people who were of *dediticii* status (ie. had formally surrendered in war) and certain freed slaves.

now motivated this. The Dura papyri reveal the clerks carrying out their writing duties efficiently and with enthusiasm and a certain panache. Their writing, they were aware,

'articulated the complex economic and administrative systems on which the empire, its cities, and their inhabitants depended' (Woolf: 2009, p.46).

In both the private and the more official spheres of Roman society the preponderance of writing had been growing almost exponentially ever since it had secured its network of roots.[4] There had been, since Republican days, what Woolf calls a 'growing documentary mentality' (Woolf: 2009; early papers on this in Humphrey (Ed): 1991; Bowman & Woolf (Eds): 1994). Precise statistics for numbers of Roman literates are impossible. Lacking too is a good working definition of the term 'literate'. However, it is now generally agreed by historians that 'literacy' - in the sense of how many people practically could read and/or write - is far less important than the understanding that the mechanics of state-operations were driven and supported by a widespread use of written texts. People were governed by documents of multifarious kinds in many spheres of their lives, whether or not they were themselves able to produce them or to read the words themselves. In the army this was probably particularly true (Watson: 1974; Speidel: 1996; Bowman: 2003; Wilkes (Ed.) 2003). I also maintain that there was a creative aspect to the *appearance* of standard text-types in regulation lettering that Roman society, and specifically the Roman army, was aware of and consciously exploited.

The production of regular standard script-styles, the 'symbolic' property that letters and scripts have, and have had in Roman culture since the Republican era, was pointed out several years ago by Mary Beard in relation to the use of texts by the priests and keepers of the Arval Acta, the documentary protocols of the priestly brotherhood in Rome (Beard: 1985). Beard

---

[4] Joanna Yates makes some pertinent comments in relation to the phenomenal growth of documentation caused by the comparable rapid development of communication networks in nineteenth century America (Yates: 1989).

argued that the careful keeping and inscribed displays of what were in effect the minutes recording the priests' meetings had no utilitarian function and that the only motivation for their production was the ritual that accompanied the execution of the carving itself, part of which was its formal display (Beard: 1991, p.137; also Scheid: 1997). The inscribed stones bearing each year's text became in themselves sacred objects of the priestly cult. Their textual content increasingly made reference to their own writing, to the instruments used in the act and to other elements belonging to the whole performance.

Beard had taken inspiration in her study from then in-progress postgraduate work by Callie Williamson which was to culminate in the latter's 1987 paper 'Monuments in Bronze' (Williamson: 1987). In her article, Williamson argued that the necessary document for legal processes was the small handwritten tablet kept out of sight of the masses, while the shining bronze tablets bearing inscribed treaties and legal regulations, publicly displayed in prestigious areas of Roman cities, were important far less for the texts that they carried than for their striking 'symbolic' representation of Imperial law. Inscribing a text into bronze was a display of power intended to dazzle, visible evidence of the might of the state (Williamson: 1987; also Eck: 1999: 2000). Everyone in Rome must have been familiar with the state's visual advertising – of which these tablets are a supreme but just one example - as they went about their daily lives in their Romanised cities.

Beard had also found the idea that writing had a function beyond the generally utilitarian in the important early work of Michael Clanchy on medieval literacy; as also in that of Brian Stock who had further developed some of Clanchy's ideas (Clanchy: 1979; Stock: 1983). Both works have been most influential since their publication on thinking about text and specifically about literacy.

Stock, in a powerful 1986 paper, rephrased his earlier ideas and argued that, with the growing preponderance of literacy, writing had begun to separate itself as a medium from the spoken word (Stock: 1986; see also Stock: 1983; Goody: 1986). Writing, in contrast to speech, had visible material form. Texts were transferable to contexts other than that in which they had taken origin, and they therefore began to assume a presence in the minds of their collective and various audiences who granted to them a sense of objective reality. Written texts were (are still) tangible things.

Thus one could argue that when written texts were used say to display laws, as was common practice in the ancient world, they seemed autonomous, independent from those who wrote them, and to project an innate authority that belonged actually to the lettered objects themselves rather than to their creators. When Republican laws were inscribed in bronze, this was a means by which the pretended authority of the physical texts themselves could be enhanced and exaggerated. The text as writing had additional power.

There are many examples of this in history beyond those already mentioned. Alföldy, as an instance, reminded us that in Ovid's *Fasti*, when Mars comes down to inspect the temple Augustus has erected in his honour it seems to him that the inscription bearing Augustus's name alters the manner in which he regards the whole building.

> 'He looked at the temple with the inscription reading the name of Augustus Caesar, and the work seemed to him all the greater' (Ovid 5, 551–568, cited by Alföldy: 1991).[5]

---

[5] *Spectat et Augusto praetextum nomine templum / et visum lecto Caesare maius opus* (my translation), cited: Alföldy, G. (2003) Die Repräsentation der kaiserlichen Macht in den Inschriften Roms und des Imperium Romanum in De Blois, L. (Ed.) **The Representation and Perception of Roman Imperial Power: Proceedings of the Third Workshop of the International Network Impact of Empire (Roman Empire, c. 200 B.C. - A.D. 476)**. Amsterdam: J. C. Gieben. pp. 3-19.

In the Roman world (as in ours) a written text has authority and power. Stock described what he called 'the union of literates and non-literates around the messages of the text, written or spoken', for whom it 'inevitably has implications for behaviour' (Stock: 1986, p.295). The audiences of texts cannot but help being affected by textual displays and reacting to them. The Romans demonstrably were not unaware that written texts were powerful and influential. They knew too, that they could use written documents at every level for their own benefit and in their own interests. It follows from this that they would have given the men who produced it the tools and the schooling to equip them to execute them appropriately and the status that ensured they were happy to do so.

Stock, in the work mentioned earlier, was developing some research undertaken far earlier by social anthropologists, and in particular by Jack Goody, one of the chief early movers in this field. Goody's influence and importance has recently been brought to prominence for workers in Classics in the very stimulating 'Afterword' by David Olson to Johnson's recent edited volume entitled 'Ancient Literacies' (Olson: 2009, with details and references to Goody's chief early works). In fact as long ago as 1986, Olson had set out some research that he and others had carried out on language acquisition in young children. The results showed that there were two distinctly different reasoning functions which developed at different stages in children's language learning processes (Olson: 1986). Olson's early paper pinpointed precisely that children learning to use language have two methods, both of which they need to be able to fully 'work out' a meaning. The methods are those that linguists now term the 'semantic' and the 'pragmatic', and the decoders children learn to use in linguistic comprehension are dependent on clues inherent in each type of meaning.

The semantic meaning of a spoken or written text lies in the precise linguistic code used in the text itself and is deducible from it by literal 'translation' of the component linguistic symbols (letters or sounds in words). The pragmatic meaning is that given to a linguistic event (a text) by its receiver or audience which is dependent on factors it contains that coincide with its use in the particular context. Pragmatic meaning therefore, unlike the semantic, is tied to the particular context and generated from it.[6] Importantly, the full meaning of the linguistic event cannot be understood without reference to it. However written text has the power to hold meaning even when it is detached from its producer. For it to do so, it has to be reinserted by its reader into a new (or hypothesised) context in order to be fully understood. As Olson points out, this liberates the text in a sense and makes possible the 'free play of subjectivities' upon it (Olson: 2009, p.401). It is therefore susceptible to a high degree of manipulation of the reader by the producer of the text of which the reader is unlikely to be fully aware. Texts do not *mean* so much as *suggest* their interpretation on the pragmatic level and they demand of their participants that they manufacture a situation in which they, the texts, would make sense. But the precise interpretation of the text by its perceiver is conditioned by the particular presentation chosen by its absent producer, the spin or the bias put upon it.

Habinek has recently described the capacity of writing to

> 'expand the literate ego beyond the confines of the here and now of speech production' (Habinek: 2009, p.136).

With this statement he is also referring to the symbolic power of writing, as above described, to its essential portability and also to its potential for extension beyond its initial producer.

---

[6] One of Searle's early illustrations was the statement 'It's cold in here' which may mean 'turn the heating on' or 'close the window' or any number of other things depending on its context of use (Searle, J. R. (1969) **Speech acts: an essay in the Philosophy of Language.** Cambridge: Cambridge University Press).

Pragmatic interpretation of language means that a written text, once independent of its creator, is susceptible to different interpretations, to insertions into new contexts and to uses far beyond the reach of its first purpose. It makes sense, given this, that the material characteristics of writing should be an integral part of its study. The visual properties of writing are one of its most powerful pragmatic tools – they affect and condition the receiver's hypothesis of context. The physical appearance of Roman documents of all kinds was specifically designed to match its purpose.

These remarks are intended to support and explain my own subscription to a view that sees the higher administrative authorities, including possibly the Emperor himself, as designing, deliberately organising and giving thought to the appearance of the writing that state representatives, including those in the army, were to use in the documents they wrote on behalf of the state and as transmitting regulations concerning this to even the smallest military outpost. While there is traceable in the evidence for writing, a natural, organic evolution of Roman letters there are also times and occasions in which an 'artificial', organising influence behind script change is the most likely explanation, as will be suggested with illustrations from the letters of the alphabet in later sections of this thesis.

Albertine Gaur expresses the purpose of a particular writing style (specifically 'calligraphy') as being to act as a 'corporate logo' for the whole extended group (Gaur: 2003, pp.126-140). Few people, in the West at least, can even today be unfamiliar with the 'capital' letter as inscribed on countless state Imperial inscriptions and unable to define it as 'Roman'.[7] Morison long ago in a work still original called its use political (Morison: 1972). The Emperor Charlemagne in similar fashion in the early Mediaeval era had developed for the use

---

[7] The term "capital" as used here is used to describe a majuscule letter-form that varies stylistically over the Roman period but which approximates to the forms we today call 'capital' letters.

of his state documents and as the stamp of his civilisation a new style of bookscript, 'Caroline minuscule', the precise form of which was widely used throughout Western Europe.

All these illustrations make the point that writing and the appearance of writing is important to states and recognised as such by them. The 'symbolic' function of writing, as observed by Callie Williamson and Mary Beard, can be theorised as a component of the pragmatic. It is a constitutive part of the meaning of a text, not something additional to it. It results often in a manipulation of power in the viewer's relationship with the text and produces the sort of emotion felt by Ovid's Mars when he looked at the name of Augustus writ large on a building.

However, if we are ever to understand the operation of the mechanics behind the use of writing in the empire we must begin by examining the evidence for the men who produced it, and look also at the results of their work. This thesis will argue that the Roman soldier scribe at Dura-Europos in his professional clerical capacity wrote out functional and operationally important documents and that he took pride in his craft. It was he who

'expose[d] the materiality of the word' (Habinek: 2009, p.136).

He worked for and was trained by the official authorities and wrote in the way he had been taught and according to inherited principles. In thus doing, he transmitted the image of the institutions to which he belonged and to whom he was necessary and valuable.[8]

I begin my investigation of these ideas in the city of Dura-Europos and my key focus of interest is the enlisted clerks of the unit with the name of the '*Cohors XX Palmyrenorum*'.

---

[8] Or for the privately employed scribe, conform to the standards required of the client (Lewery: 1989, p.14).

These men were apparently responsible for drawing up the so-called 'Dura papyri', the standard documents of this same unit.

2.   DURA-EUROPOS

2.1   ARCHAEOLOGY AND EARLY HISTORY

In 1920, Dura-Europos was 'discovered' by British army soldiers camping out in the Euphrates region. These soldiers' accounts of what they had seen fired sufficient enthusiasm for excavations eventually to begin some two years later, under the direction of the Belgian archaeologist Franz Cumont, recounted in a very readable book by one of the early site excavators (Hopkins: 1979). In 1928, the earlier workers were joined by an archaeological team from Yale, and the excavations continued, relying for labour, as the Romans before them had done, on the people of the region. Earlier enthusiasm, driven in particular by discoveries of the city's magnificent frescoes, faded a little in the face of practical difficulties and slow and somewhat sporadic excavations were terminated entirely during the Second World War, much work carried out prior to it being still unpublished to this day.

Simon James' recent report on the arms, armour and other military equipment is the latest in a series of nine projected such reports to appear treating different aspects of the archaeological finds (TEAD-Arms: 2004). In it, he presents material excavated in the years 1928-37.[9] The 'Final Reports', of which James's work is the second (the first being TEAD-P&P: 1959), aim to follow and complete, revising where necessary, the earlier series of nine 'Preliminary Reports' (published over the period 1929-1952). No Preliminary Report was prepared of the tenth and final season's excavations, but a short account by Matheson appeared in 1992 (Matheson: 1992). Sporadic publication by the Mission Franco-Syrienne of a series of Doura-Europos '*Études*' also began appearing in the 1990s (Leriche: 2004 for a full bibliography).

---

[9] In addition to these and other references cited in the bibliography Simon James has a Dura-dedicated website, also with further references Dura Europos, 'Pompeii of the Syrian Desert' [online]. http://www.le.ac.uk/ar/stj/dura.htm, [Accessed January 18th 2010].

All this work had clearly lain long overdue and there is still now more to be done, including, importantly for this study, publication of the graffiti and inscriptions from the site. Fergus Millar, a respected authority on the ancient Near East, urged attention to this in 1991, commenting that without full publication of the epigraphic material a critical evaluation of Dura as a city is not possible (Millar: 1993, p.407). His remark has implications that potentially affect some of the arguments in this thesis. However the work here does not claim to be an exhaustive study of the whole corpus of writing at Dura and treats only a few examples in detail. The papyri in any case have now been fully published twice (TEAD-P&P; ChLA VI-XI).

Excavation at Dura has been patchy overall and its results, relatively speaking, understated. Reeves has recently written a critique of some of the work in the earlier studies, and has also pleaded for further attention to be given to what she calls the city's 'rich information' (2004, pp.25-28). The conjunction of an abundance and great variety of surviving evidence from the city is important to the study that follows here, and my sympathies are with Reeves when she argues that the site, given its potential, has been much neglected (Reeves: 2004, p.4).

Dura began its history as a small defended settlement perched on a rocky outcrop above the banks of the Middle Euphrates. 'Dur' is an ancient Semitic prefix meaning 'fort' or 'city' and this is perhaps reflected in a cuneiform clay tablet dating from c.1900 BCE found in the city and bearing the name 'Dawara' (Cumont: 1926, cited by Francis: 1971, p.424; Reeves: 2004, p.29 & Note 4). No small part of the attraction of the settlement to all its invaders was the natural strength of its position: set on a plain with deep tributary gorges, 'wadis', to north and to south and the river itself on its eastern edge over which it towered at the top of a cliff some fifteen metres high (see annexed Plate 1). These natural features were enhanced in the

Seleucid Macedonian era by the city's strong circuit wall, still standing today to several metres in height and topped with fortified towers ([Plate 2](#)).

The early settlement became a Seleucid veteran colony in c. 300 BCE and was then simply, the Mission Franco-Syrienne have said recently, 'a small military garrison on the citadel hill' (Leriche: 1997, cited Downey: 2000, p.155; Reeves: 2004, p.31). In this period, within its ramparts, the internal space was regimented into identical rectangular blocks separated by straight roads perpendicular to each other. Also at that time the town was renamed 'Europos', 'after Seleucus' native town of Europos in Macedon' (Ball: 2000, p.166; TEAD-Arms, p.11). The Romans were later to revert to the name 'Dura' and the compound 'Dura-Europos' is entirely modern (Welles: 1951, pp.261-2; Reeves: 2004, p.17 and with a detailed breakdown of all the city's names, pp.217-219 Appendix B).

After some 200 years of Seleucid occupation, in 113 BCE Europos was again conquered, this time by the Parthians, and except for a short period when Trajan briefly took control (115–117 CE) belonged for almost three centuries to the Parthian Empire. Edwell gives a survey of the foundation and early history of the city in both Seleucid and Parthian periods in his recent book (2008, pp. 97-115 with further bibliography. Other important works are Millar: 1993; Ball: 2000; Butcher: 2003; Potter: 2004; Sartre: 2000: 2005). The city did not change radically in character under the Parthians, but remained predominantly Hellenistic in its institutions and its administrative rulers, since the Parthians left these largely in place to govern on their behalf. The traditional structure and rights by inheritance of the Macedonian aristocracy was also apparently left untroubled (Dirven: 1999, p.5). Greek remained the official language of use in the city.

Indigenous peoples throughout the period were also increasingly attracted to Dura and gradually assimilated into the city's mixed culture. They probably arrived, many of them, down the road that ran into the city, piercing the circuit of the walls through the great Palmyrene Gate on the city's western side. Across the desert terrain, the road led to the city of Palmyra, 225 km. or a five day camel ride away, an important city that was thriving on Roman support and the profits of its rich trading community (see the annexed map of the region (Plate 3). In Dura, there was much new building and construction to accommodate the new arrivals. The city's townspeople prospered from trade in the fruits of their agricultural produce, grown and harvested on the banks and plains of the great Euphrates river to which the city had easy access.

The outlying area of the city on its western side was desert steppe, but the land along the river banks was fertile and intensively cultivated throughout its length. It had always been a focal point for life in the region and agriculture had been practised there from early in the city's existence (Edwell, 2008, p.217, Note 134). Several papyri (including of the Latin ones, P. Dura 64A, and P. Dura 129) refer to agricultural activity on the Euphrates and lower Khabur rivers.[10] The river also provided a very important transport route across the region, being a comfortable and fast communication channel (Dabrowa: 1997). An important road followed along its banks

> 'connecting Lower Mesopotamia and northern Syria, the route which any large force
>
> would follow on the western side of the Tigris-Euphrates region'

---

[10] The numbering of the Dura papyri is difficult. On their discovery they were given inventory numbers, but renumbered by Bradford Welles *et al* in their edition. For the purposes of Marichal's edition which inserts the Dura collection into the comprehensive corpora of documents ChLA, the papyri are assigned ChLA numbers and scholars often refer only to these. The latest publication of the Dura papyri is the **Yale Beinecke Library** website (2004) [online]: http://beinecke.library.yale.edu/papyrus/ [Accessed 18th January 2010]. The editors here use Yale's own inventory numbering system. I refer readers for convenience to my concordance of all three systems presented in Appendix 1 which also includes R.O. Fink's numbering (RMR: 1971) and that given by Marichal (ChLA IX: 1977, pp. 82-106).

and over which Dura was an excellent vantage point for surveillance (TEAD-V: 1934, p.22). Reeves regards the town's citizens as belonging to a wider community of villages and fortifications up and downstream (Reeves: 2004, p.30), an idea also supported by Edwell (2008, p.80). There is evidence to support it, for many of the papyrus documents came to Dura from the settlements out in the wider Dura-Europos region and these show Dura's role as an administrative centre.

The local nomadic peoples were a constant element throughout Dura's life. They form the base of the mix of cultures in all its ages. Gawlikowski, in his careful survey of the racial composition of Syria in the Roman period, stresses the importance of the indigenous Arab nomads to the existence of Dura and their contribution to its artistic and architectural styles. According to him, it was the 'Arab desert tradition' that probably gave most to religious beliefs in Roman Syria generally; the widespread devotion to the Sun god for example, and

> 'the habit of conceiving various deities as warriors, often wearing Roman legionary gear' (Seyrig: 1970, cited by Gawlikowski: 1997, p.47; also Sartre: 2005).

The term 'Arab' in his definition, as also in my use of the term, refers to a way of life, essentially nomadic, and not to a race of peoples (Gawlikowski: 1997, p.41). As such, it equates to modern use of the word 'Bedouin'.

Almost 300 years after the Parthians had arrived, in the time of the Severan emperors, the city, retaining its Greek style plan but otherwise Parthian in architecture, came finally under sustained Roman occupation. It was taken in the Parthian campaign of Lucius Verus in 165 CE under the command of the Syrian born senatorial commander Avidius Cassius, possibly by siege (Dirven: 1999, p.9; Edwell: 2008, p.116 with further references). From this point forward it was to be retained under Roman military occupation, becoming a *colonia* probably

also under Septimius Severus (Reeves: 2004, pp.42-3; Sartre: 2005, p.196). The Romans however, are a small part of the city's long history, having been resident there for less than a century, a century that was in fact to be the last of the city's existence (Teixidor: 1987, cited TEAD-Arms, p.11; Reeves: 2004, p.33).

2.2   UNDER THE ROMANS

The Euphrates frontier zone within which the army at Roman Dura-Europos was based was eventually to become, as the Latin documents from the city testify, susceptible to what Millar has called

> 'an exceptional degree of Romanising influence, from the widespread conferment of the rank of *colonia* to the popularity of gladiatorial and wild-beast shows' (Millar: 1993, p.235).

In this section I summarily survey the history of the Roman forces in the city of Dura-Europos and sketch out the key events in the newly-Romanised city over the period.

In the transition from Parthian to Roman occupation and in the early days of the Roman presence the town changed little outwardly. The city's Parthian temples continued to be important, as did her Greek institutions, and though there were subtle modifications to everyday life, there was probably not initially largescale reorganization, a new building programme or any 'deliberate attempt to Romanize Dura' (Downey: 2000, p.172; but cp. Ball, 2000: pp.261-72). At first, in any case, the Roman presence in Dura was small, and following Verus' conquest until some time in the 180s, the majority of soldiers in the town were native Palmyrene archers (Millar: 1993, p.115). These men may have formed the base of what became the *Cohors XX Palmyrenorum*, the unit responsible for the production of most of the papyrus documents found at Dura, but they seem not immediately to have been regulated officially into the army and were part of 'the municipal *militia* of Palmyra' (TEAD-P&P, p.24 with Note 4; Dirven: 1999, p.14; see further 2.3 below).

Palmyra had been part of the Roman Empire since the first century (Millar: 1993, p.35). As a city it had long been an important trading centre and it was prosperous with a growing population. For the Durenes, their city's proximity to Palmyra continued to be important (Edwell: 2008, p.144). However, Dura's own more strategic location was to make this later settlement increasingly important to Roman control of the Middle Euphrates region. The above-mentioned military success of Lucius Verus had marked the stepping-up of Roman pressure not only over Dura itself, but over the wider Middle Euphrates/Khabur rivers region to which it was central, and on the accession of Septimius Severus, this Emperor's similar desire for conquest of the region and for expansion of his territory was exemplified in his own engagement in a Parthian war, co-fought and continued under Caracalla. Severus marched his army down the Euphrates, sacked Ctesiphon (south of Dura) and formed a new province of Mesopotamia (Butcher: 2003, p.48; Sartre: 2005, p.511; Edwell: 2008, p.31). From this time forward there was correspondingly a greater military presence in Dura itself. The first known regular unit in Dura, probably in town from the end of Verus' Parthian War but attested there only in 193 CE, is the *Cohors II Ulpia Equitata* (TEAD-P&P, pp.24-5; Speidel: 1998, p.172).

Early in the period a few buildings in the city were put up, including the training ground and perhaps a small temple to the Imperial cult, these being, according to Downey 'judged essential for the functioning of the military' (Downey: 2000, p.173). If this is correct, it would show that immediately important to the army on moving in was exercise and training and equally perhaps due obeisance to Rome's spiritual figurehead, the Emperor, responsible after all for their own military success (Herz: 2007, p.310). The archaeological details remain unclear, but it is possible also that in c.205-208 CE a more substantial building programme was embarked upon related to the growing military requirements (Dabrowa: 1981, p.65).

Certainly, from henceforth the traces of army occupation in the ruins become more apparent. Patterns of life in the city at the time however probably still remained relatively undisturbed.

With the accession to the throne of Ardashir in 226, the first Shah of the Persian Sassanids, the Romans came under attack from his army throughout the region. Over the next few years therefore they gradually moved more troops into the wider locality generally, if not into Dura itself (Potter: 2004, p.166). Persian pressure on Dura was sustained from that time forward, and Dura in its later days undoubtedly housed a large Roman army, the total troop number in the third century there being, according to James's broad estimate, 'probably between 3,000 and 5,000' (TEAD-Arms, p.19; see also Pollard: 1996, p.212). Troop quantities are difficult to assess in the current state of understanding of the city but James is an archaeologist with better knowledge of soldiering at Dura than most.

The phrase '*in hibernis*' as used in a papyrus report to refer to soldiers from the *Cohors XX Palmyrenorum* suggests that the city was an administrative and probably logistical base for this unit whose members would often have been vexillated away from the base at other times of the year (TEAD-Arms, p.19 referring to P. Dura 89. I. 5, 11; II. 5). The Dura camp also served as an administrative centre for several other military units based, at least at times, elsewhere in the region. The marriage contract of a soldier of the *Cohors XII Palaestinorum* (P. Dura 30, in Greek with Latin witness signatures), for example, was deposited in Dura in 232 CE. This unit is not otherwise recorded in Dura and was probably stationed out in the region (TEAD-P&P, p.154).

A veteran soldier of the *Cohors III Augusta Thracum* (another unit unknown otherwise in Dura) purchased local land in 227 CE as attested in a surviving deed of sale found at Dura (P. Dura 26, in Greek with Latin signatories). Other regiments known to have had vexillations

stationed in or near to Dura at some point over the Roman period include the *Legio III*

Cyrenaica, Legio III Gallica, Legio X Fretensis and the auxiliary *Cohors II Paphlagonum*

(Dabrowa: 1981, pp.63-4, Note 16).[11]   It is certainly additionally possible that, as Dirven

comments, many detachments may have spent time in or near the city but have left no record

of their stay (Dirven: 1999, p.15).

Given the increased troop activity, a network of small Roman military settlements developed

both up and down river from the city and the Dura papyri show that detachments of men from

the *Cohors XX Palmyrenorum* were stationed for shorter or longer periods in the outlying

towns, villages and occupied fortifications (Welles: 1951, p.258; Pollard: 2000, p.25 and

Chapter 1). Their rosters, P. Dura 100 and 101, some more certain readings than others,

record troops stationed in places named Barbalissos, Becchufrayn, Bartha (and possibly

Birtha), Capera, Castellum Arabum and Magdala (TEAD-P&P, p.44). Since Barbalissos was

approximately three hundred kilometres up river from Dura, this demonstrates that the Roman

presence was extensive over a wide area. Roman soldiers must therefore have become quite

familiar throughout this region to local people who had been in any case long accustomed to a

multicultural environment.

There were other Roman garrisons too in the location. The town of Sura where the army had

a base, approximately a two hundred kilometre journey away on the Euphrates, had been

under Roman occupation from as early as the Flavian period (Pollard: 2004, p.121). The city

of Hatra had formed an alliance with Rome in probably c.231-2 CE and Roman detachments

---

[11] Auxiliary cohorts are those regiments of the Roman army that in the Republic and earlier Empire had been exclusively composed of non-Roman citizens although this stipulation was later considerably relaxed. The literature relating to them still begins with (Cheesman: 1914), outdated in many respects, but never fully replaced according to most, although Holder's 1980 publication perhaps hoped to do this (Holder: 1980). Spaul provided a catalogue of the inscriptional evidence for known cohorts throughout the Empire (Spaul: 2000). The so-called 'ethnic units' had earlier in the Empire been considered inferior in soldiering ability to the legionary troops but this distinction, particularly after 212, had lost its importance. On the general rise in status of the auxiliary cohorts see (Speidel: 1984; Davies: 1989).

left inscriptions there in 235 under Gordian III (Oates: 1955). The settlement of the region as it is currently known in the detailed map Edwell includes is useful and Pollard's of known settlements in his Appendix A is long, but neither of these may yet prove exhaustive (Pollard: 2000; Edwell: 2008, p.68).

Welles observed, in his study of the population of Dura, the altered character of the people of the city after the Roman arrival. He believed that the previous mix of largely Aramaic names typical of the desert region in which Dura was located, became noticeably less local, more broadly Syrian and showed also a broadly Greco-Roman influence. This change would be accounted for by the increased number of soldiers in the city. Commenting that

> 'after the Roman occupation [Dura] became an undistinguished part of the Roman Levantine world sharing that uniformity toward which the Empire led',

he considered that the native elements of the city's population probably became far less prominent in relation to the variety of both newly-arrived Greco-Latin speaking soldiers and of Syrian soldiers from elsewhere in the wider area. Roman soldiers would have brought with them an associated population, of traders for example, and there would also have been a growing number of settled veterans with families (Welles: 1951, pp.271-4; Dabrowa: 1981, p.68).

All the Dura reports, and particularly the Fifth Final Report which publishes the papyri (TEAD-P&P), illustrate that texts discovered at Dura, although mostly written in Greek, are also in Latin, Aramaic, Hebrew, Middle Persian and Safaitic. The epigraphic record also shows that there were Palmyrenes present, Syriac appears for the first time and even Iranians apparently jostled alongside the native Durenes (Francis: 1971a, 1971b). The gods too, are taken from many traditions and the evidence for the city's artistic environment is equally

multicultural (Millar: 1993, pp.467-471). The result was that the city, probably increasingly, took on what Sartre calls a 'cosmopolitan character', being 'a kaleidoscope of languages, cults and costumes' (Sartre: 2005, p.194). The pluralism in the context of daily life at Dura might also perhaps be construed as conveniently dividing loyalties amongst the population such that there could be little united opposition to the growing Roman influence in the period.

The Euphrates continued to be the life-blood of the whole region. The Romans kept no permanent fleet on it and did not fortify it heavily, but the network of Roman posts and settlements along it sat on the frontier between Roman and Persian territory. The soldiers stationed there would have been particularly concerned with 'control and reconnaissance' (Dabrowa: 1997, p.111). Larger military bases would also have played host to passing dignatories and to senior officials visiting the area as part of their own intelligence-related activities (Austin & Rankov: 1998). P. Dura 60 for example, is a copy of a letter originally sent to the provincial procurator instructing him to prepare troops in the region to receive a Parthian envoy. The procurator seems to have had the instruction recopied and sent out 'from the governor's office' in Antioch to the regions (RMR, p.399). It lists four local settlements, in addition to Dura itself, which probably also received copies of it. The communication process involved here has been discussed by Nelis-Clément (2006; also Haensch: 2006).

Dura had its own port at the foot of the cliffs on the city's eastern edge. It was an important facility given the city's position and the potential the river offered for the transport of goods, large items in particular. James has recently proposed that a key route into Dura's military area ran upwards from the river port and entered the camp through a ceremonial gateway (James: 2007).[12] He thus envisages dignitaries arriving at the port and passing into the city with pomp along established, suitably dignified routes. Such a scene again suggests that the

[12] Another route progressed through the town from the Palmyrene gate on the western perimeter wall.

military presence in the town was becoming more intrusive in the lives of Dura's townspeople. Local bureaucracy was also changing in character as the soldiers of the garrison gradually took over its administrative duties (Edwell: 2008, p.64).

As for the accommodation of the military in the city, the first military arrivals were probably usually billeted out in houses and pre-existing town buildings. Barracks were also gradually built for at least some men in the northern section of the city, forcibly removing former occupants and converting pre-existing houses where necessary. Soldiers also put up several new temples to house their own cults. The Middle Mithraeum, for example, was built in 209-211 CE to house this specifically military-associated cult perhaps particularly favoured by Palmyrene archers (Dirven: 1999, pp.260-1; Pollard: 2000, pp.144-6). The temple to Dolichenus, probably also built c. 211, was for the practice of another cult exclusively worshipped in the military at Dura-Europos (TEAD-P&P, p.25; Edwell: 2008, p.119). A representation of Dolichenus is shown in Plate 4. All such cults would help to reinforce military solidarity, increasingly necessary given the growing numbers of troops.

In 211-2, the Roman army more clearly demarcated themselves in the city's north-western quarter by putting up a mud brick wall several metres in height, separating their camp from the rest of the town.[13] The wall, roughly 1.65 metres wide, dated on the basis of a badly damaged inscription, is marked with a thick black line on the excavators' plan of the Roman city (Plate 5) discussed most recently in Edwell: 2008, p.48 with further references; also Reeves: 2004, pp.140-2).[14] The key military buildings, in a space about half the size of a

[13] Throwing this earlier relatively tidy picture into some disarray Lenoir and Licoppe, in their recent reanalysis of the site, think it likely that the northern section of the town had been, as early as the 165 CE conquest, 'a sort of reserved quarter' for troops (Lenoir & Licoppe: 2004, p.57; James: 2007, p.31). This might suggest earlier sequestration and organisation of the army than had once been thought but further conclusions of the archaeologists are necessary to determine the picture more precisely.

[14] This has now been slightly modified by James (2007, p.30, Fig. 1).

legionary base, were situated within the 'c. ten hectares (fifteen blocks of houses)' it enclosed and the garrison henceforward could now function more formally (Pollard: 2000, pp.104-109).

Gelin has recently established that the *principia*, the southern boundary wall and the complex known as the '*Palace of the Dux Ripae*' were all built together in 211-212 and that several other important military buildings are also datable to within 211-216 CE including new barracks (Gelin: 2000, cited by James: 2007, p.31; Edwell: 2008, p.119).[15] The construction of the small amphitheatre (block F3), also inside the camp area, marks the end of the building phase (Downey: 2000, p.163; TEAD-VI, pp. 68-80, No.630, cited Pollard: 2000, p.52). Most new camp buildings were built over earlier buildings belonging to the Parthian city, although some Parthian constructions were modified according to military needs. Again, the Romans, due to their increasing numbers, were both making their presence more obvious in the town and regularising their military practices.

The existence of the camp dividing wall is a significant element in the Roman character of Dura but its function remains uncertain. Pollard questions the conventional view that it functioned to restrict civilian access to military areas. He recites the evidence for the presence of civilians inside the camp area and particularly in the Temple of Gadde (H1), the Temple of Azzanathkona (E7) and the Temple of Bel (known as the Temple of the Palmyrene Gods, J3/5), all of which specifically attest soldiers of the *Cohors XX Palmyrenorum* (Pollard: 1996, pp.214-5; Pollard: 2000, pp.91-104, 109). While in certain areas of their lives the soldiers were no doubt developing a sense of '*Romanitas*' that was specific to them as Roman

---

[15] Hopkins and Rowell throughout their TEAD-V (1934) used the word '*praetorium*' to refer to the official headquarters. Rostovtzeff (TEAD-IX.3: 1952, p.85) noted that '*praetorium*' more commonly refers to the commander's house and advocated the use of '*principia*' for the military headquarters. Subsequent scholars (most recently Edwell: 2008, p.120) have agreed with Rostovtzeff against the earlier writers and I follow their lead in this.

soldiers and that was relatively impervious to civilian influence, they also mingled with civilians in certain spheres of their lives (Dirven: 1999, pp.157-189; Reeves: 2004, pp.169-193). The soldiers were not simply the town's hostile police or security force.

By c. 245 CE, they may have been under the leadership of the '*dux ripae*', thought to have been resident in a Palace at the northern edge of the plateau, above the river (TEAD-P&P, p.23). Gilliam had proposed that the names of four such commanders were attested in the evidence and assumed these to have had jurisdiction over a substantial area of the whole region (Gilliam: 1941). This idea has recently been strongly challenged by Edwell who finds the evidence - effectively 'one *dipinto*' found in fragments on the palace floor – insufficient (Edwell: 2008, p.130 referring to TEAD-IX.3, p.30, No. 945, Pl. X, 2). Edwell also argues that the existence of such '*duces*' has been used as the foundation stone for other assertions about military life and its operation at Dura-Europos, and as he does so exposes what does indeed seem to be a circularity in Gilliam's argument (Edwell: 2008, p. 131).

Whatever the case for the '*Dux*' commander, however, the increasing troop numbers at Dura in the later decades of the Roman occupation was certainly a response to sustained pressure from the Persians all along the Empire's Eastern frontier. Indeed, the Sassanians may have made a probing attack on the city as early as 238 and been repelled, thanks perhaps to the bravery of Julius Terentius, the tribune of the *Cohors XX Palmyrenorum*, who, according to the funerary inscription (in Greek) put up for him by his wife, was killed in the battle (Welles: 1941; TEAD-IX, 1, pp.176-85; Cumont, 1926, p.357, No.3; Lieu: 2007). Eventually the Sassanians did prove a match for Roman Dura, and it fell to them in its final siege 'in or after 256' during long decades of struggle throughout the Eastern provinces (James: 1985; TEAD-

Arms, p.11; Lieu: 2007, p.50).[16] Its walls were broken down and the city was destroyed. Ammianus Marcellinus in his history reports that the Emperor Julian saw its deserted ruins while travelling in the area in 363 CE (XXIII, 5, 7).

---

[16] Or possibly but 'less likely' in 255 CE.

2.3   THE *COHORS XX PALMYRENORUM*

The *Cohors XX Palmyrenorum*, a unit of mounted archers probably raised from the neighbouring city of Palmyra perhaps already present at Dura in the Parthian period, were the auxiliary regiment stationed there to whose archive the 'paperwork' found in the camp at the city belonged. In this section, I set out their history as far as this can be known.

Syrian soldiers generally had a reputation for their mounted archery skills. Rome had begun using them in frontier regions in other parts of the empire possibly as early as the reigns of Trajan and Hadrian. Approximately half the total known Syrian cohorts are characterised '*sagittaria*' (bowmen) in their titles (Kennedy: 1989, p.241).[17] Of these, Palmyrene archers in particular had a reputation for their protection skills which they used regularly to defend goods and merchandise on trade-routes crossing the desert. In the second and third centuries there was increasing traffic in the region due to the growing Roman presence throughout the wider Near East.

Goldman refers to the many graffiti illustrations of mounted archers dotted all over Dura-Europos, as Cumont had also noted earlier (Cumont: 1926 p.265 and Pl XCVIII; Goldman: 1999). Therefore, it seems that a Palmyrene force of bowmen was present in Dura early in the Roman period but their status and situation there, particularly in the earlier years, remains unclear. They were not at first fully incorporated into the army and the date on which their formal military membership began is uncertain. At some juncture, however, their unit was regularised as an auxiliary cohort and incorporated into the Roman army (TEAD-V, p.24). The first dated textual evidence for the fully-formed cohort is a papyrus dated 208 CE (P.

---

[17] More specialised literature on aspects of military life and of soldiers covers a huge range. General background to the Roman army can be found in (Campbell: 2005; Pollard: 2006; Erdkamp: 2007).

Dura 56)[18] but the regiment had probably been regularised several years earlier than this. Gilliam thought that this was probably soon after Roman possession of the city in 165 CE.

There is limited evidence for the cohort's early presence at Dura. An undated inscribed dedication in Palmyrene to Iarhibol - a popular Palmyrene deity - that Dirven dates between 165-194 CE (Dirven: 1999, pp.233-235, No. 16 and Pl. VI) was put up by a group named 'the archers'.[19] A cult relief in the Mithraeum (datable to 168 CE) has a dedication by Atpeni in Palmyrene, a man described as the archers' commanding *strategos* (TEAD-VII/VIII, p.83-4, No.845; Dirven: 1999, pp.262-3, No.27, Pl. VIII).[20] It certainly seems possible that, as Dirven thinks, the archers stationed at Dura formed the nucleus of the known Palmyrene Roman cohort (Dirven: 1999, p.14). Their reconnaissance and archery skills would have been particularly useful in desert terrain. Riding either horses or camels and expertly armed, they had already proved themselves

> 'essential in assisting Roman consolidation of gains made …[and in] protecting
>
> Palmyra from desert tribal attacks' (Edwell: 2008, p.32; see also Millar: 1993, p.115).

Auxiliary troops were customarily named after the place from which they had been recruited, and the title *Cohors XX Palmyrenorum* is only attested at Dura (TEAD-P&P, p.24; Spaul: 2000, p.434).[21] The title, then, ought to mean it was the twentieth cohort to be raised from Palmyra, but this is thought too large a number of such units to be raised from one city alone.

---

[18] A fragmentary but original letter from the regional governor addressed to Ulpius Valentinus, then tribune of the cohort.

[19] Brown in his first edition had dated this to before the Roman occupation of Dura (TEAD-VII/VIII, pp.279-82, No.909, p.163 and Pl XXV).

[20] Also two other Greek *dipinti*, one dated 171 CE, in Dirven (1999, pp.164-5, Nos. 28-9, Pl. IX = TEAD-VII/VIII, pp.83-5, Nos. 845-6). One of these commanders perhaps transferred to Dura after service in another region of the Empire, such transfers being 'quite common' among Palmyrene officers (Francis: 1971a, p.431, Note 36).

Mithraism may have originated among Syrian archer units early in the empire and been brought to Dura by the Syrian troops (Dirven: 1999, esp. p.185, Note 100).

[21] For fuller titles given to this cohort see Spaul (2000, p.434). Gilliam, rejects earlier restorations to '*eq(uitata) sag(ittariorum)*' (TEAD-P&P, p.26, Note 1).

Kennedy has reinterpreted the numeral to mean that the cohort was 'the twentieth unit to be raised from the province' (Kennedy: 1994, p.91).

Kennedy, whose authority on the Syrian army is long-standing and who bases his argument on deductions made on the basis of the enlistment dates in the Dura rosters (P. Dura 100 and 101), proposes that the cohort was formed in 192 CE. However he also thinks it possible (but has no evidence for it) that the unit had been officially raised in 175-176 CE on the occasion of a visit to Syria by emperor Marcus Aurelius and that their purpose was, at that time, to further secure the city in its position as the first stronghold on the Parthian frontier during that emperor's campaign there (Kennedy: 1994, pp.91-95). If this is correct, it suggests that the cohort, presumably already quite large, was particularly important given its relatively long-standing experience in the city and in the region itself. It is likely it had priority at Dura-Europos and that it gained in status and importance as a result. Logically, as Kennedy remarks, their natural acclimatisation abilities in their home terrain would have been a particular strength and were probably superior to those of their colleagues from gentler western climes (Kennedy: 1989, esp. p.242).

Militarily, given the position of Dura, the troops' knowledge of the local enemy and their experience of the desert, the *Cohors XX Palmyrenorum* could have been extremely important. The papyri, as understood by M.P. Speidel, seem also to show that, at least between 219-222, all recruits and transfers that were to join the cohort were posted first to the *singulares* guard of the Syrian governor for training (Speidel: 1984a, p.308 and Notes 27-8). For example P. Dura 66, he argues, records the release of twenty-eight men to the cohort by the Syrian governor in 216 CE. Speidel's supporting argument, resting on a reading of Cassius Dio, that the 'Europeans' at the siege of Hatra were in fact crack troops from Dura-Europos has been

attacked by Kennedy (1986; *Dio* 75.12.4-5). It rests also on his reading of the inscription

honouring Geta dated 211 from Dura which, he argues, mentions 'Europeans', but this

requires a generous and frankly tenuous, restoration. The above-mentioned evidence in the

papyri as set out by Speidel, however, appears most convincing. The idea that Dura's

garrison may have housed the earliest known example of élite provincial troops is interesting

in relation to the exceptionally high quality of their unit documents, to be demonstrated in the

discussion to follow. It would presumably also mean that the *Cohors XX Palmyrenorum* was

an important unit which may have commanded the respect of the soldiers of other units based

in the region (Reeves: 2004, pp.39-41).

The cohort's 'milliary' size - with c. 1040 as against the standard 600 men - is a common

feature of Syrian cohorts, but this unit was unusual in its internal organisation (Kennedy:

1989). Milliary cohorts were usually organised into ten centuries of approximately eighty

men each, and had six cavalry *turmae*; but the documentation of the *Cohors XX

Palmyrenorum* suggests that it was a force numbering only six centuries and five cavalry

turmae (TEAD-P&P, pp.30-31).[22] Part-infantry, part-mounted, i.e. a *cohors equitatae*, the

cohort was illustrative of an innovation in organisation introduced in the Principate which had

become increasingly common under the empire, particularly in the armies of the provinces

(Davies: 1989, pp.141-8; Spaul: 2000, p.528). Such units were probably quite expensive to

maintain, but under the command of the provincial governor they could be used all the year

round for internal surveillance duties and for 'external projection of force' (TEAD-Arms,

p.14). They customarily fought and were brigaded with the legionary cavalry.

---

[22] P. Dura 100 (219 CE) shows that c.1210 were enrolled at the time, P. Dura 101 (222 CE) c.1040, P. Dura 82 (233 CE) c.1171 men and P. Dura 89 (239 CE) lists c.1050.

At least some of the Palmyrene cohort troops were *dromedarii* (camel riders) (Dabrowa: 1991).[23] Many of the Eastern auxiliary units had these troops among their men and they would very probably have been used, as James suggests,

> 'for specialist tasks within the steppe/desert zone, such as scouting, supply convoy escort and police tasks' (TEAD-Arms, p.19).

Many papyri attest to communications between the scattered Roman troops in the region and the easy competence of these riders in desert terrain may well have been largely responsible for the successful transfer of such documents. Written communications between units at different outposts and from units to base was important in keeping track of troop movements and in ensuring their safety. The progress of missions would certainly have had to be reported back to base and updates relayed regularly to the provincial authorities (Austin & Rankov: 1988; Haensch: 2006; Nelis-Clément: 2006). Many letters received into the roughly contemporary, and therefore comparable, camp in Libya at Bu Njem, for example, had been written by members of the garrison of Bu Njem dispersed out in the locality on commissions who reported back to their commanding officer (Adams: 1994, p.88).

The cohort seems always to have been commanded by a tribune although Julius Terentius, the last, was replaced after his death by a *praepositus* and no later tribune is recorded (TEAD-P&P, p.28). The surviving papyrus fragments of correspondence with cohort tribunes preserve two original letters written to them from the provincial governor (P. Dura 56 and 59). Another cohort tribune Justillus also received a letter (dated 221 CE) addressed to him in person by a regional procurator (P. Dura 64). It seems therefore that the cohort's commanding officer himself dealt directly with provincial headquarters and with other

---

[23] Mentioned in P. Dura Nos. 82, 88, 89, 91, 94, 100, 101 and 102.

officials without reference to a superior at Dura (TEAD-P&P, p.26). There is no record in the

papyri of any other superior garrison commanding officer to whom the governor's

correspondence would more normally have been addressed.[24] Again, this could indicate the

importance of this cohort in the city.

The unit having probably been raised in, or in the region of, Palmyra would imply that its

troops were, mostly at least, Palmyrene in origin. Dura's proximity to Palmyra makes it quite

possible that the unit remained predominantly Palmyrene throughout its history but the names

of the cohort soldiers recorded in the papyri seem to show that the Palmyrene element in it

was by no means exclusive (Dirven: 1999, p.16; also Kennedy: 1989). Amongst the

Palmyrene there are also Iranian, Semitic (of several races), Latin and Greek names (Welles:

1951). However, the men's origins are generally difficult to elucidate, particularly because on

their enlistment all soldiers were given a new Roman name, either Latin or Greek. This

naturally obscures their born names and thus, the clue to their origin. Additionally, in the

great Dura rosters following Caracalla's edict, all the soldiers' names are carefully and

repetitively prefixed with the Imperial *nomen*. Some soldiers also have a second Roman

Imperial *nomen*, but most combine '*Aurelius*' with a Greco-Macedonian or Semitic

cognomen, sometimes followed by a genitive patronymic (Francis: 1971a, p.433; Pollard:

2000, p.128). Other Roman names at Dura are probably transliterations of Syrian equivalents.

However, many of the cohort soldiers do also have Palmyrene names and many of the graffiti

from Dura's Mithraeum are almost certainly to be associated with them for many show names

that also occur in the cohort papyrus rosters (P. Dura 100 and 101) (Francis: 1971a, p.432).

One name, left in graffiti by a soldier who calls himself *Raibelo*, appears six times on the wall

of the Temple of Azzanathkona, particularly to be associated with the cohort as we will see,

---

[24] Except possibly to '*duces*', twice, in P. Dura 97. Neither reading is entirely convincing.

and also appears as Ragdibel in a cohort roster (P.Dura 100, XXXIV, 23, 26; XXXVII, 2; ChLA-VIII: 1976, p.6). In the Temple of the Palmyrene Gods also, a graffito transcribing Aramaic names perhaps represents the same soldiers as appear with these names in the rosters. It is not known though, how common such names generally were and this possible association with the soldiers cannot be proven (Dirven: 1999, p.310, No. 55).

The cult of Jupiter Dolichenus is not typically a Palmyrene religion but the use (in P.Dura 89.I.13) of '*Iuppiter Dolichenus s(anctus?)*' as the cohort's watchword for the day may show that Palmyrene soldiers joined their fellow military worshippers in their cult dedications to this god (TEAD-IX.3, pp.97-130; Speidel: 1978a). In this, as in other areas, the cohort soldiers seem to show themselves receptive to wider Roman influence which may indicate that some soldiers at least hailed from elsewhere. Indeed many soldiers probably came to the city after service elsewhere and some of these may have been, or have become, members of the Palmyrene cohort.

Some may well have been raised in the Balkans (Pollard: 2000, p.119). Thrace, for example, was a largely Greek-speaking region whose natives were renowned for their ferocity. Its proximity, compared to say more Western regions, may well have made it attractive as a recruiting ground for Syria. A painted shield, argued by Rebuffat to show a route from the Balkans to Dura-Europos, may bear witness to a soldier travelling home from the Danubian *limes* to Syria, or equally, leaving Dura and returning homewards (Cumont: 1926, pp.323–327, Pls. 109-110; Francis: 1971b, p.154; Rebuffat: 1986). However Syrians, both raised locally to Dura and from the wider region, probably increasingly outnumbered other soldiers in the garrison as time progressed. Local recruitment was becoming generally more common, and the third century camp at Dura probably housed a variety of different ethnic minorities

but have yet remained 'mostly composed of locally-recruited men' (Cheesman: 1914, p.70; TEAD-Arms, p.xiii).

The *Cohors XX Palmyrenorum* perhaps remained stationed at Dura until the city's final fall but it is in fact last heard of in 251 CE (P. Dura 97). It may have perished at a battle in Barbalissos in 253 CE where at one time perhaps approximately 10% of the unit's strength had been stationed (Grenet: 1988, cited by James: 1985; TEAD-Arms, p.23; Edwell: 2008, pp.77-8). I have shown in this section that it had had, at least at one stage, a reputation for its competence and may have been trained by the governor. Its locally-raised troops, probably dominant in the unit, had exceptional native knowledge of the Dura region and its way of life and their tribune was an important figure in the city itself. It certainly seems possible then, given all this, that as Pollard envisages, the Palmyrene archers had once been at Dura 'the core of the garrison' (Pollard: 1996, p.212).

2.4 <u>CAMP LIFE</u>

The spatial separation of the military camp from the rest of the city behind the camp wall was noted in 2.2 above. Several scholars have additionally argued that enlisted Roman soldiers were in any case removed from the civilian population by their membership of, and allegiance, to the state army; and further, that it was important to the army that the separation between soldiers and civilians be maintained. Pollard, for example, a particular advocate of this view, is of the opinion that

> 'the army had a strong corporate identity and was set apart from civilians by its privileges' (Pollard: 2000, p.165).

He also applies to military life the concept of the 'total institution', a phrase coined by sociologist Ervin Goffman to describe a type of organisation which subordinates the lives of the individuals belonging to it (Shaw: 1984, cited by Pollard: 1996). Others who have argued in a similar vein, although commonly less strongly, include Macmullen (1984), Haynes (1999), James (1999) and Pollard (2004). F.G. Millar, on the other hand, preferred to stress the soldiers' integration into civilian life and was encouraged in this by the circumstance that their camp at Dura – as was the regular practice for bases in the Roman East - was based inside, rather than outside, the walls of the city and also that many of the soldiers, as noted in 2.3, were locally recruited (Millar: 1993, pp.130-133; generally Reeves: 2004).

This discussion stands largely outside the scope of this study and I shall not have occasion to consider it further. I suggest, however, that in spite of the wall's permeability it should stand metaphorically henceforth to represent the separation of soldiers from civilians, for activities outside the military barrier have no further interest here. The camp wall is a barrier, both

figuratively and in reality, and the everyday experience of communal army life would have been most keenly felt when the men were inside it.

All new recruits to the army set out on a path together which demanded they leave their families, learn new skills, follow new daily routines, wear new clothes, probably eat different style food, gain new friends, sometimes from distant lands who spoke different languages, take on new gods, the supreme of whom was a Roman emperor for whose people and territories they were trained and fought, learn new languages (at any rate Latin), perhaps also to read and write it, and above all, to honour and faithfully obey their Roman commanding officers. The elements of their new lives together formed a unity in the maintenance of which each man played a part. All they had previously known was, at least for the years of their military service, not of great interest or importance.[25] Once enlisted, the soldier was subject to new rhythms, new patterns of living. What took new precedence was soldiering for Rome, and all that that implied.

Auxiliary soldiers were attracted into the army probably principally by the pay, but there were also other incentives. The chances of improving living conditions and raising one's general standard of life were relatively good. The army also gave a man a specific identity and purpose and on his enlistment into a particular regiment, the newly recruited soldier was even given a new Roman name (Gilliam: 1957; Davies: 1969). The assumption of their Roman or Romanised names on enlistment at a stroke put a distance between the enlisted soldiers and their former lives and the strength of this separation would have been reinforced every time

---

[25] While traditionally service length is thought to be 25 years, Fink notes that the longest service recorded in the roster is 27 years and, 'at least 19 men in P. Dura 100 and 21 in P. Dura 101 [are] in their 26th year'. This he finds surprising, particularly because were the papyrus undamaged 'there might be still more'. In P. Dura 100, 43 men are in their 24th year of service (TEAD-P&P, p.33).

that the new name was used.[26] Once written into the unit rosters, the men assumed, at least in part, a new identity based not on race or ethnic origin but on their shared, wider army life and specifically within that, on their life in the regiment to which they belonged (Vegetius, *de Rei Mil.* 1, 26; 2.5; 2.7).

In their new living accommodation, soldiers housed in barracks shared their limited space with seven fellow soldiers, who probably prepared and ate their food together (Lendon: 2006). These men all wore an essentially identical outfit, differentiated only in the commonly recognised and obviously valued markers of status and duties, as shown for example in the significant detail in the costume and accoutrements of soldiers depicted on their tombstones (Bishop: 1990, p.22; Coulston: 2004, pp.149-152). James, in discussing the nature of 'comradely solidarity' and its effect on individual soldiers, refers to the 'normative nature' of standard costume and equipment which he sees, surely correctly, as an outward expression of peer pressure in action (TEAD-Arms, p.253). Anyone not wearing standard clothes is visually set apart from the group. The differential details of soldiers' costumes were an important material field in which Roman soldierly identity was manifested and lived out (TEAD-Arms, p.254). That the emperor could also be seen in military dress suggests pressure to conform came also from the top downwards (Rankov: 2007, p.66).

The aim of the system when it worked efficiently was that all activities in almost every area of life were standard across the army. This seems to have been so reliably the case that the standard activities in any given army camp were replicated almost identically in all others. From Dura the so-called 'morning reports', for example, reveal the nature of the daily muster before the unit commander. Every morning in every army camp across the Empire, troops

---

[26] Incidentally, before the name has been given they had probably been differentiated from each other by the use of distinguishing marks, and often cited here is P.Oxy 1022, a papyrus letter differentiating several recruits in this way.

vowed honour and obedience to their leaders and echoed the original oath to the state and the Roman people they had sworn on their enlistment (TEAD-Arms, p.254; Haynes: 1999, p.168; Rankov: 2007, p.65). The names of the soldiers standing watch for the day with the standards were also announced (Campbell: 1984, p.96). Standards and banners are themselves associated in historical tradition with concepts such as

> 'pride, honour loyalty, truth, collective and individual identification with the traditions of the unit, and especially courage' (Stoll: 1995, p.52; see also Phang: 2008, pp.117-130).

The soldier who guarded them was not there as an individual but as a representative of his unit, men joined together on behalf of all Rome. Cohesion and solidarity of all kinds between soldiers was always encouraged.

All military assemblies, similar in kind to other assemblies in front of the tribunal, or elsewhere, to hear the commander or other senior officers speak, would have been large and the force of the united troops impressive. The power of crowds and assemblies and the emotions felt in large groups which makes protest and dissent difficult is well-recognised by psychologists and social historians (Canetti: 1973). This psychology extends too to the drill-ground in any army, and sociologists have also observed the strange exhilaration felt by members of a group moving in unison (McNeill: 1995). As noted earlier, the training and drill ground at Dura was probably one of the first Roman constructions in the city (TEAD-II, pp.17, 84-5; TEAD-V, p.351; Speidel: 1998, p.179, No. 14). Activities there would have been important for reinforcing troop solidarity.

Additionally, the standard military co-ordinated process of castrametation or camp-building was a 'powerful psychological device' which both imposed social control and projected

material and symbolic power (Phang, 2008, pp.67-9, referring to Veg., *de Rei Mil.* 1.25, 3.8).[27] The idea that all such 'binding' activities are useful in maintaining the morale of armies is a generally-held truth still practised by armies today. All such opportunities were probably exploited by Roman military leaders (see also Goldsworthy & Haynes: 1999, Introduction).

Phang also emphasises the disciplinary benefits of keeping the soldiers constantly busy. Soldiers' work, while it should preserve the mens' dignity and not be degrading, conditioned them to obedience, she maintains. Army labour, always kept distinct from base slave labour, could bestow '*virtus*'. For Stoll, officers from centurion upwards have 'a cult, almost priestlike and solicitous role'. Yet commanders customarily validated the high status of soldiers' duties by sharing them, themselves taking on the same or similar tasks (Stoll: 1995, p.37; Phang: 2008, p.10).[28] Such ideas make it possible to envisage a scenario in which the clerks who wrote the military documents at Dura, of particular interest here, would have taken much pride over their work. They would have seen the necessary disciplinary aspect of producing them as worthy of their time, and have taken great pleasure in flaunting their relatively sophisticated acquired writing skills.

The movement of officers between units, particularly perhaps of centurions and other commanders, may have been instrumental in ensuring the spread of military habits amongst the whole of the dispersed soldier population. James stresses the normative role played by custom and tradition (TEAD-Arms, pp.252-4). The strength of such forces in Roman society as a whole and perhaps particularly in the army, he holds responsible for the

---

[27] On the validity of Vegetius as a source, Rankov has recently commented that 'there is no doubt... that he made use of epitomes of earlier military manuals, and where he can be checked his work is generally plausible, although unreliable in detail (Rankov: 2007, p.63).

[28] '*quasi priesterliche, kultische und fürsorgliche Rolle*'.

'remarkable empire-wide tendency towards uniformity and homogeneity'

in Roman material culture that he (and others) have noticed (e.g. Pollard: 2004). Indeed, in a military force made up of men of mixed nations, standard Roman established traditions must have provided an important common point of reference (Haynes: 1999, p.166). The documents from Dura also, as I shall later show, are written in demonstrably similar military writing styles to those used throughout the widespread army and show that written communications also participated in the shared army-wide appearance.

The psychology behind the widespread similarities of standard types of documentation, written in recognisable administrative styles which lacked personal and personalising characteristics and signalled all that was Roman, shows its documents were a further element in the moulding of the army's outward and inner face. The clerical soldiers had clearly been, it will be shown, specifically trained to produce standard Roman scripts and documentary styles. The Dura papyri in particular demonstrate the importance and the extent of the army's ordered, united and disciplined appearance. There were clearly few areas of a soldier's life that eluded the extensive reach of the authorities. Each soldier's loyalty was of paramount importance.

3.   WRITING IN THE CAMP

3.1   USES OF WRITING

Public writing was used in the projection of identity in Roman society generally. At Dura sufficient physical evidence survives to show that the army used textual display to commemorate and mark their events and activities. But writing, in many forms, was also instrumental to the army's operations and played an important role in ensuring its efficiency. Practically speaking, writing and written communications helped maintain overall military unity. It is a key tenet of this thesis that the Roman state necessarily ensured it had experts who could read and write, and, more specifically, produce documents appropriately and to militarily acceptable standards. Both reading and writing were insisted upon and utilised in many areas of Roman camp life because communications needed to be as widely understood as possible. In the camp indeed, as Williamson expresses it,

> 'an expanded use of writing', visible everywhere, facilitated and was integral to '... a level of state-managed organization that far exceeded levels attained in any other ancient military force' (2004, p.208).

A full consideration of the contexts in which a soldier might be exposed to writing in all its forms in the course of his military career would be a huge undertaking and I cannot begin to do that here. It must be stressed, however, that writing, in one form or another, was constantly present in a camp soldier's life. It was ever-present also in the life of anybody who lived in a Roman city and comparisons are possible between the two contexts. There are parallels, for example, between the lifestyle and layout of a military camp and that of towns and cities. The camp *principia*, for example, as a central area had many of the same functions

as the forum area in towns (Speidel: 1999, p.81).[29] It was decorated in accord with

contemporary civilian tastes and painted in its interior like a fine town house (Liversidge:

1968, Pl. XVIII). It was here that the garrison's troops assembled to hear their commanders

speak, to perform certain ceremonies, to catch the latest gossip and also, importantly, to read

the posted notices upon its walls (Reeves: 2004, p.143).

Noticeboards and signs around the camp would commonly have been written or brush-painted

on a wooden surface (Eck: 1998).[30] A rare attestation of a wooden sign survives from the

Palmyrene Gate at Dura. This is a *tabella ansata*-shaped board, 59 cm. long by 21.2 cm.

wide, with a stained red surface and painted lettering in white 'capital' letters (TEAD-II,

p.148, No. 56).[31] Dated perhaps to the earlier years of Septimius Severus, it is a dedication to

the town *strategos* and his wife and family from the *beneficiarii* and *decuriones* of an

unidentified cohort. It was probably once attached to a wall painting and is probably typical

of many such textual displays that were once ubiquitous (Reeves: 2004, p.154). [32]

In Rome every year the *praetor* published his edict, an '*album*', customarily painted onto a

wooden board, with current laws and tariffs detailed on the other side (Schmidt: 1893).[33]

Many other office holders also transmitted orders on whitewashed boards and the posting of

legal and other public notices on the walls of the central areas in towns was common practice.

A multiplicity of other wooden documents and notices would have been used for a range of

administrative as well as more personal functions (Franklin: 1991; Horsfall: 1994; Eck;

---

[29] He supports the idea with citations from Livy, 41, 2 11; Festus (Lindsay, 309, 1); Polybius, 6.31.1 and Flavius Josephus, *Bell. Jud.*. 3.5.2.

[30] See the comprehensive catalogue of Latin documentary writing on wood in Bartoletti & Pescini: 1995.

[31] On the use of the word 'capital' in this thesis, see p.15, Note 6.

[32] The board bears comparison with a white lettered tablet from Mérida (Rebuffat: 1995, p.24 and Note 10).

[33] Eck notes that legally the important document is not the fine bronze or marble inscription on display but the text in a less durable material in the archive (Eck: 1999, p.362 and *passim*). This is very likely often to have been a small wooden tablet, probably waxed. On the significance of wooden tablets and their associated symbolism see (Meyer: 2004).

Corbier: 2007). The forum in cities and the *principia* in the army camps were the commonly-used central display areas (Corbier: 1987, p.44; Susini: 1988).[34] Administrative political publications could also be written on papyrus, and a surviving example is a letter from Hadrian to the prefect of Egypt concerning rights of succession for soldiers' children which was put up in the *principia* of the *Legio XXII Deiotariana* (BGU 1, 140, cited by Eck: 1999, p.363). Other writing materials also may well have been used.

Marichal identifies pieces of plaster fallen from one of the walls of the *principia* at the military camp of Bu Njem on which writing is still visible as this camp's '*album*' and calls it the first such document ever found in a *principia*. The plaster bore traces of writing at an approximately two metre height from the ground. His plates show a very faint handwritten script with letters 0.5–1 cm. high which would have been, as he remarks, easily visible to those standing beneath (Marichal: 1992, pp.241-247, Note 1, Nos. 147-151). Addressed to the *praepositus*, Marichal suggests the display was for the transmission of orders to the men from more senior commanders. Reasonably, this to him that soldiers were capable of seeking out and responding to orders transmitted in this way (Marichal: 1992, p.241).[35] Indeed, although not all soldiers may have been able to read, the ones who were able to do so would no doubt have been expected to take the responsibility of reading it out to their colleagues. There are interesting comments on this kind of group reading in (Verhoogt: 2009).

At Dura there is an, unfortunately doubtful, reference to Dura's camp *album* in the original editors' reading of the words '*cum albos*' in one of the rosters (P. Dura 101, XL, 19).[36] Marichal however, in his own edition of the same papyrus, was reluctant to accept the

---

[34] For a fresco of people reading boards on a wall, see S.C. Nappo., *Stud. Pompeiani* 3 (1989), pp. 79–96.

[35] ‹*Le soldat, même membre d' un numerus, ne serait donc pas consideré comme un exécutant passif, mais comme un citoyen capable de comprendre les raisons de la discipline qui lui est imposée et des ordres qui lui son donnés* ›.

[36] Regrettably, there is no online image of this papyrus.

reading, and with good reason, for not only had the line been effaced and become extremely faint; it also represented an error in Latin in both case and gender. If it were correct however, he reasoned that the soldiers' names reproduced adjacent to it would have been copied over from their initial posted display on the camp noticeboards. This would thus reinforce the idea that the *album* was a functional means of communication in a military camp.

Greg Woolf has recently listed appearances of writing in Roman towns. It includes milestones, epitaphs on tombs, notices of various kinds, inscriptions on the bases of statues of local grandees, laws on bronze plaques, building dedications, posted documents, occasional imperial edicts, perishable notices in temples commemorating vows, miscellaneous calendars, graffiti - painted or inscribed - wax tablets recording all sorts of contracts and registrations, books in libraries, private and public, and in shops, painted labels on amphorae describing their contents, stamps and ownership marks on vessels and other objects and legends on coins (2000, p.876). Some, at least, of these documents are among the finds from Dura and all are likely to have been in some way present, both inside and outside the military camp in its day.

Perhaps most prominently, soldiers would have seen, ornamenting the buildings with which they were familiar, formal public inscriptions. The Latin inscriptions from Dura are not a huge haul, however, this is explicable given the city's relatively short Roman occupation and its predominantly non-Latin linguistic environment. Described by Rostovtzeff as 'mainly building inscriptions and dedications to divinities', they are without exception associated with the military (Rostovtzeff: 1934, p.357).[37] Most are formal in tone and are peppered with names, particularly regimental or those of state officials. They customarily celebrate the activities of the army in the town.

---

[37] No final publication of these has yet appeared.

Inscriptional alphabets on the exterior of city thresholds have justly been referred to as

'power-marking boundaries [indicating] not that the group within was bound by a common language or common beliefs, but that the group was bound by a common rule' (Bierman: 1998, p.31).

At Dura's Palmyrene Gate, for example (Plate 6), a magnificent two storey structure through which the visitor who travelled by land had to pass to gain entrance to the city, there is an accumulation of texts in Greek, Latin and Palmyrene (TEAD-I, pp.33-44, Fig.21; Reeves: 2004, pp.150-55). The excavators describe a great variety of short carved inscriptions and more crudely scratched graffiti which cover the lower, inner walls of many of the internal antechambers and archives of the three-gated complex. Many were left by Roman soldiers and they show them using texts and short epigrams to assert their presence and to stake out and mark the territory they occupied. Writing functions here as a key marker of Roman rule and domination.

Clear letters and language in its simplest form was an instrument of state power in a Roman city (Corbier: 2007). The formally inscribed monument, displaying a text in finely-cut, Roman Imperial 'capitals', has enhanced grandeur, particularly for the 'illiterate' for whom the written word has great mystery (papers in Cooley: 2000).[38] Additionally, the constancy in the quality of the script in official city inscriptions suggests an institutional practice to which the maintenance of a uniform and specific alphabetic sign was important.

Textual evidence survives from Dura of adherence to the Imperial cult – obviously a particular state-sanctioned religious practice – and a magnificent inscription, clearly

---

[38] On the use of the word 'capital' in this thesis, see p.15, Note 6.

expensive, associates the *Cohors XX Palmyrenorum* with this form of worship.[39] It was

dedicated to Alexander Severus, an emperor who used Syrian archers in his forces, had

campaigned in the East and spent the winter of 231-2 at Antioch. Put up at probably about

the same time, the cohort fittingly saluted him in Latin in fine, red-painted, V-cut inscribed

letters (Cumont: 1926, pp.357-8, Pl. CXI, 3). Such displays openly advertised the identity of

its dedicatees. In this instance, it confirms the official adherence to the emperor observed by

the cohort soldiers.

There were also many other, more mundane but less ceremonial, uses of writing in an army

camp. Soldiers commonly 'labelled' their property, for example. The soldiers' arms were

kept under the care of the '*custos armorum/armamentarii*' and written names were obviously

a way of identifying a particular soldier's items (Macmullen: 1984, p.23). This suggests that

the *custos* at least could read. More generally, hundreds of objects have been found on which

someone has written the name of a century and/or regiment. These include lead sealings, a

bronze vase handle (this also bearing the soldier's name), a 'camp kettle', a steelyard

(belonging to scales), a *trulla*, helmets, shields and armour, weapons, iron tools, game

counters, bone knife handles, tile stamps, leather scraps, perhaps from tents, hand-mills, stone

balls and terracotta antefixes (used on roofs) (RIB-II: 1990). Indeed his acknowledgement of

high basic literacy levels in the army leads Woolf to suspect that most names left on Roman

tiles and bricks are to be associated with soldiers (2000, p.877). They are the marks

representing their units and in some cases the individual soldiers themselves and in the latter

case, many are presumably autograph.

---

[39] Found on the floor of the Temple of the Palmyrene Gods, the inscription had suffered damage after Severus'
death, presumably in his '*damnatio memoriae*' in 235, but had been re-used in a pavement.

Extensive use was made of leather in a military camp, whether for personal equipment like shoes, jerkins, breeches, shields and scabbards or for gear like tents (Wright: 1942). Again this could be labelled and P. Dura 131 (TEAD-VI: p.465, Note 90) is an example here. A piece of leather perhaps from a tent, it bears the name of a cavalryman in a cursive hand. After all, every soldier probably knew the sight of his own military name, regardless of whether he could 'read it', for its Roman letters had been completely familiar to him by sight since joining his unit and were written on his *signaculum*, a small lead tag he wore round his neck (Davies: 1969, p.24; Iriate: 1996). He would be familiar with the name of his regiment too, having seen it inscribed in several contexts or perhaps written it himself during his military day.

The space on the regimental standard was an ideal frame for simple words (probably abbreviated) with which even the least literate soldier would have been familiar. On the battlefield and in military displays, the standard prominently commonly carried the unit's name and that of its commander and it had both a functional and a symbolic aspect. It was intended to be seen and it was also sometimes painted in red, the most visible of colours and, significantly, 'the most charged with glorificatory power' (Dio 40.18.3, cited Rebuffat: 1995, p.24).[40] On the standards of Aurelian, the names of the legions were painted in golden letters (Rebuffat: 1995, p.24, Note 17). Soldiers' shields too often bore written legends (*De Rei Mil.* 2.18).[41]

All these latter instances of writing emphasise the utilitarian function of writing which would have been exploited throughout the army. The military could not have functioned as it did

[40] '*la plus chargée de valeur glorificatrice*'.
[41] '*Sed ne milites aliquando in tumultu proelii a suis contubernalibus aberrarent, diversis cohortibus diversa in scutis signa pingebant... Praeterea in averso scuto uniuscuiusque militis litteris erat nomen adscriptum, addito ex qua esset in cohorte qua ve centuria*' (edition: Reeve: 2005).

without it. For this reason therefore it is clear that they could hardly have neglected in the first instance to ensure that their scribes knew how to maintain it and secondly, and equally, that as many soldiers as possible were able to read, if not also to write. I shall argue in later sections of this thesis that the key component in ensuring that the lettering the militarised state used was appropriate was the thorough training given to military soldiers to become lettering specialists and scribes.

Indeed it would also seem indeed that, as Bowman asserts, the army deliberately

> 'enable[d] the community to embellish its lifestyle by providing and encouraging the literate environment in which they were able to communicate' (Bowman: 1994, 2003, p.89).

3.2   DAILY ADMINISTRATION

Excavated writing materials are quite commonly found in or close to military-occupied areas and are a testament to soldiers' use of written documentation (Bilkei: 1983; Evans: 1987; Galsterer: 1999; Derks and Roymans: 2002). Calculations as to the frequency of issue of certain military documents suggest a world in which the constant production of papyrus rolls and other forms of record must have required sizeable storage facilities as well as large teams of scribes and clerks working to produce and update them. In this section, I take a brief look at this situation.

A century's offices, according to Marichal, used as much papyrus as did in his day a company of the French army (1963, p.206).[42] Bowman calculates that in the army in the period from Augustus to Diocletian, at least 225,000,000 individual soldiers' pay-records would have been produced (Bowman & Thomas: 2003, p.30). It was important to keep the army occupied in times of peace and large amounts of paperwork may have been useful in this. Also however, the huge force needed to be fed, clothed and to receive its pay. Efficient fulfilment of these basic requirements alone constituted a large part of its administration. At least for these entirely practical reasons the army, as Harris writes,

> 'came to be an especially bureaucratized milieu.' (Harris: 1989, p.217).

Written records for soldiers began pre-enlistment (for many) with letters of recommendation (Gilliam: 1957; Davies: 1969, p.26).[43] Potential recruits would first be medically examined and if passed, approved ('*probatus*') by the governor for military service. Possibly at this stage, as maintained by Davies (Appian, *cit.*), a dossier would be opened at provincial headquarters pertaining precisely to him and recording his character, his health and his full

---

[42] '*Les bureaux d'une centurie usaient autant de papyrus qu'une compagnie de l'armée française…*'.
[43] Phang cautions that the need for '*litterae commendaticiae*' has been exaggerated (Phang: 2007, p.288).

military history. However, no such dossiers have ever been found and Phang suggests instead

that, when necessary, clerks consulted more general documents and made extracts or copies of

relevant sections (2007, p.291). More senior clerical soldiers in particular were probably

accustomed to collating information from written sources and copying it, or arranging that

this to be done.

On the recruit's assignment to his unit, the governor informs his new unit commander by

letter that he is to enrol the new man. P. Oxy 1022 is a certified archive copy of such a letter

to a unit commander, apparently written and signed by a *cornicularius* of the *Cohors III*

Ituraeorum, then probably based in or near Oxyrhynchus in Egypt. It attaches a list of

recruits. The commander was to receive the six new soldiers into his forces on or about

February 24, 103 CE and their arrival would, as a matter of routine, have been recorded in the

unit's 'morning report' for that day. The names of the new men would henceforth regularly

appear alongside their fellow soldiers on the unit's troop registers. The Dura examples of

those documents (particularly P. Dura 100 and 101) clearly show for each soldier his date of

enlistment.

Another papyrus, P. Dura 56, records and details the arrival of certain horses into the camp.

The governor, in his accompanying letter, instructs the cohort tribune to do this, as was

regular practice whether the arrival was manpower or horses (Gilliam: 1957, p.209 and Note

13).[44] Scrupulous attention was clearly paid to accuracy and detail in record-keeping and

both men and horses were important resources.

Vegetius, in a frequently cited passage, emphasises the thoroughness of army record-keeping.

---

[44] The phrase he uses to do this may read, '*in [acta ut] mos*', '*acta*' probably being a general term for a formal written record, although the reading cannot be confirmed; ie. 'in the records as usual' (RMR, pp.2, 405, No.99, a., l.7ff).

'For the administration of the entire legion, including special services, military services and money is recorded daily in the Acts ('*acta*') with one might say greater exactitude than records of military and civil taxation are noted down in official files. Daily even in peacetime, soldiers take it in turns from all centuries and 10-man sections to do night-watch duties, sentry duty, and outpost-duties. The names of those who have done their turn are entered in lists so that no one is unjustly overburdened or given exemption. When anyone receives leave of absence and for how many days, it is noted down in lists (Vegetius, *De Rei Mil.* 2.19).[45]

Here he lays emphasis both on the meticulous detailing insisted upon throughout the military administration and also on the functional utility of such records in the maintenance of army routines. Written instructions contained orders given to the literate soldiers. They passed them, perhaps orally, to the others. In this way all the men were kept vigilant and each knew where he should be at all times and what he should be doing. By reading documents their junior staff passed to them, commanders likewise knew where their men were and in what numbers and they made new written plans on the basis of the information received.

Stauner, drawing on Josephus, gives a detailed account of the chain of communication within a legion or cohort. Every morning the soldiers go to the centurion, and he to his superior and so on up through the ranks, to get the password and the orders for the day. The centurion takes with him to his superior officer the 'daybook' for his cohort showing the strength of his

---

[45] *'Totius enim legionis ratio, sive obsequiorum sive militarium munerum sive pecuniae, cotidie adscribitur actis maiore prope diligentia quam res annonaria vel civilis polyptychis adnotatur. Cotidianas etiam in pace vigilias, item excubitum sive agrarias, de omnibus centuriis et contuberniis vicissim milites faciunt, et ne quis contra iustitiam praegravetur aut alicui praestetur immunitas, nomina eorum qui vices suas fecerunt brevibus inseruntur. Quando quis commeatum acceperit, vel quot dierum adnotatur in brevibus'* (edition: Reeve, 2004). All translations from Vegetius used here are from Milner's 1993 edition.

men that day (Stauner: 2004, p.73).[46] There are no obvious examples of daybooks from Dura but from the approximately contemporary camp at Bu Njem the '*rapports journaliers*' (Bu Njem, Nos.1-62) are representative of this type of document (Marichal: 1992, pp.49-51; also Bowman & Thomas: 1994, pp.98-101).[47] The pattern was repeated downwards through the ranks, with accumulated and recorded information (signalling completion of orders for example) feeding upwards through the hierarchy, and fresh orders and commands filtering back down (Stauner: 2004, p.212). For soldiers posted in outlying regions, such reports belong to a chain of communication between the soldiers at the outpost and their commanders in the central base (Birley: 2002, cited Stauner: 2004, p.91).

The large and small dot system by which many names are highlighted in the Dura rosters has yet to be elucidated, but these also suggest that the troop registers are working, functional documents that served in the daily organisation of duties (TEAD-P&P: 1959, pp 39-40; Stauner: 2004, pp.24-5). Complementary to these are the lists of individually named soldiers which are quite commonly sent accompanying letters (e.g. P. Dura 67).[48] Many other documents also illustrate the process of distillation of information, from lower-level documents concerning individuals and smaller units, into umbrella, macro-documents referring to larger units and selected groups of men. In this way the control of large forces was both documented and ensured. Bowman's comments with reference to Vindolanda are equally applicable to Dura.

---

[46] Stauner cites Appian, *Civ.* 5.46 for the use of 'daybook'. He thinks daybooks were probably written on wax tablets. Eck comments, with good reason, that while writing tablets are less well-represented in excavations, the vast number of styluses found is testimony to the frequency with which they were used (1998, p.211). The '*tilia*' or wood veneer slip as used at Vindolanda, is a possible alternative, and an example of such a writing tablet was found in the Near East as recorded in Haran (1996).

[47] Note also now Vindolanda tablets Nos. 155-57.

[48] Eleven fragmentary such lists survive from Dura.

'The degree of precise and detailed communication goes a long way to explain how the Roman military presence exerted such effective control over such large areas with so few troops…' (Bowman: 1994, p.119).

There are high standards of documentary exactitude at all levels and care is taken that documents produced correspond with the facts (Rankov: 1999). Generally, military documents are concise and to the point and emphatically functional in content (Stauner: 2004, p.205).

The provincial governor would receive regular communiqués from the units under his control (as witnessed in P. Dura 82.ii.7). These would be stored in his archive (Haensch: 1992). In this way he was able to administer the activities of the legions and to feed reports on their progress to the emperor without his physical presence in either situation being required. The governor's knowledge of the affairs of the troops at Dura is suggested in several of the papyri.[49] P. Dura 64B, a letter from a regional *praepositus* to the cohort tribune Justillus, encloses a copy letter from the governor and asks that a *librarius* named Sozon (a soldier in the *Legio XVI Flavia Firma Antoniniana*) 'give satisfaction to...' (the complement to this phrase is missing). The sentence following begins '... our governor knows...' (again part sentence missing). Enough is preserved here to show that the governor is adjudicating a dispute between soldiers at Dura, the parties to which he knows by name. However, he is possibly referring to a document that tells him the man's name – at least it seems hardly possible that he would have known all the men by name without a prompt.

Each military administration department that handled and produced the army's chief documents was part of a force-wide objective intended to ensure that all army leaders up to

---

[49] Eg. P. Dura 56 and 60.

the provincial governor knew at any one time where all their troops were, their general situation and what they might need (Austin & Rankov: 1998, p.156). The intelligence and the information would also have reached the very highest sources. According to his biography as recorded in the *Historia Augusta*, under the Emperor Severus Alexander army documentation was scrutinised by the emperor himself.[50] Indeed, according to it, he

> '… knew all about his soldiers, wherever he might be; even in his bed-chamber he had records containing the numbers of the troops and the length of each man's service, and when he was alone he constantly went over their budgets, their numbers, their several ranks, and their pay, in order that he might be thoroughly conversant with every detail. Finally, whenever there was anything to be done in the presence of the soldiers, he could even call many of them by name. He would also make notes about those whom he was to promote and read through each memorandum, actually making a note at the same time both of the date and the name of the man on whose recommendation the promotion was made' (*HA*, 21.6-9).[51]

If this is true, it stands as a testament to an efficiency in documentary practice which is unlikely to have been again paralleled over such a large range of territory until at least the seventeenth century. It was quite an achievement.

Writing activities in the Roman military, then, comprised an interactive, administrative unity and involved the constant exchange and interchange of written orders, certificates of

---

[50] Written 'AD 390s probably' and now usually accepted as the work of a single biographer, according to Potter, D.S. (1999) *Literary Texts and the Roman Historian*, London, Routledge, p. 162. See also Barnes, T.D. (1978) *The Sources of the Historia Augusta*, Brussels, Latomus.

[51] *'Milites suos sic ubique scivit, ut in cubiculo haberet breves et numerum et tempora militantum continentes, semperque, cum solus esset, et rationes eorum et numerum et dignitates et stipendia recenseret, ut esset ad omnia instructissimus. Denique cum inter militares aliquid ageretur, multorum dicebat et nomina. De provehendis etiam sibi adnotabat et perlegebat cuncta pittacia, et sic faciebat diebus etiam pariter adnotatis et quis quo esset insinuante promotus'*. Transcribed from the Loeb edition [online; accessed 19th January 2010] http://penelope.uchicago.edu/Thayer/L/Roman/Texts/Historia_Augusta/Severus_Alexander/1*.html.

completion, information and news. They are operative on all hierarchical levels within the

military administration from the governor's office to the legions and auxiliary units down to

the vexillations and *numeri* (Stauner: 2004, pp.205-11). The system, quite obviously,

depended on the availability at all levels of soldiers who could write and/or read, at least to a

limited degree and thus communicate with both superior and lower level service posts. It also

needed clerks and scribes who were equipped to produce accurate and appropriate documents

for their units. Both of these phenomena will receive further attention in sections to follow.

4.   THE PAPYRI

4.1   DISCOVERY

In the excavating season 1931-32, the majority of the Latin papyri found at Dura-Europos,
those belonging to the *Cohors XX Palmyrenorum*, were found in the room numbered 13W on
the excavators' first plan (Plate 7).[52] In the Roman era, W13 lay within the complex of the
former Temple of Artemis-Azzanathkona, one of the earlier city temples taken over and
probably extended by the Roman military during their occupation (TEAD-V, pp.131-180;
TEAD-VI, pp.482-99; Dirven: 1999, pp.13-14). This building lay north of, but adjacent to,
the *principia* (shown as the *praetorium* on the excavators' plan), and in between that building
and the city perimeter wall. The complex of rooms W12–17, which earlier had belonged to
the temple, had probably been separated from it by cross-walls and given a separate entrance
on street D at about the time of the concentrated development of the military camp (TEAD-V,
p.152).

The Latin papyri, thought to be the remains of approximately seventy-seven distinct
documents (TEAD-P&P, p.2), many detached from longer composite rolls, lay in the north
western corner of W13 and were thus apparently protected from the worst of the elements by
the outer city wall that still stood on their discovery to 3.34 metres in height (Rostovtzeff:
1934, p.361).[53] They were also later buried beneath a steep pitched earth rampart which had
been built up against the wall to help strengthen it during the city's final siege and this

---

[52] This room was referred to as W13, rather than 13W as on the plan, by the writers of the series of later Dura
reports, and I have adopted this latter usage.

[53] The exact figure is somewhat imprecise. Several fragments are Greek, rather than Latin, and hence excluded
here. Others are written on parchment rather than papyrus. Possibly brought in from elsewhere in the city were
P. Dura 94 (a parchment), 55, 116, 117 and 125-127.
Nine other Latin fragments, 'of indeterminate provenance and content' were found elsewhere at the site (ChLA-
IX, p.6). Welles writes that '... they were found in the city towers and along the walls as they had been dropped,
brought in with the fill, or blown by the wind in the last months of the city's existence' (TEAD-P&P, p.4).

circumstance preserved them so far as they have been (TEAD-P&P, p.3, Fig. 1; TEAD-Arms, pp.24, 29). Most were, however, in an extremely fragmentary state.

The documents, it seems, had probably been 'thrown in as the rampart was started' (TEAD-Arms, p.24). Such an explanation probably partially accounts for the apparently random survival pattern they exhibit. The collection is a strange assortment of documents which is most unlikely to represent the remains of a complete archive (TEAD-P&P, p.36; ChLA-IX, p.8). Many documents were already several decades old at the time of their burial, but there are also more recent examples among them. It is likely, therefore, that the papyri were buried as discarded material, rubbish that happened to be lying around, rather than deliberately placed to preserve them. The excavation account seems to suggest they were generally scattered around when found rather than neatly shelved or archived.

James (1985) proposes that consistent with this apparent confusion, Dura-Europos may actually have been overrun and occupied by the Sassanian Persians c.252-253, or perhaps into 254; before being driven out again temporarily (see also Lieu: 2007). He also thinks is possible that when the rampart under which the papyri were found was built (254) the *Cohors XX Palmyrenorum* were no longer based at Dura-Europos and had perhaps perished at Barbalissos in 253. They are last attested in 251 (P. Dura 97). It is possible then that the cohort had taken its archive (or most of it) with it when it left the city. Alternatively, the Romans having deserted the site, the Persians may then have rifled and destroyed the remaining archive (or most of it) during their interim period of occupation. Either account seems possible. It may well have been then, that there were a lot of papyrus documents and rolls stored throughout the W complex, all of which were perhaps potentially available for ballast, and from this much larger total, the corpus as it is currently known, is a very tiny

remainder. But the evidence as it is presented in the two original reports that describe the whole complex does not allow further enquiry (see also Reeves: 2004, pp.77-80).

It may also be, however, that the bulk of the archive was still *in situ* at Dura at the time of the siege but that most of the documents were in W18, and not W13. The following description is paraphrased from Rostovtzeff's account of what he saw.

> 'In the bank of earth just outside and south of W18 a mound of fragments of papyrus up to 0.5 metres high mixed with earth and general rubbish was recovered. The same conditions as in room W13 seemed to prevail here with a bank of earth, sharply cut, shedding the rain. Some sort of roof perhaps covered the documents until fill of dirt accumulated above. The thin strata of documents reached up to within half a metre of the surface and had evidently been wet through many times. Though in many cases documents pressed together preserved the writing, the fabric itself had so rotted that it disappeared into dust with the slightest touch.
>
> 'The dirt surrounding them was cut in squares, the whole blocked with paraffin and cloth and the bricks shipped to Yale' (Rostovtzeff: 1934, p.362; see also TEAD-V, p.171).

These papyri unfortunately were never able to be separated and deciphered.

To return to W13: Marichal had noticed that there was some indication of shelving on one of its walls. He calculated that a six metre papyrus roll (which he took as the approximate length of the rosters P. Dura 100 and 101) would form a cylinder of five or six centimetres in diameter, and on that basis he estimated that the shelving could have held *circa* twelve hundred and fifty such rolls. This he regarded, however, as insufficient shelf-space to store

the whole archive, although also that had the total eighteen metres of wall in the room had shelving two metres high more than nine thousand rolls could have been stored there, a figure he thought a more feasible estimation of the size of the unit's archive (ChLA-IX, p.7).[54] In practice we lack information regarding the size and extent of a working military archive. W13 in any case may have been part of the ground floor of a two-storey building, a point which the excavators deduced from the amount of debris and objects found lying on the floor, in particular a large quantity of reeds which they interpreted as having been used in the structure of the flooring above, fallen through when the ceiling collapsed. Again, it is not possible, without further information, to make any further judgement as to the likelihood of this.

Given the strange assortment of documents in the discovery, Marichal also, alternatively, raised the possibility that W13 was a storage space for used, say on the verso side, but at least reusable papyrus (ChLA-IX, p.19). This would explain the presence there of the *Feriale*, the festival calendar P. Dura 54, for example, which in 256 CE was 20 years out of date.[55] The *Feriale* had also, however, been repaired at some stage along cracks appearing in it with strips of used papyrus (Fink et al.: 1944, p. 12), which suggests attempts had been made to preserve its longevity whether or not it had been later discarded.[56] Indeed, the clerks at Dura may well sometimes have run short of papyrus and the fact that (probably) local parchment had been used in place of papyrus for some documents perhaps indicates that the usual supply occasionally broke down or was unreliable.[57] Economy in papyrus usage may explain several

---

[54] Some remarks on the bookshelves in public Roman libraries in Hanoune: 1997.
[55] The idea would also account for two Greek literary fragments, P. Dura 4 and 9, which seem out of place in the otherwise 'official' character of the corpus.
[56] For this as a common practice, see Turner: 1983.
[57] Before the arrival of the Romans at Dura the customary writing material was parchment (TEAD-P&P, p.2).

documents being written on both recto and verso sides. In such cases however, why had these papyri been brought into the store at all?

The walls of W13, the room where the papyri were found, bore miscellaneous graffiti. Some clearly dates from its earlier occupation periods, but most can certainly be associated with the Roman military (eg. TEAD-V, p.168, No. 500 a. and b.). In W14, the neighbouring room and the only one with clear access to W13, benches ran along the northern and the western walls and significantly here, according to the excavators, the walls were

> 'literally covered in inkstains, as if pens or fingers had been wiped off on them'
> (TEAD-V, p.152; also ChLA-IX, p. 7).[58]

There were also scratched drawings and more writings, in both hard point and ink, amongst which were apparently two 'finely written Latin alphabets', 'the common formula' in Greek μ(νησθη) ογραψας (TEAD-VI, p. 492) and a few other miscellaneous Greek graffiti.[59] In several graffiti in this room the excavators thought they detected a mix of Greek and Latin letters and spelling and one, importantly for them, seemed to refer to a legion, either the *IV Scythica* or the *III Cyrenaica* (TEAD-V, pp.161-162, No. 483; and see Dirven: 1999, p.315 Note 446).

Given the above circumstances, the excavators pronounced the complex to be 'probably a military clerical office'. It was the office area of the military scribes and the graffiti on the walls was the result of these mens' efforts to embellish their surroundings, to commemorate their names and to express pious wishes (TEAD-V, pp. 153-165; TEAD-VI, pp.492-7). There seems little alternative given these pioneers' account and interpretation of the graffiti but to

---

[58] The doorway giving W12 access to W14 was later blocked up (Dirven: 1999, p.315 and Note 440; Reeves: 2004, p.146, Note 29).

[59] 'Remember the writer'. See on the meaning of this phrase (Reeves: 2004, p. 144, Note 19).

accept this as probable, although Reeves has recently criticised their easy assumption of military usage throughout their discussion of the complex (Reeves: 2004, pp.52, 77-80). She has a particular interest herself in disassociating the *Feriale* calendar (P.Dura 54) from exclusively military practice and this leads her to challenge the straightforward association of W13 (and thus the papyri) with soldiers. However it seems to me, as I later propose (Section 11), that there is no-one more likely to have written out the *Feriale* than the purpose-trained military clerks.

As to the other nearby rooms in the Temple complex, Room W15 the excavators thought perhaps functioned 'as a vestibule'. It had benches on the south and part of the east wall and small ink drawings on all its walls (TEAD-V, pp.168-70). In Room W16 (described as 'a true vestibule') more ceiling reeds were found on the floor. Room W17, perhaps a *triclinium* or resting room, was equipped with two wide benches (1.31 and 1.195 metres in width) but little else was found there (Dirven: 1999, p.315). The graffiti, throughout the complex, appear to stretch over the entire Roman occupation period and to indicate that most rooms in it were used consistently by clerical soldiers carrying out at least some of their administrative duties. None are large rooms. W14 was sixteen square metres, and even together with W12 (of approximately the same dimensions) there would, arguably, have been limited space here for the whole clerical unit to carry out their work.[60] However, the proposition that at least some of the rooms probably had a second storey and the discovery of further papyrus remains near W18 both add strength to the idea that W12-14 made up part of a larger clerical wing.

Other evidence also accrues in support of the military association of these rooms. The ink drawing the excavators regarded as of great importance in W14 represents a sacrifice to the

---

[60] The 'scriptorium' at the Bu Njem camp is remarkably small, but the unit based there was altogether far smaller than that at Dura (see Section 6.4 below).

Palmyrene god Iarhibol, the deity himself dressed in the uniform of a Roman officer (TEAD-V, pp.155-6, Nos. 470-474 and Plate XXXVI, 1-3; Dirven: 1999, 59 a-d, pp.316-8, Pl. XIV; Dirven: 2007, pp.5-6, Fig.2; shown here in Plate 8). The figure of a soldier in uniform who stands in the foreground performing a sacrifice is, according to Dirven, 'strikingly similar' to one of the known tribunes of the Palmyrene cohort Julius Terentius (Dirven: 1999, p.317). This tribune is also depicted in a large wall-painting recovered from the 'Temple of Palmyrene Gods' (TEAD-P&P, p.27, Note 11; TEAD-Arms, pp.39-44, 65-66). The cohort's standard bearer, in the drawing, is also shown sacrificing to Iarhibol. He is labelled 'Artemidoros' in Greek. The horseman in the background wears apparently Parthian costume and the horse's tackle is also in this style (TEAD-V, p.154). Arguably, this drawing shows a conflation at Dura of Palmyrene religious practice and traditional Roman military sacrificial behaviour as performed by the former occupants of this very same room.

A piece of evidence associating W12 with the *Cohors Ulpia*, the first known regulated unit at Dura, and specifically with their clerks, is a Latin *dipinto* found on an undercoat of plaster on the east wall of W12 (TEAD-V, p.226-9, No. 561, Table XXIX, 2; and see further in Section 11). Dated 194 CE it associates this cohort with the W complex within perhaps fourteen years of their formation (Reeves: 2004, p.147). Interestingly, both the *Cohors II Ulpia* and the *Legio IV Scythica*, who also left graffiti in the W complex, were at some time, probably during the early years of the garrison, under the interim command of a centurion of *Legio IV Scythica* acting as *praepositus numerorum* and at that time the local commander of the complete Roman force at Dura (Speidel: 1998, pp.172-3).[61] The men of the two units may well have ridden out in vexillations together.

---

[61] A similar 'irregularity' is recorded at Hatra, where a tribune is commemorated as commander of both the *Legio I Parthica* and *Cohors IX Gordianus Maurorum* (Oates: 1955).

In fact the earlier scholars specifically asserted that this area of the temple complex had once been associated with legionary clerks but that these had probably moved out and into the purpose-built *principia* when this was completed. They made no further mention of the *Cohors II Ulpia* but asserted that when the legionary clerks moved out the rooms were henceforward used only by the clerks of the auxiliary Palmyrene cohort. These men they viewed as secondary to those of the legion in status (Rostovtzeff: 1934, p.311; TEAD-P&P, p.36). In the *principia* a large dipinto, found outside rooms 8 and 9 (on which see Section 11 below), attested to the presence of legionary clerks in that building and inside it at least three other legions were mentioned in graffiti or inscriptions (TEAD-V, pp.358-9; Reeves: 2004, p.39). Because there was no evidence for the presence of cohort troops in the *principia* - as distinct from those of the legions - the excavators assumed *ex silentio* that the auxiliary troops did not work in the *principia*.

This assertion is obviously based on the assumption of the inferior status of the cohort and it needs to be nuanced in the light of more recent work on the role and importance of auxiliary units in the third century. Modern scholarship envisages a growing equivalence in the relative status of legion and cohort which took hold particularly in the third century, if not indeed earlier (Speidel: 1984; Davies: 1989; Reeves: 2004). Coulston, for example, has recently demonstrated that this was particularly true after the *Constitutio Antoniana* in 212 CE when the earlier differentiation between citizen and non-citizen regimentation ceased to exist (Coulston: 2007, p.247). This law was passed inside the period of the Romans at Dura and its effect is visible in the surviving cohort papyrus rosters where, as mentioned earlier, most names are carefully represented with their new (if it was new) Roman *praenomina*. This fact was ignored in the excavators' early assessments of the status of the Palmyrene cohort at Dura.

Reeves discusses this issue in some detail because it does, as she points out, 'cast doubt on the theory' that the rooms in the W complex were used to store exclusively the cohort's documents. According to the excavators, the higher status legions had transferred their archive to the new *principia* (Reeves: 2004, pp.39-41). There is, as Reeves points out, no evidence to support either of these propositions, although equally, no arguments against. They are based however very possibly on a false premise.

The early assumptions as to the use of the W complex need to be questioned and reinvestigated but this cannot be done without further archaeological evidence. Furthermore, given that the garrison was at times quite sizeable and that the logistics of troop activities depended in no small measure on efficient documentation, there may well have been further writing offices in the camp additional to those yet found.[62] It is to be hoped that the ruins of Dura-Europos will one day offer up answers to at least some of these unknowns.

---

[62] There was a further area in Roman Dura which records the presence of clerical soldiers. The so-called 'House of the Roman Scribes', which preserves fresco portraits of an *actuarius* named Heliodorus and a *tesserarius* Ulpius Silvanus as well as others, is situated near the main gate (House A, Block L7) (TEAD-I, pp.166 sqq.; TEAD-VI, pp.275–308, Pl XLIV,1; ChLA-IX, p. 6; Stauner: 2004, p. 417, No. 399). Their regiment is not stated and we have no further firm information regarding the function of the room or the nature of its occupants (Pollard: 2000, p.55, Note 103).

4.2   CONTENT

On their discovery, the papyri were shipped to Yale University, this being the body financing the early excavations, and they are held now by its Beinecke Library. In this section I briefly survey the content of the collection as a whole, for although this thesis confines itself to considering only a few documents in detail, others are mentioned incidentally in relation to the general discussion. To aid further reference, I have included in Appendix 1 a Concordance giving reference details for the whole collection as in the two key editions of the documents (TEAD-P&P; ChLA VI-IX) and also in Fink's selective but still important catalogue of Roman army documents, many of which are Dura papyri (RMR).[63] The Concordance has brief descriptive details for each papyrus and a hyperlink connection to its listing on the Yale website, where many are also accompanied by high resolution images.

All the Dura Latin papyri relate to and were either written by, or sent to, members of the Palmyrene unit. Almost all were very probably produced by clerical or administrative military staff. This judgement is predicated not only on their discovery context but also on the basis of the handwriting, which, in all but a very small minority, is standard throughout the army, as their editors Welles and Marichal both recognise (TEAD-P&P, p.55; ChLA VI-IX *passim*). The dates at which the documents were written span, judging from the few precisely dated examples, the years 208 CE (P. Dura 56 and 60) to 255 CE (P. Dura 118). For both the earlier and the later dates other papyri impossible to date may exceed them and many documents are so fragmentary as to elude any interpretation of their contents at all.

---

[63] A number of Dura papyri are also presented with full textual reproduction in Stauner (2004). His volume is comparable with Fink's, in the sense that it contains a selection of military Roman document-types. I have not included it, however, because its catalogue of papyri is not as large as Fink's (although it does contain a very useful catalogue of inscriptions that cite Roman clerical soldiers) and because it is too new yet to have a reputation as a standard reference work.

Generally still recognized in modern scholarship are those categorisations of military documentation set up by Fink and published in 1971 in his '**Roman Military Records on Papyrus**' (RMR) in an edition which supersedes his earlier published work on the subject. [64] In this work each categorised genre is discussed in some detail, and Fink finds that, barring fragments of which too little remains for any attempt at classification, the Dura papyri represent several different types of standard military document, some of which are known from elsewhere and others that are otherwise unattested. There are troop rosters, both complete and partial, letters, both incoming and outgoing and many miscellaneous lists of soldiers. There are the daily 'morning reports', periodic summaries of troop movements and a large collection of official correspondence.[65] A notable category of military document missing from Dura but represented in finds from elsewhere, is that relating to accounting or to the unit's financial information (TEAD-P&P, p.36).

Some documents offer unique insight into aspects of army life and administration. These include the famous calendar, P. Dura 54 (RMR, pp. 179-82), and the long unit rosters (P. Dura 100 and 101 = RMR, pp.2, 10 and Nos. 1-8), documents called by Vegetius '*matriculae*' (*de Rei Mil.,* 2.7). Both the morning reports and the rosters are arranged in a standard pattern also attested in documents of this type from camps other than Dura. The morning reports P. Dura 82-89, as Fink observes, show slight variations in their components but essentially share 'the same content' (RMR, pp.2-3, 180; see likewise Stauner: 2004, pp. 74-105).[66] Fink argues that the variation in content between standard document types indicates that the scribes

---

[64] Fink had begun his work on the papyri for his 1934 Yale University doctoral thesis on Roman military documents under the supervision of Michael Rostovtzeff. He was later responsible for Sections D. 'The Strength and Organisation of the *Cohors Vicesima Palmyrenoru*m', E. 'The Archives', F. 'The Rolls and Rosters' and some editions of the papyri in the final Dura excavation report on the documents (TEAD-P&P, pp.36-45).

[65] The morning reports are probably to be identified as examples of the document that Appian called 'βιβλίον ἐφήμερον' (*Bell.Civ.* 5, 46). No specific Latin term survives for them but Rostovtzeff used his own name: '*acta diurna*'.

[66] They correspond too to the 1st century PSI XIII 1307 (RMR, p.197 and No.51, although this latter is too fragmentary to allow detailed comparison.

had a certain limited freedom in their construction and that therefore rather than using a standard template they were following a taught – and consequently more flexible – custom.[67] There is plenty of evidence to suggest that the Dura scribes would have been perfectly capable of writing such a document at least relatively independently.

Many of the Dura documents show that they were 'working' records. Some carefully notate the whereabouts of the individual soldiers, and thereby reveal the importance of the administrative tasks for the general functioning and welfare of the whole unit. Many also preserve annotations of various kinds added on different occasions. The markings attest to the use and consultation of such documents during their term of validity, and this probably went on until the number of such annotations and alterations made replacement documents necessary. Indeed, it is unlikely that the Dura letters sat neglected in dead, dusty archives. It has even been asserted that the erasure of the name 'Geta' (in P. Dura 56a, ll.9-10), presumably following his *damnatio*, shows that four years after the book had been made up it was still being consulted. However because it has been erased the reading is problematic and has been supplied by the editors with little obvious pretext for so doing (TEAD-P&P, p.218; ChLA-VI, p.15).[68]

For the morning reports it is possible at least that they may have had regular uses and habitual daily routines associated with them. The rigidity of the date formulae in the opening lines that occurs across the genre and the repetitive detailing, in the body of the document, of unit activities with religious associations (the swearing of the oath and the watch over the standards) suggests a traditional, perhaps almost ritualised documentary habit (Phang: 2007,

---

[67] However, at Bu Njem Adams found that templates were used for certain of their documents. Here, the trained clerk (probably the *librarius*) set out the templates in a standard form and left blanks for the non-clerically trained soldiers to fill in (1994, pp.93-4).
[68] A physical inspection of the papyrus itself is necessary here.

p.302, Note 12). Williamson has suggested that the morning assembly to swear the oath and to hear the orders for the day, as mentioned above and as is documented in these morning reports, functioned in the army as an institutionalised means to focus the soldiers' energies on their role and their duties together (2004, p.229). The writing up of the completed event was almost certainly done daily, for as Marichal shows, in one (P. Dura 89) there is a change of hand for different days. The act of writing was thus a reinforcement of the event in documentary form which would later be filed and kept in the unit archive.

An important element of Roman military documentation well-represented at Dura is the correspondence. As Fink had early on recognised,

> 'A very large part of the... business of the Roman world was conducted in the formal
> guise of letters. Governors... and field commanders of armies reported... in epistolary
> form and their reports [were] called *'litterae'* or *'epistulae'* (RMR, p.348 - nowadays
> almost a commonplace; see most recently Nelis-Clément: 2006).[69]

All sorts of communications, both within the army and between the army and the civilian world, were sent in letter form, and the rich evidence for official correspondence at Dura is still unrivalled. However Dura's letter collection is today supplemented with plentiful published illustrations of similar military letters from other camps. All such examples reinforce the key role of communications in the operations of the army. From Dura, for example, there survives a roll of circular letters sent out from the governor's office to all the commanders of the regions (P. Dura 60). Actually, the fact that none bears an original signature suggests that most at least of these are copies, but whether they were made by the

---

[69] And cf. Suetonius, *Julius* 56.6.

Dura clerks on their receipt or by those of the governor before sending out is uncertain. Either way the attention to careful administration practices is remarkable.

Many Dura letters are certainly original documents and they bear the autograph closures of their senders. When Marichal published ChLA VI he saw such original correspondence as pre-eminent amongst the Latin examples, although sadly no complete original example survives (ChLA-VI, p.10). There are many parts of such letters, however, and also many tiny, illegible fragments. All are service letters, most concern personnel and some have 'enclosures'. Their layout and the formulae generally are comparable with known examples found elsewhere in the Roman world. Routinely closed with an autograph subscription, they were probably sent rolled up and sealed.[70]

Incoming letters were filed in a roll formed by sticking letters together, known in Latin as '*libri epistolarum acceptarum*', into which they were stuck as they were received and in that order from left to right, the left-hand margin of each stuck onto the right-hand margin of the letter preceding. There is no record of a soldier with the title *'glutinarius'* specifically responsible for this task, but individuals (probably slaves) are described as such in the civilian world (Turner: 1983). Documents seem to have been put onto the same rolls by virtue of their relation to each other (ChLA-VI, p.10). Some *libri* were organised thematically by content or by their senders, others perhaps purely chronologically and containing apparently more diverse documents.

P. Dura 66, the longest surviving piece of such a composite roll, contains correspondence received by (or copies probably of outgoing letters relating to) the cohort tribune Postumius

---

[70] But no trace of seals has been recovered

Aurelianus in 216 CE (TEAD-P&P, p.235).[71] Marichal calculates that the surviving section

measures six to seven metres in length, but that the original roll was probably longer than this.

It illustrates that the filing practice was probably to add file copies of outgoing letters to the

roll alongside received letters treating the same subjects (ChLA-VI, p.10). The date of the

receipt of incoming letters was written into the margin by the receiving clerks and the remains

of this roll demonstrate once again the care taken over the matter of filing by the clerks.

On the verso of original letters, perpendicular to the text on the recto, the name and the title of

the addressee is followed by the name and the title of the sender and this ran along the vertical

axis of the roll and was visible on the outside. The syntax used in the letter-addresses from

Dura corresponds with that used elsewhere in Roman military correspondence.[72] The

development of the writing used for the name of the addressee can be traced from far earlier

letters (notably those amongst the Vindolanda and the Vindonissa Tablets) with which it

shares certain characteristics (Bowman & Thomas: 1983: 1994: 2003; Speidel: 1996). It is

possible that a special clerk was assigned to address-writing, and I sometimes wonder whether

this was not a novice or learner scribe, since the quality of the writing, particularly in the

cursively written details of the senders of letters at Dura, is often poor.

Routine military documents would obviously vary in the input they required; some could have

been done daily by one man, while others were collaborative productions. Contributions to

the unified administrative system were made at all levels (Stauner: 2004, p.212). Each officer

in the charge of men, from the governor down to more junior levels, would have had his own

secretarial or clerical bureau of a size appropriate to his rank and his needs. This, his

---

[71] The few letters in Greek on this roll Fink thinks are probably from civil officials, but some are intra-army (RMR, p.349).
[72] At Vindonissa the address-style is reversed and '*dabis*' (never found at Dura) is quite commonly used before the addressee.

'*officium*', staffed by his '*officiales*' and their trainees and assistants, was at his disposal for the execution and dispatch of his administrative duties (Rankov: 1999; Palme: 2000; Stauner: 2004, p.153). There was also, between the different *officia*, a rank-based hierarchy, with clerks attached to more senior officers ranking above those in the more junior departments.

Soldiers' work, '*labor militaris*' through successful accomplishment of which the men could increase their status, was part of a deliberate process designed to keep soldiers constantly busy. It was formally documented and administered and it conditioned soldiers to obedience. At the same time, the authorities were careful to distinguish it from meniality and any taint of servility. This point has recently been convincingly made at length by Phang in her monograph (2008), a topic she had first considered in print in (Phang: 2005). The work that the men did was distinct from that given to slaves and soldiers could acquire '*virtus'* from proven efficiency in their particular departments. The high quality of most of the evidence for clerical activities at Dura suggests indeed that writing documents was considered important military work and that much pride was taken in the camp there over its efficient acquittal.

5. LATIN, LITERACY AND LEARNING

5.1. LEARNING LATIN

Latin was never to become, in Eastern Syria at least,

> 'a let alone the, normal language of daily speech' (Millar: 1993, p.527).

But yet, the soldiers and scribes of the *Cohors XX Palmyrenorum* used and would have been accustomed to hearing and seeing it used in the running of their camp and in their duties. However, few of them would have been native speakers, and although they used Latin to write their administrative documents, most are unlikely to have received any Latin literate training prior to their enlistment. Why was it then that the cohort at Dura-Europos used Latin throughout their regular documentation? In my attempt to answer this question here, I also consider the circumstances in which the soldiers at Dura might have acquired or been taught the language and their likely attitude towards it.

Dura-Europos housed speakers of many languages and perhaps particularly speakers of Syriac dialects. Many educated people in the city also spoke and/or wrote Greek, at least as a second language, and Greek was the administrative *lingua franca* at the time that the Romans arrived. Cultured Romans of course also knew Greek and they continued to speak it, to write texts in it and to value its literature and its past. In legal adjudications in Eastern regions overseen by military officers the use of Greek is not uncommon and the evidence shows that there were soldiers at Dura quite competent in the language. Two papyrus documents (P. Dura 125 and 6) survive from the scribal complex, each similar to the other in appearance and each relating to legal proceedings adjudicated by the cohort tribune Laronius Secundianus in c. 235 CE.

P. Dura 125 is written in Latin throughout. It contains two hands: the second probably an autograph signature of the tribune himself and the first, the main body, a practised clerical hand. P. Dura 126, a recorded legal decision made by the same tribune, is entirely in Greek. It also bears two hands: one clerical and the other, again probably the tribune's signature, this time in Greek.[73] Not only therefore, does it seem that the tribune could deliver his oral judgments in either Greek or Latin as best suited the particular case; it is plausible he could also write and appropriately validate documents in either tongue and similarly possible that so could his clerk.

In fact it is nowadays generally understood that the Roman state, faced with territories whose inhabitants were ignorant of Latin, saved having to undertake enormous training programmes for Latin teaching by exploiting the pre-existing knowledge of Greek throughout Rome's Eastern provinces and that it allowed, and even encouraged, Greek as a medium for its communications with the inhabitants of those regions (Millar: 1995, p.509). In the army in the East and other Greek-speaking regions, Greek was a functional alternative to Latin often of little or no difference in status. Where it was easier and more convenient to communicate in Greek it was usually permissible (Adams: 2003a, p.606).

Despite the diversity of document types in the Dura papyri corpus the overwhelming majority are written in Latin. Given the Greek backdrop in Dura-Europos and given its background in Greek, why was this? It seems unparalleled by survivals from Egyptian garrisons where the military documents in Latin are a tiny minority amongst the preponderance of Greek. Although perhaps an accident of survival rather than a reflection of reality it is curious that Dura so stands out.

---

[73] P. Dura 127 in Greek, is also probably a similar document but too little of this survives to be certain about either its contents or writing hands.

The Greek graffiti, which was left by all types of people, far outnumbers the Latin in the city. But if we look at the general use of Latin language in the city, it becomes clear that the graffiti in the latter language is always to be associated with the military, although some of the Greek graffiti was left by soldiers. In the Dolicheneum for example, the soldiers' names left in graffiti are in both Latin and Greek (TEAD-IX.3, pp.107–24, Nos. 970-78, 983 and 987) while in the Temple of Gadde, soldiers' names (some of which reflect the pre-Roman Palmyrene cohort) are in both Greek and Palmyrene (TEAD-VII/VIII, pp. 258-72, Pls. xxvi–xxvii; p.277, No.906; p.279, No.909) as is also an inscription at the Palmyrene Gate (TEAD-I: p.62). Clearly the soldiers do not belong to a monolingual institution and there is no compulsion upon them to use Latin and exclusively Latin. Graffiti on walls may often have reflected the alphabet with which the soldier was most familiar and to which he related most strongly in the particular moment. But in fact given languages have different associations in their culture and the choice of one or the other in the moment of writing can often be conditioned by the particular content of the text to be written (Adams: 2003a, pp.247-257).

That senior officers projected their self-image in Latin language funerary monuments highlighting their Latin names, honorary titles and ranks is well-recognised (remarks, for example, in Williamson: 1995). In this way élites, including military élites, publicise their claim to a privileged status (Häussler: 2002). Indeed, sometimes proposed in Roman studies is a dichotomy between the two languages whereby Latin is used for 'official' state-associated purposes while Greek has more elevated uses (such as literary). However, the far greater use of Greek in the surviving epigraphic and papyrological evidence from Egypt and the East - whereby many inscriptions that would be classified 'official' are written in Greek, not Latin - suggests that the distinction is an over-simplification and that the actual situation is altogether more nuanced.

Adams has recently brought his linguistic competence to bear on certain military inscriptions found in Syria (shown in Balty & Van Rengen: 1993) in which he observes the Greek linguistic interference and the difficulty the writers had had using Latin is patent. From this, he reasons – and he would know better than most - that the soldiers' insistence on using the language reflects the fact that they felt only Latin had the power to *symbolically* express the sense of their military lives (Adams: 2003a, pp.198-200 - my italics). The format and general appearance of these monuments is perhaps more important than their textual content. I detailed in Section 1 some other comparable means by which the physical form of written monuments could be highlighted.

The Latin language may well have, as Adams suggests, a particular ceremonial function acquired from its given association with the Roman state, its structure, history and founding principles. The use of Latin in the army, in particular, may have had a ritualised, celebratory function, uniting all soldiers as they used it, enforcing their military bond. Here, in certain situations, Latin was almost exclusively used. It was standard, for example, in auxiliary diplomas marking a soldier's citizenship at the termination of his service. Soldiers swore their daily oath (the *'sacramentum'*) in Latin; watchwords were in Latin and so were 'stereotyped orders', even in the east and as late as the Byzantine period (Adams: 2003a, p.201; Phang: 2007, p.301).

It may have been therefore the 'kudos' associated with Latin that, at least in part, led the Palmyrene cohort's clerical soldiers at Dura to use it consistently throughout their papyrus documentation, particularly given the possibility outlined in 2.3 above that the unit may have been rather high status élite troops. If that were indeed the case, the expression of their Romanisation would have been of special importance.

Thus although at all periods of Roman history military documents written in Greek were permitted and understood, for this language the strictures were not that it *had* to be used but rather that in certain situations it ought *not* to be. For Adams Latin was, in contrast,

> 'a sort of supreme or super-high language in the army, which was bound to be used in certain circumstances...' (Adams: 2003a, p.608).

He outlines, convincingly and with copious illustration, the probability that a certain specifically Roman military sentiment could not be expressed in Greek. In general in a military context, this often makes Latin the more likely linguistic choice if the soldiers were sufficiently proficient. A certain utilitarianism was permitted however, and the choice of the moment could also be influenced by the linguistic skills of the participants in the particular exchange.

If Latin and Greek were usually permissible alternatives in the lives of the cohort soldiers, no similar egalitarianism was extended by the state to other languages and written documentation in any other tongue was generally excluded from military use. Roman authorities were not customarily prepared to accept documents in Egyptian for example (Fewster: 2002, pp.225-6 and Note 23). Bruno Rochette puts this case quite strongly and giving several examples, he maintains that all languages, bar Latin and Greek, are to the Romans 'barbaric' (Rochette: 1997b, p.149). Adams, similarly, finds 'an implication ... that Latin speakers [... in] the Near East would be unlikely to communicate (with natives) in the native language of the area, Aramaic, but would tend rather to use Greek...' (Adams: 2003a, p.265). It was important obviously in official or administrative matters that the parties understood each other and customarily, the Roman soldier on official business would travel together with interpreters (Rochette: 1997b, p.110). Such men could probably speak either Latin or Greek and they had

an important role in the army and in the provincial administration (Rochette: 1994; Adams: 2003a, pp.277-8).

Aramaic languages, of which Palmyrene is one, not infrequently and exceptionally amongst the native languages of the Empire appears on inscriptions and monuments. Its usages differ from those for which Latin is used. Adams notes, for example, that on funerary military inscriptions Latin represents 'the deceased's professional voice', while the Aramaic expresses more personal details (Adams: 2003a, p.567). Indeed he concludes, from his survey of the evidence, that the Palmyrenes had a well-developed literary culture and that their soldiers were 'almost unique amongst barbarian auxiliary units' (*sic*) for their practice of inscribing and displaying their language, along with either Latin or Greek, on public texts set up by serving military men and officials (Adams: 2003a, pp.256-7). Palmyrenes thus reveal themselves reluctant to abandon their national identity entirely even when they serve in the Roman army. But Palmyrenes, Adams notes in his study, were also demonstrably good language learners and Palmyrene soldiers in the clerical departments of the *Cohors XX Palmyrenorum* being asked to draw up documents in Latin may well have enjoyed the challenge this posed and relished their linguistic abilities.

In a military unit within which there is a largely mixed linguistic population, the choice of Latin, rather than Greek, for its routine procedures and the bulk of its documentation could be more useful, perhaps for a variety of reasons. Arguably, Latin is the more necessary language, since while most things could be carried out in Greek, the ceremonial, ritualised functions of military life could not so well be. If Greek was the '*lingua franca*' for the soldiers at Dura, Latin would still have been used for at least some procedures.

At Dura, while perhaps most troops were local, there was also very probably, as I earlier

suggested, at least a sprinkle of soldiers from Eastern Europe, the Balkans and Africa, if not

from elsewhere, at least at times. Troops and particularly officers would also have come into

the city as they moved from and between other areas of the Empire (Gilliam: 1965, p.67).

Many of these men coming into the city, and those serving under them, would have spoken

their own native tongues and not all the cohort soldiers, therefore, would have been

necessarily well-versed in Greek. Most ordinary soldiers are recruited from simple,

uneducated men after all. Macmullen's assertion that a 'high proportion of Syrians spoke

only native languages – a much smaller proportion also knew Greek' would probably have

applied to men in such a social bracket (Macmullen: 1966, p.5). Indeed at least sometimes, in

the camp as a whole, non-Greek speaking soldiers may actually have been in the majority.

Here then, Latin would have been the more suitable language to use in troop procedures.

In addition, a new element in the balance of languages in the Empire had come into effect in

212 CE, a few years later than the first dated papyrus document from Dura. The so-called

'Constitutio Antoniniana' which made citizens of all Roman soldiers, was arguably an

attempt to unify the Roman and Greek elements of the empire by imposing a single legal

system (cf. page 9 above). It meant Roman law was adopted throughout the entire empire

replacing Greek law where this had previously prevailed. Its additional effect was to drive

and to stimulate those people who had formerly carried out official business in Greek to learn

Latin (Rochette: 1997b, p.107; for a more modified view see Cribiore: 2003/4).[74]

To give this question proper treatment would go well beyond the scope of this thesis, but the

salient point is that the choice was made at Dura, perhaps by its commanding officers, perhaps

---

[74] For Rochette, the later expansion of Latin as the language of the entire administration under Diocletian is
confirmation that at an earlier date this was an already burgeoning trend (Rochette: 1999, p.325).

by a higher source, to use Latin in the cohort's standard documentation. This may have been a matter of prestige or it may have been a choice of convenience, but it was also a choice representative of a linguistic standardisation and consequent uniformity across the empire which increasingly operated in Latin. The camp at Dura-Europos seems also, at least in its public presentations, to have made a bid for unity in the linguistic sphere.

Sufficient documents now survive from Roman military contexts to show that many soldiers wrote Latin easily. While their newly acquired 'Roman identity' perhaps gave the Dura soldiers motivation to learn the Latin language, the military camp may also have presented an ideal situation in which to do this (Rochette: 1997b, p.147). Living at one remove from the linguistic pluralism of civilian life and often compelled to use it, both as a *'lingua franca'* for use with other non-Greek speaking soldiers and in their military daily routines, soldiers should quickly have gained at least a basic grasp. This would be dependent, however, on the existence of competent teachers and teaching resources and to these I turn my attention in the following sub-section.

5.2   <u>MILITARY LITERACY</u>

Yet to be considered here is the issue of military literacy in the Dura camp, and specifically literacy in Latin. The question is a difficult one to treat and not only because, as Bowman once commented, attempts to quantify the scale of ancient literacy 'face formidable difficulties' (Bowman: 1994, 2003, p.79). I will begin it, however, by referring or deferring to the work of Mireille Corbier. Corbier has spent many years researching into writing, particularly public writing in Roman cities and her work has been influential on many who work with Roman documents. Many of her earlier papers have recently been re-edited and reproduced together with newer material in (Corbier: 2007). Principally, she has argued, with great clarity and force, that the state ensured most members of its society could read its posted and inscribed publications because the language it used in them was kept particularly simple. Public language was commonly

> 'a sort of *basic Latin*, adapted, in a *basic writing*, to the needs of a *basic reading* ability which would have allowed the greatest number to read, to recognise or to have themselves read a relatively restrained number of words and current abbreviations. These were part of a syntax voluntarily simplified, without relative or subordinate clauses, juxtaposed around a verb in the present or perfect (the latter sometimes omitted), a suite of datives, nominatives in apposition and ablative absolutes' (Corbier: 1987, p.60, Corbier's italics).[75]

I mentioned earlier (2.4 above) the soldier's familiarity with the sight of his own Roman name in Roman letters and suggested that this same familiarity may well have extended to the name

---

[75] *'... une sorte de basic latin, adapté par un basing [sic] writing aux besoins d'un basic reading qui aurait permis au plus grand nombre de lire, de reconnaître ou de se faire lire un nombre relativement restreint de mots et d'abréviations courantes au sense fortement codé, intégrés dans une syntaxe volontairement simplifiée, sans relatives ni subordonnées, juxtaposant autour d'un verbe au présent ou au parfait (lui-même parfois omis) une suite de datifs, de nominatifs en apposition et d'ablatifs absolus.'*

and title of his unit when displayed and even to that of the emperor. This is a simple example of the kind of phenomenon to which Corbier refers.

For Corbier a city is usually a place not of living language but of slogans, both in its presentation of state publicity and in the widespread response to this shown in its private inscriptions and in its graffiti (Corbier: 1987, p.53). For her too, the known Roman penchant for word and letter games, for which evidence is ubiquitous on the pavements and stonework of former Roman cities, is to be explained as the outward expression of a populace fed on a diet of stock phrases containing 'terms that can be modified or replaced...'(Corbier: 1987, p.59; also Purcell: 1995; Woolf: 2009).[76] It does indeed seem possible that the common citations of Virgil (and less frequently Ovid) in graffiti from all over the Roman world are testimony to a society that, in response to a state that made efforts to promote and to stress the importance of the written word, was keen to acquire and to profess literacy. At a basic level literacy was publicly flaunted (early papers treating the evidence for this at Pompeii in Franklin: 1991; Horsfall: 1994). People were generally aided also by an education system in which memory training was a key element and by the existence of public proclaimers (*praecones*), public readers and readings, and oral spectacles.

Many examples of texts that require only a basic literacy have been recovered from Dura. Word games, alphabets and other expressions of nascent and elementary literacy were left on many of the city walls. [77] In Room W14 – a room associated of course with the cohort clerks - several '*sator arepo*' squares (eg. TEAD-V, p.159, No. 481a-c & Pl. XXVII, 2 [online, accessed January 20th 2010] http://ecatalogue.art.yale.edu/detail.htm?objectId=5755, Yale Art Gallery No. 1933.298) were found on the wall now in the Yale Art Gallery's web-catalogue. There

---

[76] '*dont les termes pourront être modifiés ou remplacés...*'
[77] Two Aeneid quotations were found at Dura, one in the 'Palace of the *Dux Ripae*' and one in E4, the barracks area (TEAD-IX.3: No. 960; TEAD-VI, p.48, No. 628).

are also assorted graffiti all over the city, many in Greek, which have been described in the past as having a 'magic character'. These too could equally be quite simply word games (TEAD-IX.3: p.41 and Note 45). Their proper interpretation is difficult (Habinek: 2009) and graffiti alphabets for Purcell are simply symbols of writing (Purcell: 1995).

Corbier may be quite correct to argue for simplicity of language and a commonly widespread basic level of linguistic comprehension. Even a little alphabetic familiarity and quite elementary literacy can take one surprisingly far. But more importantly perhaps, in Roman society generally written documents would generally be broadcasted to others. As long as one person in a community could read them their contents could be orally transmitted to the whole group. The concept of posted notices, such as the camp *'album'* at Bu Njem, for example, already referred to, is exactly a practice that

> '... makes use of the probable reading ability of the few and the ears of the many'
> (Bowman: 1994, p.112).

A recent article by Verhoogt, which considers the issues of letter-writing in modern day Mali – a country that clearly remains little affected in its more remote areas at least by modernisation – is quite illuminating in this regard, and clearly shows the power that one literate can have in an otherwise illiterate village (Verhoogt: 2009).

But a further difficulty in discussing these issues is the obvious confusion in the modern literature over the scope of the term 'literacy'. Often generally understood (and over-simplified) as the ability to read, it is generally thought more useful today to split 'literacy' into subfields: different types of social literacies which encompass different needs and uses for literate abilities (Bowman: 1994; Hopkins: 1991). Importantly here, reading and writing must be treated as separate skills and they were not, in any case, necessarily taught in

conjunction. Roman culture was a scribal culture after all (see Cribiore: 2003/4, p.111). Some people would have been able to read but not write and the reverse is probably equally true.

Calls for a more differentiating approach to literacy in modern Classical Studies were perhaps particularly stimulated in 1989 by the appearance of a volume by W.V. Harris entitled '**Ancient Literacy**' (Harris: 1989, p.272). Following this, in 1991 a volume of collected papers appeared, the contributions to which without exception were apparently generated as a reaction to Harris's low estimation of ancient, and specifically Roman, literacy (Humphrey: 1991). Harris estimated literacy to have been, in the Republic and High Empire, one in ten of the total population (Harris: 1989, p.272). But the papers in the Humphrey volume seem in agreement that Harris had greatly underestimated the extent of Roman 'literacy' and each revisionist scholar writing in it presents arguments for increasing Harris's figure as well as for honing differentiations between literates and non-literates generally. The bare figures were less of an issue to the contributors to Humphrey than the common idea that the power and influence of literacy in society extended far beyond the few true literates (however they were to be defined) themselves. I have already suggested several ways in which this is seen to be true.

If we look at the quantity of evidence for specifically military Roman literacy, quite aside from the vast, largely nineteenth century papyrological corpus, there are now several significant twentieth century discoveries of army documents. These include the tablets from Vindolanda (Bowman & Thomas, 1983; 1994; 2003), Vindonissa (Speidel: 1996), the *ostraca* from Bu Njem, Libya (Marichal: 1992) and also from Mons Claudianus (Bingen: 1992-2000). There have been several other papyri finds too, and, relevantly, from elsewhere in the Near

East region (Bowersock: 1991; Feissel and Gascou: 1989-2000). Certainly, analysis of the handwriting of any of these corpora shows a sufficient variety of hands amongst soldiers to suggest a widespread ability to write at least rudimentary letters. Thus Bowman and Thomas are able to illustrate the 'astonishing' amount of individual hands, numbered in hundreds, amongst finds at Vindolanda. The reports bearing the heading *'renuntium'* for example, effectively status reports on troops in their camps, are all written by different writers and very probably in fact by the '*optiones'* themselves. These were junior commanders, not men in specifically clerical posts. Similar to these are the '*commeatus*' (request for leave) chits, some of which are 'quite good and coming, we may assume, from soldiers in the lower ranks' (Bowman: 2003, p.85).

The men's literate ability, at least in some cases, had been acquired before their recruitment.[78] Stauner gives several examples of literate, presumably officer, recruits and one thanks his father in a letter for his reading and writing ability in Greek (Stauner: 2004, p.15). The Vindolanda Tablets contain good evidence for a literate officer class in that several officers' letters surviving from Vindolanda are probably autograph, those of Flavius Cerialis for example. The élite literacy in the officer class could indeed have gone a long way towards regulation of the lives of the rest (Adams: 1995, p.129). But for centurions and holders of some further 'NCO'-type posts there must also have been an additional functional demand that they were, at least to a basic degree, 'literate'. The *signiferi* seem to have kept the account books for the soldiers in their cohorts and this they could not have done without both elementary literacy and numeracy (Stauner: 2004, pp.64-67).

---

[78] At Dura such writers might well have written Greek rather than Latin, e.g. Barsumius Bassus, P. Oxy XLI, 2951, a document that strongly bears comparison with some of the Dura papyri (Oxyrhynchus Papyri [online]. http://www.csad.ox.ac.uk/Poxy/papyri/vol41/pages/2951.htm [Accessed 21st January 2010]).

Harris had thought that only legionary soldiers would commonly have been literate since they came generally from better families (Harris: 1989, p.253). Yet soldiers' personal letters seem also often to have been written by ordinary men, and scholars have commented on the casual approach to letter writing many of the soldiers have. Harris, on the basis that one third of the soldiers whose receipts survive on a papyrus record (P. Gen. Lat. 1 = RMR 68) signed for the payment in their own hands, assumed that the other two-thirds could not write (Harris: 1989; also Stauner: 2004, p.71). But this is something of a tenuous conjecture and the overall picture of military literacy remains muddled and unclear. It was probably indeed highly varied, with some camps and units, even regions, being far better-equipped to implement and maintain literacy levels and standards than others.

Many, if not most, soldiers of local origin stationed at Bu Njem would have been native Punic speakers. An *ostracon* recovered from the camp there bears a letter in the Punic language but yet it was written using Latin letters (No. 146, pp.45-6, 240).[79] This suggests that its writer had at least been taught the Latin alphabet symbols together with their aural equivalence to the sounds of Punic. Marichal argues that in fact African bureaucrats were familiar with a 'latino-punique' alphabet, which presupposes the existence of bilingual grammarians capable of comparing the phonemes of the two languages and establishing the transliteration (Marichal: 1992, pp. 44-5). Because he views it as unlikely that this system would have been taught in the army – there being no point, as he sees it, in teaching recruits to write Punic - he reasons it must be a product of African schools.

Vegetius insists that literate men should be sought after amongst new recruits.

---

[79] However, in reproduction at least it is extremely difficult to make out any writing on this sherd – and what there is could well be a list of soldiers' names.

'Since there are several administrative departments in the legions which require literate soldiers, it is advisable that those approving recruits should test everyone for tall stature, physical strength and alertness in everyone indeed, but in some the knowledge of 'symbols' and expertise in calculation and reckoning is selected' (*Ep. Rei Mil.* 2.19).[80]

This confirms certainly that some soldiers at least would have acquired their literacy before they enrolled. It was in the interest of the individual to acquire literacy wherever there was an opportunity to do so. He would also need, perhaps, to acquire Latin if not Greek and large numbers of papyri survive particularly from the Later Empire containing glossaries and lists of words that indicate language learning, often perhaps privately initiated (Rochette: 1996: 1999). It was also in the army's interest, however, to ensure that a man could become literate if he were not already so, for basic reading skills, at least for some soldiers, were a prerequisite, as already suggested, for the transmission and instigation of military communiqués (e.g. Best: 1966; Bowman: 1991; Galsterer: 1999, p.37).

Overall then, while the degree of literacy that soldiers commonly had before their enlistment is not well understood, almost certainly the army must have had in place to aid its own efficiency certain measures to further comprehension of their communications and to increase the ability of the individual soldier to contribute to them. In the following section, I will briefly survey some of the unfortunately fragile evidence for this.

---

[80] *'Sed quoniam in legionibus plures scholae sunt, quae litteratos milites quaerunt, ab his, qui tirones probant, in omnibus quidem staturae magnitudinem, corporis robur, alacritatem animi conuenit explorari, sed in quibusdam notarum peritia, calculandi computandique usus eligitur.'*

5.3   LANGUAGE TEACHING

Marichal (as related in Section 5.2 above) thought that a certain number of recruits into the North African garrison at Bu Njem had already obtained, before their enlistment, at least some knowledge of Latin letters. But yet it is equally possible that the Punic-Latin phonemic system could have been used as a teaching aid in an African military classroom – if nothing else, it suggests learning of the alphabet. As at Dura, there is other, admittedly limited, evidence for Latin learning in the camp. Ostracon No.144 appears to carry the name '*Dido*'. This may be an entire coincidence for the ostracon is incomplete and otherwise little sense can be made of it. For Marichal, however, it is evidence of knowledge of the *Aeneid* and it must necessarily come from an educational context. Its script, a large rudimentary capital does appear to fit such a picture (Marichal: 1992, pp.44-5, 234-5).[81]

A familiar Latin palindrome was also found on a Bu Njem wall probably, as at Dura, the '*sator arepo*' square. This evidence, together with the linguistic and graphic abilities of the Bu Njem scribes as attested by the surviving sherds, is cumulatively sufficient, for Marichal, to indicate that teaching took place in the army at Bu Njem. He writes, that the commander

> 'could not help but seize the opportunity, if not the necessity' of having as many men as possible capable of reading and writing Latin at least to a very basic level (Marichal: 1992, p.46).

It seems, given all said above, perfectly logical that the Roman military authorities would have taken the chance of improving the overall literate ability of their soldiers.

---

[81] '*grosse capitale rudimentaire*'.

More recently, Adams has brought his linguistic skills to bear upon the Bu Njem camp. His results also support the idea that soldiers there received literate education. Looking closely at the patterns of non-occurrence or correction of expected 'errors' of spelling in the *ostraca*, he sees a guiding influence behind their recurrences and deduces from this that the writers had received spelling training (Adams: 1999, p.123). The emphasis in elementary military literate education, he writes, was probably upon utilitarian clarity rather than grammatical precision and similar analyses he had made earlier of the Vindolanda Tablets had led him to similar conclusions (Adams: 1995: 2003a, pp.617-623). His results point to an army educational policy that was concerned to standardise Latin spelling amongst soldiers and to regularly correct phonemic errors induced by native language influence. The soldiers' instruction, he thought, would necessarily have been more extensive in units with large numbers of neither Latin nor Greek native-speaking soldiers (Adams: 2003a, p.633). Africans fit into this category, as do equally many soldiers in Palmyrene units.

Adams also made detailed studies of the language used in two inscriptions at Bu Njem, each put up by a centurion whom he assumes in each case to have been responsible for the composition of the text (Adams: 1999). From these, he finds cogent linguistic evidence to support the idea that one Bu Njem centurion had probably attended the school of a *grammaticus* before he enlisted while the second, perhaps an African by birth, had had a far more limited literate education and that most obviously in spelling and inflection. The consistency in the African's Latin suggests he had received his education during his military service, but Adams, the linguist, also detected in it 'certain cultural aspirations'. Despite the generally basic level of his language, the centurion had chosen, in his inscribed commemoration on a building in the camp, to write verses in classical hexameters. These reveal in their scansion and syntax, however, that he had not fully mastered the form (Adams:

1999, p.130).[82] From this evidence, Adams draws the possible conclusion that there were different degrees of instruction in literacy skills available in the army to soldiers of different ranks and that more was expected of senior officers than of the ordinary soldiers, and

'more advanced instruction [was[available to them' (Adams: 1999, p.134).

This is for him the explanation for and the impetus behind the Bu Njem centurion's literary ambitions.

It is possible that, at Bu Njem and in the army more widely, soldiers received literary instruction from a civilian employed by the army for the purpose and known by the Greek title '*orthographos*' (Marichal: 1992, p.45).[83] The title is attested on several Greek inscriptions cited by Robert, and there is also a late second century papyrus reference (P. Hibeh 2:276) to an '*Ammonius orthographus leg(ionis) n(ostrae) amicus karissimus*' who perhaps taught the two legionary centurions responsible for it (Robert: 1966, p.754).[84] Interestingly for purposes here, a dedication to his '*orthographos*' may have been left by a soldier in a graffito on the wall of the Dura Mithraeum (TEAD-VII/VIII, p.118, Note 184). The graffito reads '*Νάμα [τω δεινι ?] /Ορθογράφ[ω]*', but being incomplete and hard to decipher, it is also equally difficult to interpret.

'It is curious to note'

the excavators write,

'that one of the grateful clients of a professional writer expressed his thanks to him by invoking divine blessing on him'.

---

[82] For another aspiring centurion poet: Dietz (1999).
[83] See also Davies (1974, p.307 and Note 7).
[84] Now reproduced in Photographic Archive of Papyri in the Cairo Museum [online]. http://ipap.csad.ox.ac.uk/Hibeh.html [Accessed January 21st 2010]. See also Stauner: 2004, p.90.

It would seem most likely, to judge from the man's title, that he would have paid particular attention to 'spelling' in his teaching, however loosely interpreted.

An '*orthographos*' then, it appears, may have been working at Dura but there is also a possible attestation of another teaching soldier there in a reference to a soldier with the title of '*pollio*' (Dura papyri Nos. 66 C, 7; 100 XII, 25). The readings of the context in both papyri are too incomplete to make any sense of, and both, and particularly the second, are frankly tenuous. However, according to Dietz in a paper written in 1985, there is evidence for the teaching of Latin (both oral and written) undertaken by a soldier with precisely such a title (Dietz: 1985). His argument - which focuses initially on the identity of 'Asinius Pollio', purported tutor to Marcus Aurelius - is that this in fact a textual misreading and refers instead to the title given to the emperor's language tutor, his '*pollio*'. This idea is accepted by Stauner (pp.134-135) but I can find no further reference to this issue, other than a brief note by M. van den Hout in his '**A commentary on the letters of M. Cornelius Fronto**' (Commentary on 29,6: '*Pollio*', (van den Hout: 1990, pp. 74-5: Leiden, Brill) in which van den Hout expresses some incredulity at Dietz's reading).

Dietz presents a considerable number of inscriptions that cite the '*pollio*'. They are remarkable in their consistency: all the dated Latin examples fall within a late second/early third century dating. One (CIL VIII 18086 = Dietz No.8) cites a '*dis(cens) pol(io)*' (l.8), as well as an '*M. Clodius Maximus Ar(sacal?) polio*' in the *Legio III Augusta* (l.10) to whom a '*dis pol*' is perhaps attached as a trainee.[85] Such men seem to enjoy relatively high status, revealed by the presence amongst them of an '*eq(ues) pol(io)*' (CIL 14507 = Dietz No.4) and a '*duplarius*' (CIL VIII 2564 add.18052 = Dietz No.7).

---

[85] Also in this inscription are a '*lib(rarius)*' (l.14) and a '*cor(nicularius)*' (l.19) (=Stauner QNr. 476). This enforces the clerical connection.

Dietz thinks that this man in the military perhaps taught Latin to novices at quite basic levels and perhaps also Latin literature and more advanced language and culture to higher level students, although perhaps not to the level of a *grammaticus*.[86] The man's title he thinks is taken from '*politus*', for the goal of his existence is to make of the soldier a '*homo politus*' (Dietz: 1985, p.248). Perhaps on the basis of the man's rank, Dietz also suggests he may have taught particularly officers, and these he assumes generally to already have some form of literacy and some knowledge of Latin.

The '*scholam po(l)ionum leg(ionum) IIII*' at Lugdunum is attested on a building inscription paid for and dedicated by T. Fl(avius) Super Cepula in 5.11.207 CE (AE 1913, 124 = Dietz No.9). This dedicator describes himself as a veteran '*scaenicus*' (actor) and, as Dietz suggests, this might indicate that the military theatre could have been valued and used for its contribution to second-language learning. It is possible too, that the *pollio* worked with the *scaenici* on their Latin diction. Specific evidence for Latin learning at Dura comes from the 'Palace of the *Dux Ripae*' in a Latin alphabet found in Room 6. This may reinforce Dietz's connection of the *pollio* with the *scaenici*. A Latin alphabet was found in Room 6 in the 'Palace' (TEAD-IX.3, p.40, No. 951). The Report editors propose that since Room 7, adjoining 6, was used by actors, the alphabet proves that they were indeed learning Latin (TEAD-IX.3, p. 41).[87] However, an alternative possibility is that the children of the household of the *dux* were here taught their Latin.

Support for the idea of Latin education comes also from Room 59, the so-called 'audience room' of the Palace, where a fragment of an inscription was recovered containing part of

---

[86] A secondary school level teacher of rhetoric.
[87] This brings the total number of Latin alphabets found at Dura to four. The other three were in the Temple of Azzanathkona (two) (TEAD-V, pp.158-9, No.480, 481; TEAD-VI, p.485), and in a private house at C3-D5 (TEAD-VI, p.131, No. 651). For a list of the Greek alphabets and comments on the Latin examples found at Dura see (TEAD-IX.3, p.40, Note 42).

Aeneid I, I (TEAD-IX.3, p.55, No.960, Pl XI.3). This piece is witness to appreciation of standard Latin literary texts and is typical of other similar fragments also reminiscent of pedagogic contexts found in army camps elsewhere (Vindolanda Tablet No. 118 for example).

To account for the quality of the Dura papyri we must surely hypothesise that some Latin teaching was given in the army at least to the clerks who compiled them. Marichal remarks that the quality of the clerks' Latin in the Dura documents is basic and that they knew 'only the most common phrases' (ChLA-IX, p.15) but this should not too much diminish the achievement to which the documents are witnesses.[88] The commanders of the *Cohors XX Palmyrenorum* clearly insisted on the consistent production of routine Latin documents which made use of the appropriate standard formats.

Rochette has no difficulty in imagining the army facilitating Latin language learning amongst its soldiers as mentioned earlier (5.1), and suggests even that the historian Ammianus Marcellinus probably learned his Latin that way (Rochette: 1997b, p.147). Dunlap, in his study of the purported school grammar book found in Karanis (dated c. 180-220) which has on the verso side a military report, comments on its good Latin and, on the basis of the report, asserts it was written in a military context. He thinks that the opportunities available to ambitious, Greek-speaking young men from quite ordinary families in, for example, the civil service or higher ranks in the military, would have attracted them to Latin learning (P.Mich: 1947, VII. 449 & P. Lit. Lond. 184). This suggests that students sought out literary education independently. He also thinks it possible however that at the barracks at Karanis there was

> 'a school for the instruction of these young men',

---

[88] Welles makes some specifically linguistic observations on them, but does not comment on the quality of the language overall (TEAD-P&P, pp.49-50).

for it was here, he hypothesised, that one of the professional scribes of the commandant's staff was instructed to prepare, for the use of a master or of his pupils, the grammar-book represented by the remaining two papyrus fragments' (Dunlap: 1940, p.343).

However, the grammar is written in a bookscript and was not necessarily written by a soldier despite Dunlap's confidence. Furthermore, if it was for the use of a soldier he could have used a professional copyist (or a slave) to write it.[89] It is also possible that it was a discarded document which the military happened to re-use. Nonetheless if it were to have been written for or by soldiers it would once more suggest that the literary pretensions of its users were consistent with the 'cultural aspirations' of centurions such as those at Bu Njem.

Marichal, on the basis of a Semitic-language graffito in Greek characters, thinks that at least some soldiers at Dura-Europos had learned to write in Greek (presumably prior to enlistment), referring to (Cumont: 1926, p.367, Note 11, cited ChLA-IX, p.15). This is a large assumption to be drawn from a single graffito, but as we have seen, given the predominance of Greek in the region and its history, such a scenario is not unlikely. Knowledge of and/or literacy in Greek at various levels might both have made Latin learning less necessary and influenced the nature of the Latin Greek-speaking soldiers used and many soldiers probably learned (military) Latin through the medium of Greek, as indeed in Africa they may have learned it through Punic as the ostracon mentioned above suggested. Such is the scenario proposed to account for several cited instances of language switching or Greek influence on Latin in military documents from Egypt (Adams: 2003a, pp.621–3).

Seider publishes editions with photographs of several bilingual papyrus fragments which are thought to be from educational contexts, two of which in particular were written at

---

[89] Seider gives no reason for his comment that: *'Man könnte diesen unverkennbaren Stil Capitalis Romana militaris nennen'* (Seider: 1978, p.37, No. 5)

approximately the same time as the Dura papyri in scripts that are very comparable with them. The first of these, P. Amherst 26 was perhaps found in Palmyra (Seider: 1978, No 17). It is a Greek-Latin copy of Babrius' fables and has been dated to the early fourth century, but there is no secure basis for the dating. Babrius is well-known as a popular text in language teaching. While its Latin text has been described by its editors as heavily Graecised, both the Latin and the Greek sections are written in a documentary (as opposed to a book) script and that in which the Latin is written is very similar in style to the writing on some of the Dura papyri. Although the form of the letters is perhaps generally rounder and less fluently written, this is the peculiarity of the particular writer and overall the resemblance is quite apparent. The layout of the Latin text is also similar to that of many of the Dura Latin papyri, while the Greek text is laid out, significantly, differently.

The same comments can be made for P. Oxy 1404 (CLA XI, 1667; Seider: 1978, No 20), a Latin paraphrase of an Aesop fable dated to the second half of the third century written on the back of a Greek accounting text.[90] Like Babrius, Aesop is known as a popular school-text and the grammatical errors in this particular document are indeed reminiscent of the work of a student. The editors of this text too have commented on the evident Greek influence on its Latin, but the hand is comparable, as Seider himself notes, to P. Dura 56 or 60, both of which are written in elegant military-style clerical hands, and its dating is also estimated on the basis of its similarity to the Dura papyri. I am not absolutely in agreement with Seider that the scribe of the Oxyrhynchus fragment is in fact very 'practised' ('*geübten*') but here too a

---

[90] Several other 'pedagogical' papyri written earlier than the Dura documents, some also bilingual, are reproduced (Seider: 1978, Nos.15, 16, 18 and 19).

detailed comparison with Dura might prove instructive.[91] It is unfortunately a very small, somewhat scrappy remainder.

In sections 5.1 and 5.2 generally, I have argued both that teaching of basic reading and writing in Latin was given to soldiers of various ranks across the army to permit them to carry out their military duties, and that more advanced and possibly more literary tuition may also have been given to officers. It is possible that for many soldiers, emphasis was given in their Latin instruction to reading rather than writing skills, but this would not have been true for soldiers who were to work in the clerical administrative departments. For these men there was probably further tuition available, tuition in writing, and this will be the subject of 6.2 below. Before that however, in 6.1, I will look at the nature of the clerical posts themselves.

---

[91] And *pace* Lowe, CLA XI, 1667.

6. THE CLERICAL *OFFICIUM*

6.1 THE WORKERS

The soldiers who worked in the army's clerical offices, 'the clerks', produced the army's standard, major documents. A fundamental cog in all military administration, clerks are distinct, as 'professional' writers, from all the other soldiers in the army who wrote documents as part of other duties. They are the men who at Dura are responsible for the consistent replication of standard documentary formats and also of specific writing styles. The scripts of the Dura military papyri result from their evidently disciplined, organised working practice. By the third century clerically-trained soldiers were the holders of well-established clerical and administrative posts (Stauner: 2004, p.153). In this section I set out in brief what is known of such men and of the work that they did, both in the Roman army generally and more specifically at Dura-Europos.

In auxiliary cohorts three titles for clerks are attested: *cornicularius*, *actuarius* and *librarius*. They are distinguished in rank and presumably also usually in their duties. The *cornicularii*, the senior *principales* of the *officia* and often promoted from within it, were named after a small horn that they wore on their helmets. There is a remote possibility that this may originally have represented an inkwell (Dar.-Sagl.: 1907, pp.1509-10; NP, pp.198-9; Stauner: 2004, pp.118-24). This proposition, although attractive, cannot be confirmed (Rankov: 1999, pp.23, 36). The *cornicularius* oversaw and directed the work of the entire clerical team. He monitored and assigned work to his staff and carried the ensuing responsibility for its contents. He also checked, monitored and ordered necessary supplies for the whole unit. He would have done this by consulting documentation given to him by the unit's departments and

sub-departments, and in doing so he would have generated a new set of documentation. The necessary writing tasks this entailed may often have been done by his under-staff, but the *cornicularius* was in charge of and responsible for the whole process. Also, in his general supervisory capacity, he oversaw the filing system and ensured copy records were properly kept in all cases, here following office procedures that had long been established. He would check and verify the documents his office produced. P. Oxy 1022, a good file copy of a document recording the arrival of recruits, was probably written up by a *cornicularius* and certified by the addition of his signature as true.

As head of the tribune's entire clerical team, the *cornicularius* had specialist knowledge and competence in handling the paperwork relating to the entire unit which was probably often borne of long experience. The *cornicularius* attached to the tribune of the Palmyrene cohort had administrative responsibility for several hundred men and this would have made him a valuable member of staff. He would certainly have known his commander well and the latter probably relied upon him. The *cornicularius* of the *Cohors XX Palmyrenorum* (in P. Dura 100 and 101) was named Alexandrus Antoninus and he had been recruited in 203 CE. Therefore at the date P. Dura 101 was compiled he had had sixteen years military experience.

The duties of the *cornicularius* look similar in many aspects to those of his deputy in the larger *officia*, the *actuarius*, particularly those entailing responsibility for the regiment's supplies of which this latter man seems also to have had a full knowledge. His precisely differentiated duties are hard to pin down (NP, p.93; RE: 1894, p.301; Stauner: 2004, pp.129-131). Both the *cornicularius* and the *actuarius* are also known in the civil administration and in both civilian and in military spheres their clerical duties were no doubt similar. In the military, post-Septimius Severus, *actuarii* are attested as high-ranking stores and provisions

administrators. They may also have been speed or shorthand writers. In the civilian and the private spheres they are occasionally cited as accountants.

An *actuarius '[…]eus Mocimi n(umeri/orum)'* left a *dipinto* in W12.[92] It is difficult to restore the sense of the abbreviation '*n*'(...) in his title. Gilliam suggests that the restoration '*numeri*' would refer to the unit rosters which may have had this name and would mean he had responsibility for their production (Gilliam: 1957).[93] Alternatively, the epithet '*numeri*' may indicate that Mocimus was *actuarius* for the cohort and this is probably the more likely reading (TEAD-V, p.228, Note 15; Rostovtzeff: 1934, p.360; Stauner: 2004, p.129).[94] In this case the '*actuarius*' probably had his name from his association with the word '*acta*' which seems, as it is used by Vegetius, to refer to records in a quite general sense and points to the man's professional responsibility for the unit's paperwork in general (RMR, p.2; Veg, *de Rei Mil.* 2.19).

Indeed, the seniority of the *actuarius* within his unit suggests that he was probably concerned with such documents as afforded a detailed, complete overview of his unit and that he supervised the production and assembly of all the other documents needed for their compilation. He may well also have been responsible for overseeing the production of the annual '*pridianum*', the unit's annual report sent to headquarters (Stauner: 2004, p. 96 ff.; 111 ff.).

Like the *cornicularius*, the *actuarius* held a post of trust and responsibility. He wrote receipts for tax furnished by *susceptores* and paid it to the soldiers. He might also have assisted the men themselves with their financial interests and affairs (Stauner: 2004, p.130 & Note 427).

---

[92] It is unlikely that the variant spellings, *actarius/actuarius*, indicate a difference in post or in duties.
[93] This *dipinto* receives attention in Section 11 below.
[94] Speidel cites an, '*Amandianus librarius numeri*' (Speidel: 1984b) and another '*librarius*' with this title occurs in Stauner's QNr. 353 (2004, p.392).

Early on in the army's history *actuarii* were elected by the troops, and they seem always to have had a powerful influence on the men and are known, on occasions, to have acted as mouthpiece for them and to have stood up for their rights. In the Late Empire at least, *actuarii* had sometimes to be restricted on this account (*Cod. Theod.* VIII.1.35, XI.1.125; *Cod. Just.* XII. 49.9, cited Kubitschek: 1894, p.301).

Two other *actuarii*, besides Mocimus already mentioned, are known from Dura-Europos. One of these, Ulpius Severus, is named in the rosters P. Dura 100 and 101. He, like his *cornicularius*, had been enlisted in 203 CE and like him his relative seniority probably reflects the length of his service. A painted portrait with a short legend (in Greek) names another, *Heliodorus*, a young man wearing red with dark eyes and dark hair (Stauner: 2004, p.417, QNr.399). It was found in the 'House of the Roman Scribes' which is outside the known writing complex. Neither its date nor the man's unit is known.

While the *actuarius* scrutinises and works with the unit's accounts, the *librarii*¸ his juniors and assistants sometimes at least, according to Vegetius, copy them up. This is supported by an inscription that refers to a '*librarius a rationibus*' (Veg, *de Rei Mil.* II.7; Stauner: 2004, QNr.351 with further references).[95] In the civil sphere, a *librarius* is often a private secretary, or, as his title indicates, a copyist (or seller) of books (Bilabel: 1926, pp.138-9; Stauner: 2004, pp.132-8).[96] In the military, copying (and collation) activities may well be the main task of the *librarius*. Army *librarii* were probably often personal secretaries to officers, but they also seem to work as general copyists and document writers in all the unit *officia*.

---

[95] '*Librarius... quod in libros referunt rationes ad milites pertinentes*' (Veg, *de Re Mil.* II.7). With reference to figurework and book-keeping, it is of interest that a '*discens mensorem*' is posted at the *signa* in P. Dura 89.3, but this soldier was perhaps some kind of trainee accountant.

[96] Commonly so referred to in Cicero, eg. *ad Att*. IV.4.1b.1.

Uncertainty over the scope of his duties in the military is not helped by the circumstance that the term '*librarius*' is often used as a non-specific cover term for a general clerk. The ambiguity probably indicates that he is a multifunctional, trained writer who has, amongst the clerks, the widest spread of activities. He is also, very probably and importantly, an educator of new clerks (see 6.2 below). In smaller units *librarii* may have had a greater spread of duties and more responsibility, while in larger units their work was perhaps more specialised. There are clearly differentiated sub-types of *librarii* attached to various offices but the title refers generally to a post with its own specified duties, the extent and responsibility of which were variable and dependent on the prevailing circumstances.

Some *librarii* at smaller bases seem to have had responsibility for documents concerning personnel, logistics and accounts. At Bu Njem, for example, the administrative knowledge of the *librarius* allowed him to hold a leadership position in which he even had 'police powers' (Marichal, 1992, p. 56. cited Stauner: 2004, p.86, pp. 270-1, QNr. 87).[97] It is also important to mention that clerical soldiers were mobile and would accompany units and vexillations on campaign, missions or manoeuvres (Stauner: 2004, QNr. 378 and p.27, QNr. 687 and p.94). While *librarii* may have had a promotion in status in approximately the late second century (Watson: 1965, p.54), generally there is evidence of hierarchical differences between *librarii* working at different levels in the army, those working for more senior officers ranking higher than those attached lower down.

Speidel for example, draws attention to P.Mich VIII, 466.26-30, a letter (in Greek dated 107 CE) written by a legionary Julius Apollinarius (Speidel, 1984b., p.212; Stauner: 2004,

---

[97] And see Stauner's comments on (Stauner: 2004, pp.270-1, QNr. 87) with further references.

QNr.420, with further references).[98] Apollinarius had applied to the *consularis* for the post of *librarius* but there was no vacancy here, and instead, Apollinarius became '*librarius* of the legion with hope of advancement'. The implication of the text as it continues is that if Apollinarius had later transferred to the office of the *consularis* this would have been a promotion. Presumably he would, at least initially, have continued there in a clerical post. Other sub-types of *librarii* are known from the sources although no evidence of any distinctions between them survives from Dura. Stauner's indices list those he has found. A cohort *librarius* was posted to the *signa* watch (P. Dura 82.i.18, dated 194 CE), and mention of such a soldier in the *Legio IV Scythica* referred to in a governor's letter has already been made (P.Dura 64.B.iii.8).

In the cohort rosters, between two and five *librarii* are listed for each century. Given that the rosters are extremely fragmentary there may have been more (particularly in the units with apparently only two such men) but each cohort century (or *turma*) seems to have at least one, and usually more than two. This figure can be compared with that on the *dipinto* found in the *principia* at Dura-Europos which lists four *adiutores* under the leadership of Julius Domninus *librarius*, all soldiers in the *Leg. IV Scythica* (TEAD-V, p.224, Pl. XXVII,1).[99] Exactly what type of office Domninus was in charge of and the precise nature of its service to the legionary vexillation is not known.

It is likely that each century had its own small administrative department under the leadership of the centurion, all of whom would be ultimately under the command of the legionary or cohort commander. This is suggested by the arrangement of the (fragmentary) rosters P. Dura 100 and 101 which list the cohort troops by century (or *turma*). Within each century in the

---

[98]Advanced Papyrological Information System (APIS) [online, accessed January 21st 2010], http://wwwapp.cc.columbia.edu/ldpd/app/apis/item?mode=item&key=michigan.apis.2586.
[99] See further in 11 below.

rosters, several men are prefixed '*officio*' which indicates that these soldiers are clerks (RMR, p.16).[100]

The ratio of the clerical soldiers in general to the non-clerical troops is not certain. Breeze comments, on the evidence of the enlistment dates, that all but one of the presumed clerks in the cohort *'officium'* had over fourteen years service, and as a whole, all had between three and twenty-three years service and only one had been appointed in his year of enlistment (P. Dura 101, vi, 8; Breeze: 1974, p.285). In total thirty-one general clerks are listed in P. Dura 100 and eighteen in P. Dura 101. Eleven who occur in P. Dura 100 are still in the *officium* in P. Dura 101 compiled *circa* three years later.[101]

The total number of clerks at Dura thus calculated is comparable with those of the *tabularium principis* of the *Legio III Augusta* at Lambaesis for whom a collegial inscription survives (Stauner: 2004, p.467, QNr. 499, dated c.198-211 CE). This inscription shows that the Lambaesis office was headed by a *cornicularius* and a deputy *actuarius* and the rest of the staff were *librarii* or *exacti* (with one possibly a *cerarius*). Here, a total of forty-five clerks, including their leaders, belonged to the legionary office (Philonenko: 1928). The Dura papyri similarly suggest in their quantity and detail, that there would be sufficient clerical and accounting work to occupy a considerable number of men, at least when they were not carrying out other duties.

The surviving collegial inscriptions situate the clerical soldiers in their military context, for it is in their roles in the prestige-laden context of the army that they hope to be remembered. Stauner thinks clerical soldiers, being literate, had a rare skill and that they would have capitalised on this and charged a fee to write letters for their colleagues, but this is nowhere

---

[100] In P. Dura 67, v. 15 and ix. 14 the phrase *'ex off'* occurs before the soldiers' names.
[101] P. Dura 100: xxxv, 6; xxxix, 5; P Dura 101: xxxv, 10; xxxix, 11.

recorded (Stauner: 2004, p.195). However, it is clear that as literate soldiers, clerks were regarded as men of trust, perhaps in private as well as institutional circumstances. Indeed the evidence suggests overall that they enjoyed and claimed for themselves a certain special status (Van Nijf: 1997). At least, their literacy and special privileges seem sometimes to have evoked a wry sense of envy from their lesser privileged fellow soldiers. This is the gist of two literary references, both c. 400 CE. Both Augustine and Ammianus Marcellinus suggest that, in soldier-speak, those who were educated and literate were referred to, somewhat derisively, as '*litteriones*' (Augustine, *Ep.* 118, 26; Ammianus, *Hist.* XVII, 11, 1).[102]

---

[102] *'Aus dem 'Gelehrten' wird in der Soldatensprache der 'Federheld', der 'Litterio'.* Heraeus, W. (1902), **Archiv für Lateinische Lexikographie und Grammatik**, 12, 273, cited Stoll (2001). Also Du Cange, Glossarium..

6.2   THE WRITING TEACHERS

There were good incentives, both pre-enlistment and during service, for soldiers to join the clerical departments. Among other things, doing so might help promotion prospects, for many soldiers who started army life in the administration progressed impressively through the ranks. Stauner presents a synthesis of data in tabular form drawn from the works of earlier scholars and from inscriptional evidence showing clerical soldiers' careers, in which he demonstrates, *inter alia*, that significant numbers of soldiers trained in general administration and obviously to a degree literate, rose to the rank of centurion. The numbers show, for Stauner, the

> 'exceptional impact of administrative knowledge on promotion prospects' (Stauner: 2004, pp.193-201).[103]

This is not to be doubted. Consider, for example, Aelius Verecundinus, a soldier in the *Legio IV Scythica* whose funerary inscription, found in Apamea had been put up in 217-218 (Balty & Van Rengen: 1993, pp. 28-29, Pl.7; Stauner: 2004, p.411, QNr.389). The stone bears a relief carving of a soldier holding a small scroll in his left hand and in his right, the vine-staff symbol of his centurion rank. He was thirty six years old when he died and having started his career as *exactus* (a junior grade of clerk) was promoted first to *librarius* and upwards from there, later holding several posts in, broadly speaking, military intelligence.[104] For him, writing up and sending surveillance reports back to base would have been a routine task. Likewise, Breeze gives details of the careers of several clerical soldiers of the *Cohors II Palmyrenorum* who progressed through the ranks (Breeze: 1974, p.282).

---

[103] '*daß nicht wenige dieser Verwaltungsexperten in die für die Funktionsfähigkeit des Heeres wohl wichtigste Offiziersgruppe der Zenturionen aufstiegen – ein deutliches Indiz für die herausragende und karrierefördernde Bedeutung administrativer Fachkenntnisse*'.

[104] '*frum(entarius), speculator, evocatus (centurio) et (centurio) frum(entarius)*'.

Any soldier gaining promotion would raise his status amongst his fellow men. Another enticement to join the clerical departments would have been the resulting increase in pay, for in addition to pay increases received through promotion, at least some clerks were awarded or had *immunes* status. All posts classified *immunes* received a fifty percent increase in salary. They were also exempt from heavier routine duties (Breeze: 1974, p.285). Stauner cites seven inscriptions recording '*immunes librarii*' (QNrs. 105, 196, 253, 254, 293, 340 and 343). Julius Apollinarius, the *librarius legionis* mentioned in 6.1, must be another. He mentions specifically in a further letter, that he was allowed to stay inside attending to his correspondence while his colleagues were out in the desert breaking rocks (P. Mich. VIII. 465, 14-17; Watson: 1965, p.49; Stauner: 2004, p.17). The *immunes* exemption was presumably given to such soldiers on the basis that they had other, more important work to get on with than mundane, unskilled tasks.

Tarruntenus Paternus (writing in the second century) gives a long list of some forty-two military posts that had *immunes* status. The list includes four types of *librarii*: '*librarii horreorum*' (granary clerks), '*librarii depositorum*' (clerks in charge of savings)*, '*librarii caducorum*' (clerks who are responsible for monies left without heirs)*, '*librarii qui docere possint'* (clerks who can/could/might teach), as well as '*adiutores corniculariorum*' (assistants to the *corniculariii*) who probably also held clerical posts (Dig. 50.6.7)'.[105] The text shows that special privileges were awarded to several clerical soldiers and they additionally reveal that *librarii* sometimes worked as teachers. Confirmation that *librarii* often worked specifically as teachers of writing is also to be found in all the standard reference literature (Bilabel: 1926, pp.138-9; Stauner: 2004, pp.132-8). In the Diocletian

---

[105] '*quibusdam aliquam vacationem munerum graviorum condicio tribuit... librarii quoque qui docere possint, et horreorum librarii, et librarii depositorum, et librarii caducorum, et adiutores corniculariorum... et polliones. Hi igitur omnes inter immunes habentur'*.

Note also that the '*pollio'* is listed among the *immunes* (see 5.3 above)*.

Edict they are recorded as teachers earning fifty *denarii* monthly per pupil (Graser: 1940, pp.344-5, VII, 69).[106] This was work in the civilian sphere but in the military their duties would no doubt have been similar. Henceforward I will assume that the military *librarii*, at least sometimes, were responsible, specifically, for the writing teaching, that took place in the clerical *officia*. The logical interpretation of Paternus' phrase, '*librarii qui docere possint*', is that the teaching duty of those *librarii* who taught, sufficiently important to grant their exemption from heavy duties, was to attend to the transfer of their own writing and administrative skills to their junior colleagues. The pen skills of trainee and junior clerks, it suggests, were improved under the guidance of the *librarii*, who taught them how to form the traditional styles and how to set up and present the standard military documents.

However, difficulties understanding Paternus's phrase have arisen from the impossibility of knowing with certainty from it the number of *librarii* who took on the teaching posts. Stauner expends considerable time trying to elucidate the precise significance of the subjunctive verb form *'possint'* (Stauner: 2004, pp.134-6). This task is surely doomed, but his investigation seeks to decide whether all *librarii* taught, or just certain amongst them, and further, how many *librarii* actually had *immunes* status. These are valid questions. Reviewing the interpretations given in earlier literature, Stauner cites Harris (1989, p.218), for example, who interprets Paternus to indicate a division in the *immunes librarii* between those who taught, and the three other kinds who could not or did not. The consensus of opinion generally joins Harris in understanding Paternus to refer to four distinct types of *librarii*. Watson, however, who treats this subject in some detail, assumes but does not support his assumption, that all 'qualified' *librarii* hold *immunes* status although this is not always expressed in their titles. Only their pupils, the trainee clerks, do not (Watson: 1965, p.47, 55). For Watson, Paternus'

---

[106] *'librario sibe antiquario in singulis discipulis menstruos'*.

four distinct titles of *librarii* in fact stand for all types of *librarii*. He does not comment on which *librarii* might have undertaken the teaching.

But Stauner asks, if all 'qualified' *librarii* were *immunes*, why did Paternus bother to differentiate them at all (Stauner: 2004, p.135)? Drawing attention to the use of '*et'* which includes '*librarii horreorum, depositorum'* and '*caducorum*' under the scope of the verbal construction '*docere possint'*, he maintains, as did Watson, that <u>all</u> *librarii* were *immunes*, and additionally, that all of them taught (Stauner: 2004, p.136 - my emphasis). For him, Paternus's list is unsystematic, not exhaustive and really just an attempt at a collective description. The subjunctive in the description of the *librarii* expresses their common special ability.

Personally, I would doubt that all *librarii* were able or allowed to teach and I think it a greater likelihood that the 'better qualified' amongst the *librarii*, (passing over the difficulty interpreting this phrase) rather than all of them, gave lessons and were *immunes* on that basis and that these are the men to whom Paternus refers in his phrase. Experience and long years of know-how are useful in teaching, and the army's evidently careful attention to paperwork belies an interpretation that all clerks, even newly-qualified ones, were equally proficient in the procedures. There were surely many other subdivisions amongst *librarii* not mentioned by Paternus and the holders of these posts would presumably not have been *immunes* (other examples in Davies: 1974; Speidel: 1984b). All the four types of *librarii* specifically listed, however, must have been regarded as particularly important. No distinctions among *librarii* are recorded from Dura so in a sense the issue is a red herring here.

There is other evidence that military *librarii* taught and that is the fact that they had pupils. Domaszewski cites '*discentes librarium*' in the *officium* of a legionary prefect (von

Domaszewski (Dobson): 1967, pp.40, 48; Stauner: 2004, p.334, QNr.223 = CIL III 3565).
The unnamed *'immunes et discent(es)'*, as inscribed on a gravestone for a *cornicularius*
(undated) found in lower Pannonia, had been delegated his heirs and took on the
responsibility of putting up the stone.[107]

More tenuously, a collegiate decree from Lambaesis which lists among the dedications of
immunes, *'discentes capsario[rum]'*, and in which these men follow the *librarius* in the
hierarchical listing of soldiers (Stauner: 2004, p.451, QNr 466 = CIL VIII 2553) suggests that
both are to be understood in the same context. This is consistent with Liebenam's
interpretation (cited by Watson) of the *'discentes capsario[rum]'* as trainee clerks, which he
posits on the association of the title with the *'capsa'* (or scroll-holder) and because of their
frequent attestation in contexts in which clerical soldiers are also present (RE VI 1649, cited
Watson: 1965, p.47, Note 9).[108] This claim needs further investigation but seems, on the face
of it, plausible. Again, unfortunately there are no attestations of the *discentes* of the *librarii* in
the Dura evidence.

Clerical training needed to cover a range of military scripts. Soldiers who were to be clerks
would have needed and received

> 'a particular training teaching them the different styles of writing and the usual
> formulae' (Marichal: 1992, p.45; also Stauner: 2004, p.208).[109]

---

[107] The history of their association is not traced but these are perhaps *librarii* in training under the *cornicularius*.
This jars with Tarrentenus Paternus's association of the *librarii*, rather than the *cornicularii*, with teaching, but it
could of course mean that the *librarii* had once trained under the *cornicularius*, perhaps when he himself had
been *librarius*, or as part of a process by which a *cornicularius* would train up his junior (or more senior) staff to
equip them for their own eventual promotion to *cornicularius*.
[108] Contra ILS 9182 (= CIL XIII 11979) as interpreted by Diz. Epig. IV 608.
[109] *'une formation particulière leur apprenant les differents styles d'écriture et le formulaire usuel'*.

The preservation of the standard script and document styles, to judge by the appearance of the Dura documents, was a matter of pride and respect in the *officium* of the Palmyrene cohort. The constant and direct contact with other soldiers both from Rome and from the provincial administration, together with the fact that many soldiers were stationed far away from their homelands, meant that the script used in communications in writing functioned as a unifying feature of army group identity. To maintain this, I suggest, that there must have been underlying rules for the construction and form of scripts, since otherwise the attested unity in script across the army (see Section 7 below) could not have been produced and maintained.

Grasby's recent confirmation of a standard grid template, used consistently (with slight variations) in Roman good quality monumental inscriptions, carries the further implication that if formal epigraphic letters were preserved by transmission empire-wide of standard designs and design techniques, the same may also have been possible for good quality, recognisable Roman script-styles (work summarised and revised most recently in Grasby: 2009). Teaching *librarii* would have been instrumental in sustaining this so how they did they go about training up new members of the *officium*? While their training is the key to what the clerical soldiers did, evidence is scarce in this regard.

White, in the short section of his book that looks at the transmission of technological knowledge in the ancient world, emphasises the importance of the written manual, which, in his view, represents for many crafts a body of technical information that could be preserved and handed down. He argues against what he clearly regards as a commonly-held notion, the idea that

'all crafts ... masters of traditional techniques passed on within a closed circle of practitioners, and nothing was committed to writing',

and insists that the notion is, '*a priori*' hard to accept' (White: 1984, p.12; see also Cagnat: 1889).

Burford, in her 1972 work on craftsmen and artisans, stressed the importance in the maintenance of skills and techniques of the passing down of ideas, either from father to son or from master to apprentice (p.93; also Westerman: 1914; Frasca: 1994). But White argues that recent work suggests text-books and manuals existed in the ancient world for many practical subjects. Therefore Roman soldiers were always able to draw on a collected body of expert knowledge that had been gathered, preserved in manuals and in army training routines and transmitted to the men throughout centuries of military development (White: 1984, p.11). For him, the army's skilled workers, craftsmen and artisans were heirs to this knowledge and subsumed its principles into their own working techniques. The implication here, had he mentioned clerks, would have been that they essentially learned their craft by copying letters from a copybook.

Since methods of writing used today by traditional artisans - calligraphers, signwriters etc. – remains essentially faithful to Roman techniques, an analogy from the modern world is permissible. Peter Dormer, an art writer and critic, undertook for his PhD thesis at the Royal College of Art later published in book form, an empirical investigation into the nature of skill and how it is learned, whereby he took on short-term apprenticeships with various expert craftsmen (1994). One of these was a professional modern calligrapher; another was a painter.

Dormer's experience was instructive. Working under each craftsman he observed and maintained as a result that the conscientious expert makes sure the apprentice learns to work in the same way as him/herself. The approach relies heavily on the use on the part of the

pupil of mimicry and imitation, and the teacher will insist that this is so. Dependence on imitation as a facilitator of the transference of their skill is insisted on by instructors of crafts, Dormer writes, because 'craft-knowledge' resists being described neatly in words. It is less knowledge than a series of techniques.

> 'Writing about an action, talking about an action, and reflecting upon the nature of an action are not the same thing as the action itself nor do they provide much insight into how it feels to act, and how it feels to know for oneself how to act' (Dormer: 1994, p.11).

Here he draws an analogy with learning to ride a bicycle: a widely-held technical skill that intuitively would not be well-learned from a manual (Dormer: 1994, p.20).

Similarly, Gwen Dornan, a handwriting practitioner and primary school teacher of handwriting for over forty years, made the remark at a presentation recently that

> '[a] handwriting scheme will no more teach students how to write than a reading scheme will teach them to read'.[110]

Indeed we probably all know from experience that the skilled teacher is an active and vital participant in a collaborative process in which mimicry, adherence to a given method and guided repetition are important. This is particularly true, it can logically be maintained, in the teaching of manual skills.

Nonetheless, copybooks have a role in the writing classroom. They have been in print since the fifteenth century and have always been found useful for students of writing. Copious writing primers and copybooks are available for the modern student. Gwen Dornan herself

---

[110] Talk given to the South London Lettering Association, June 2009.

uses copybooks and written exemplars in her writing classroom. Her point is of course that a copybook on its own is insufficient and ideally there should be a combination of both teacher and book. However, if the book is lacking, the process does not fail. The reverse case is less likely to be true.

6.3   PENS AND PAPYRUS

Here, and in 6.4 following, I discuss and describe the physical context in which the Dura scribes may have worked. Consideration of the writing materials that the clerks used is important for, in combination with all the other material circumstances of the writing act, these affect and accordingly modify the form and nature of the writing itself. My investigation is necessarily limited by the restrictions of the surviving evidence but a certain amount of significant information can be established, or at least inferred.

a.   Pen and Ink

The writing pen used by the Dura scribes was almost certainly a reed pen, the '*calamus*' (Plate 9). The word '*calamus*' came into Latin from Greek. An alternative, '*canna*', occurs but is less common. Many reed varieties exist and most could also have been used for writing, but the species best suited to writing on papyrus is the *phragmatis communis*, a plant that grows wild on heathland in many parts of the world and especially near water. Feather quills could have been used, but a partnership of reed pen and papyrus writing surface is more likely. A quill has a sharper edge to the nib and is more likely to catch in the fibrous surface of papyrus as it moves, particularly in upstrokes in rapid writing. It is usually thought that the Romans did not write with quills, and the earliest source for their use is from the seventh century (Isidore, *Etym*. VI.14, cited Feugère & Božič: 2004, p.37). It is unlikely, however, that quill writing could be distinguished in its appearance from writing with a reed so the true case will perhaps never be known.[111]

The use of a reed as a writing instrument extends far back into history particularly in the East, but they are rarely found in excavations since they do not survive well. Feugère, in his

---

[111] Quills had early uses but writing was perhaps not one: Kenyon describes some early Egyptian papyrus rolls he had seen 'which had quills attached to one end, to serve as rollers' (Kenyon: 1951 (2nd Edition), p.61).

comprehensive discussion of writing tools, cites only three known examples, and strangely none from a Mediterranean climate (Feugère & Božič: 2004, p.37; also Bilkei: 1980).[112] Pens in iron, bronze and other materials are also known from the Roman era (Artmann: 2000; Božič: 2001a; Birley, R.: 2002). In eastern Mediterranean regions finding reeds would not have been a problem. Indeed they probably flourished on the fertile banks of the Euphrates (Mediavilla: 1996, p.40).

Pliny lists several uses for the reed, including roofing, but has the following to say about it as used for writing:

> 'Reeds are employed, too, for writing upon papyrus, those of Egypt more particularly, which have a close affinity to the papyrus. The most esteemed, however, are the reeds of Cnidos and those which grow in Asia, on the margin of the Anaitic Lake there.[113] The reed of our country [Italy] is naturally of a more fungous nature, being formed of a spongy cartilage which is hollow within and covered by a thin, dry, woody coat. It easily breaks into splinters which are remarkably sharp at the edge.
>
> In other respects, it is of a thin, graceful shape, articulated with joints, and tapering gradually towards the top, which ends in a thick, hairy tuft' (*Nat. Hist.* XVI.64.157-8).[114]

In the opinion of Martial, the Roman poet, reeds from Memphis in Egypt are the best (*Ep.*14.38, cited Head & Warren: 1997, p.466, Note 7). Reeds are known in use early there

---

[112] However, the British Museum have some examples among their collection (one of which is illustrated in Gaur: 1992, p.52, Fig 31).

[113] Both sites mentioned here are in modern day Turkey.

[114] *chartisque serviunt calami, Aegyptii maxime cognatione quadam papyri. probatiores tamen Cnidii et qui in Asia circa Anaeticum lacum nascuntur. nostratibus fungosior subest natura, cartilagine bibula, quae cavo corpore intus, superne tenui inarescit ligno, fissilis, praeacuta semper acie.*
geniculata cetero gracilitas nodisque distincta leni fastigio tenuatur in cacumina, crassiore paniculae coma, neque hac supervacua. aut enim pro pluma strata cauponarum replet aut, ubi lignosiore induruit callo.

and were probably adopted in preference to the earlier rush pen, customarily used for Egyptian Hieratic, under the influence of the Greeks and used consistently thereafter by both Greeks and Romans (Tait: 1988; Menci: 2003). The plants were harvested optimally in the summer months for their canes and prepared to produce pens by cutting and trimming. For a pen, a good hard reed should be chosen, about 20 cm. in length, and with barrel-width approximately that of a modern pencil. For clean cutting, a good, sharp knife is necessary.

The Romans called a pen-knife a '*scalprum librarium*' (Wunsch: 1909, pp.2098-100). Feugère describes these in some detail (Feugère & Božič: 2004, pp.37–9, Fig.33 and with further references). Several examples are also shown in (Božič: 2001c). Made of iron or of more expensive materials, they are generally between 10–17 cm. in length, and have a handle and a narrow blade that tapers obliquely along one edge towards the point. The back edge often curves gently. The curved blade is today appreciated as helpful for the scooping cuts made in shaping the nib (Jackson: 1985, p.20; Božič: 2001c). Feugère points out, reasonably, that such knives will often have been overlooked in excavations and many so-called 'razors' have probably been misidentified.

The cutting process described below, Edward Johnston's, is no doubt very similar to the ancient way and is still used today by modern scribes (Johnston: 1977, pp.18-19; cf. Jackson: 1985). Firstly, an oblique cut is made at one end of the cane (Figure 1).
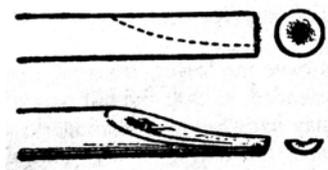
Figure 1.: Cutting a Reed: The First Cut
(Johnston: 1977, p.18, Fig 17)

and the soft pith inside removed (Figure 2).
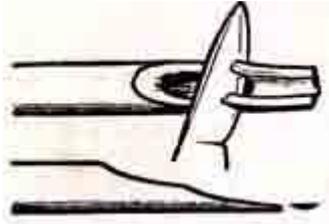
Figure 2: Cutting a Reed: Removing the Pith
(Johnston: 1977, p.18, Fig 18)

The aim here is to remove the concavity of the underside, and the degree to which this is

necessary depends on the qualities of the particular reed.

Next, the reed is turned over, the tip cut off at right angles to the shaft and a short
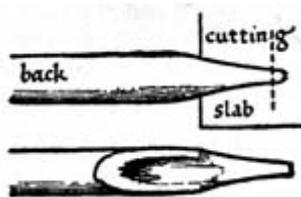
Figure 3: Cutting a Reed:
Fashioning the Nib
(Johnston: 1977, p.18, Fig 19)
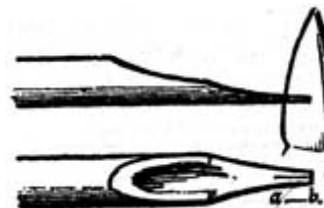
Figure 4: Cutting a Reed:
and Splitting the Nib (Johnston:
1977, p.19, Fig 20)

longitudinal slit made in the centre of the tip (Figures 3 and 4). The slit is then lengthened

with a blunter tool, the aim being to increase it slightly and naturally along the grain of the

material. The split helps holds the ink and enables its control, its capillary function allowing

it to flow freely from the pen yet not flood in pools on the surface (Mediavilla: 1996, p.40).

The optimum split-length is determined by the properties of the particular reed. Too long a

split will cause splaying of the nib once in use, but too short will inhibit its flexibility against

the writing surface.

The hard work is now done. The final trimming of the nib that then follows depends on the preferences of the scribe and this likewise on the purpose for which the pen is to be used (Jackson: 1985, p.33). A scribe may now shave the nib to a point or leave a flat chisel-edge depending on the script that he wants to produce. The Dura papyri are generally written with a fine, somewhat sharpened pen which is used at great speed. Book-scribes writing formal hands, however, will leave the nib broad at the tip and either perpendicular or oblique (left or right) to the barrel (Marichal: 1956, p.24, Note 2).

By an experienced pen-cutter the whole cutting process can be done in approximately one minute. The reed is gradually blunted in use and will need trimming or re-sharpening periodically, but lasts for a good period before this is needed. How often re-trimming is actually necessary depends on many factors, and particularly on both the quality of writing required in the end product and the properties of the particular reed. To write the Dura papyri, scribes could perhaps write for at least a day with a reed before attending to it, but it is difficult to know. With use, in time and through re-trimming, a reed gradually shortens. Mediavilla stresses that a reed should be 'systematically cleaned' after use (Mediavilla: 1996, p.40), but some scribes believe that a slight residue left on the nib helps to mould it more precisely to the needs of the writing.

In summary, reeds would have been very low cost, easily available and the scribe could prepare and maintain them himself. The Dura clerks would have known how to tailor their pens but in the army this could have been a task trainee scribes did for the senior writers. Slaves might also have been taught to prepare and maintain pens for the *officium*.

To better store ink in the pen and reduce the need to dip, modern Western scribes often make what they call a 'reservoir', placing it inside the barrel of the pen against the back of the

nib.[115] The amount of ink on the nib will affect the quality of the writing, and if too much, can blot on the surface. Jackson stresses that to allow a writer to develop the flourishes and spontaneous details his script demands, his pen must

> '... be tuned and charged with the right type and amount of 'fuel'' (Jackson: 1985, p.34).

The quality of ink used is also important because it too affects and conditions the appearance of the writing. A good ink should

> '...flow freely, be permanent and be even in colour' (Fisher: 1985, p.39).

It should also be slightly gritty, rather than sticky, so that it holds in the reed without clinging to it. In hot weather it can get quite thick and need thinning.

The Dura scribes almost certainly used a carbon black ink, '*atramentum*', since this was used all over the Greco-Roman world. Derived from incomplete combustion of oils, carbon black mixed with a gum binder is well-recognised as a fixative that helps preserve its blackness (Mitchell: 1937, p.37). Variations in the gum used will affect an ink's permanence but it can remain dark on the page over centuries. A sample papyrus from Herculaneum in southern Italy, dated to the pre-Christian era, the work of a Greco-Roman scribe, was recently submitted to chemical analyses and confirmed to be written in carbon-based ink. The researchers on the project think that the finding will hold for the whole corpus (Störmer et al.: 1990).

---

[115] Islamic calligraphers use a small piece of sponge or some string in their inkwells and simply wipe the excess ink from the back of the nib against it. They have to dip the pen frequently when writing.

Carbon ink manufacture is known in earliest antiquity and was perhaps first perfected by the

Chinese c.1200 BCE, although this cannot be verified as certain. It is still commonly made in

China today where it is sold in dry ink-sticks varying in quality and price and in the purpose

for which each is used. The consistency and glister of the best quality of these inks is sought

after and enjoyed by both calligraphers and artists. The ink-making method used in China,

today as in far earlier times, is comparable to that described by Vitruvius that follows,

paraphrased from his '*De Architectura*' (7.10.1-4).[116] He describes a large, vaulted room,

purpose-constructed with its walls faced in smooth marble. Inside is a small furnace which

burns resin, usually pitch-pine and waste lamp oil and emits soot through outlets channelled

into the vault. The soot, which clings around the vaulting and walls, is then collected and

compounded with gum ('*glutinum*') perhaps in an approximate ratio of three soot to one gum

(Dioscorides, *de Mat. Med.* V, 183).

The mixture is dried and (not stated by Vitruvius but) probably diluted in water at the point of

use, its particular consistency determined by the flow from the pen.[117] Some carbon inks

were perhaps water soluble. The *persona* in an epigram by Martial, when sending his work to

his patron sends a sponge with it so that offending parts can be wiped out (Martial 4.10, cited

Störmer et al.: 1990). Other carbon inks cannot be treated in this way.[118]

The process as Vitruvius gives it is clearly a large-scale, industrial operation. But I was told

by a Moroccan who attended a traditional Koranic school in Rabat in his 1960's childhood

that the pupils made their own ink with which they wrote on wooden boards. To do so they

---

[116] Pliny (*Nat. Hist.* XXXV.5.25.41-3) describes a similar method.
[117] Cic. *Ad Qu.Fr*. II.14. The entry from Smith, W. (1875), **A Dictionary of Greek and Roman Antiquities**, London: John Murray is online:
http://penelope.uchicago.edu/Thayer/E/Roman/Texts/secondary/SMIGRA*/Atramentum.html.[accessed 12th February 2010].
[118] For sponges, knives and other writing implements see also Head & Warren: 1997, p.468 & Note 12.

burned sheep-wool taken from the area around the animal's anus, and therefore presumably slightly soiled, and diluted the black powder so obtained with water to use as ink. Hassan Massoudy, a calligrapher and maker of his own inks, recounts as 'a miracle' his happy encounter with a particular Moroccan who made Moroccan ink from a traditional recipe purportedly ancient (Massoudy: 2007). To this ink Massoudy can find nothing superior. Its ingredients, similar to those in the previous Moroccan recipe, are sheep wool and ram-horn. As in the formulae of Vitruvius and the Chinese, it is the dried soot residue after carbonisation that is then added to water for use (Massoudy: 2007, p.59).

Inkwells are common finds in excavations. Publication of these is usually in archaeological reports and tends to be random and sporadic. A useful catalogue and summary of Pannonian examples is given in Bilkei (1980). As is clear from his work and as noted by Feugère, excavations have delivered many different models and sizes of inkwell which are made of diverse materials (Feugère & Božič: 2004, p.35). Some were found still containing dried ink residue. Common to all is a ledge around the top of a usually cylindrical container. This serves for wiping the pen of excess ink after dipping and pens can be rested across it. The cylindrical internal face of the container is often concave, narrowing towards the bottom to help keep the ink moist. Some later metal models have lids, sometimes attached with a chain.

b.　　Papyrus

The writing surface used by the Dura clerks, papyrus, has been extensively treated in the literature most comprehensively by Lewis (1974: 1989: 1992; and see now Bülow-Jacobsen: 2009, pp. 4-10).[119] '*Cyberus papyrus*' is a freshwater reed, native to Egypt, and in use as a

---

[119] P. Dura 94, and 109-112 of the Dura Latin documents are written on parchment while all the other Latin papyri are on papyrus. Parchment is the usual writing material in the East before the Romans and, in Marichal's opinion, probably substituted the customary papyrus in times of papyrus shortage (ChLA-IX: 1977, p.16).

writing material there since c.3100 BCE (Parkinson & Quirke: 1995, p.9). The derivation of

the word 'papyrus' is unknown but it is perhaps Late Egyptian. Modern European words for

paper are from Greek '*papuros*' (Parkinson & Quirke: 1995, p.11).

Pliny's description of papyrus manufacture into sheets suitable for writing (*Nat. Hist.* XIII,

74-82) is well-known, but details are disputed (Lewis: 1974, pp.35-69: 1989, pp.15-33).[120]

Bülow-Jacobsen gives a critical reading of Pliny's account (2003: pp. 5-7). Broadly

following Pliny, strips cut from the plant are laid side by side to form a layer and a second

layer is laid perpendicular to the first. Both are then beaten together with a mallet and dried to

form a sheet.[121] The plant's natural glutins bond the two layers together.

Then, the sheets are stuck together to form rolls using a flour and water paste, and made up by

pasting the right-hand edge of the roll over the left margin of the new sheet. This makes a

smoother join which does not trouble the scribe's pen. In a well-made roll joins are hardly

visible particularly on the recto side, and Turner observes that in a well-made roll the *kollêsis*,

or join can be hard to spot, especially in photographic reproductions (Turner: 1978, p.15).

Sold in the roll form to avoid sheets fraying at the edges, pieces can be cut off from the roll

according to need. Finer grades of papyrus may also have been polished before use.[122] In the

best grades of the material the surface is whiter, finer, and has a 'dense, even criss-cross

framework' (Lewis: 1989, p.27; Parkinson: 1995, p.19). Such is the material used for

Egyptian literary manuscripts of the Middle Kingdom. Roman examples are sometimes of a

much poorer quality, with 'thick, poorly arranged fibres'.

---

[120] The modern method developed by Hassan Ragab in Cairo is not the precise method used in antiquity.
[121] Cic. *Ad Qu.Fr.* II.14.
[122] A slide show of the process can be seen [online]: http://www.lib.umich.edu/papyrus-collection/how-ancient-papyrus-was-made [Accessed February 12th 2010].

The standard length of an early roll was probably twenty sheets (Lewis: 1974, p.55; Skeat: 1982, p.169). The actual length of the rolls varies according to the width of the sheets used, which is also variable. Papyrus was customarily made in several different standard sizes (Turner: 1978, p.61). Sheet dimensions of the Dura papyri are difficult to ascertain, chiefly because the remains are so fragmentary. Marichal calculates P. Dura 102 to be c. 23 cm. in height and P. Dura 64, c.31 cm. P. Dura 82 indicates a 50 cm. sheet-breadth was possible (ChLA-IX, p.16). It is impossible to form one's own opinion on this point without sight of the original artefacts.

Papyrus is very durable, and well-kept rolls can last millennia and preserve both their substance and their flexibility (Skeat: 1990; Winsbury: 2009, p.186, Note 40).[123] The prepared sheet has a grain, and that treated by scribes as the recto or writing side is the side on which this runs horizontally. The verso is often avoided, particularly in finer documents and books, and may have been thought unfriendly to the pen in its grain. Nonetheless, ancient sources refer to school exercises written on verso sides of used papyrus and several of the Dura papyri, the rosters for example, carry writing on both sides (Turner: 1978, p.9). This may be an economy.

My own enquiries reveal that practised modern scribes have no difficulty writing on the verso side and this suggests the preference for the recto may be largely aesthetic (or conventional). The papyrus used at Dura, according to Robert Marichal, is good quality and Egyptian (ChLA-IX, p.16). A query can be raised about this. The oldest piece of papyrus preserved outside Egypt is a document in Hebrew 750 BCE found near the Dead Sea (Parkinson & Quirke: 1995, p.65). According to Lewis, papyrus was recorded growing in Syria c. 400 BCE and is still found in modern times in the Huleh marshes of the Jordan river. Josephus refers to

---

[123] Witness also the large Egyptian collections in most major museums.

a place called 'Papyron' in the same region (*Antiq*. XIV.2.3, cited Lewis: 1974, p.6, Notes 5 & 6). Pliny mentions the potential of the Euphrates and Tigris regions near Babylon as papyrus growing areas, and papyrus may have been introduced into the area by the Seleucids (*Nat. Hist.* XIII, 73). However, nothing is known for certain after this until the ninth century when it was re-introduced there (Lewis: 1974, p.10).

 If it continued in use in the area, some at least of the papyrus used at Dura may have been local. We know that in general, it was manufactured by large factories, probably privately owned, who harvested it throughout the year (Lewis: 1974, p.108). The mention, in a first century military record from Egypt, of a soldier leaving his camp 'to make papyrus' (as translated by Fink) probably means, in Lewis's view, that he was assigned to guard duty at a nearby private papyrus factory (RMR, p.118, Note 10).[124]

---

[124]'*exit ad chartam comfici[endam]*' (P. Gen. Lat.1.ii.r). Neither <i> is certain, and given the non-standard spelling '*comfici*' and the rest of the word being supplied, the reading is tenuous.

6.4   WRITING POSTURE

Clerks, who as already stated, accompanied soldiers on field expeditions, were based in distant outposts or sent on missions out of the city, needed their writing equipment to be portable and taken with them. A professional military clerk had a selection of writing instruments which he probably, at least sometimes, wore or had about his person. The clerks of the *Cohors XX Palmyrenorum* would have kept their reed pens in a holder (called '*theca calamaria*' in Roman literature). Diocletian's Edict 10.17 (301 CE) lists a '*theca cannarum*' under the leather items, but they would also have been made of other materials, metals for example (Boeselager: 1989, p.235, Note 55).[125]

Boeselager in her study of writing equipment publishes relief illustrations taken from Roman gravestones of soldiers and writers 'wearing' their reeds, four or five, sitting in a pouch in a neat row behind an inkwell fixed at the front (Boeselager: 1989).[126] The pen container tapers slightly towards the bottom and has a rounded end. Some also have a small slot next to the inkwell for a knife. The knife handle protruding next to the top of the inkwell is clearly visible on the gravestone of Q. Aemilius Rufus, a *beneficiarius consularis* (Boeselager: 1989, pp.232–233, N.45, Abb.23=CIL III Suppl. (1902) 12895). In all the depictions, the pen-holder rests below the shoulder on the left breast and the left arm, in the pose adopted, is bent at the elbow and folded across the body across the base of the holder. This holds it but leaves the left arm restricted in movement and seems thus hardly practical.

A theca is clearly depicted on the gravestone of Titus Statilius Aper, dating from the second century, which has a long looped handle perhaps made of rope or twisted leather (Boeselager:

---

[125] As cited in Graser, E. R. (1940) The Edict of Diocletian on Maximum Prices in Frank, T. (Ed.) **An Economic Survey of Ancient Rome V: Rome and Italy of the Empire**. Baltimore: John Hopkins. pp. 305-421.

[126] Suetonius, *Claud.*35; Martial, XIV.19.21. Both these sources differentiate the *theca calamaria* from the *theca graphiaria*, the latter being a stylus-, not a pen-holder. See also Petronius, *Sat.* 102.

1989, pp.232, 235, Note 44, Abb.22).[127] This must be for carrying or hanging up the apparatus, or indeed to put the arm through it allowing the case to be worn around the shoulder with the pen pouch to the front. The scribe could then carry his implements with him and be ready on demand.

The writer in the funerary relief from Maria Saal, Hungary reproduced in Plate 10, his theca clearly in position on his chest, rests his foot upon a box containing scrolls and is writing on his knee (Diez: 1953, p.126, Abb. 3; Boeselager: 1989, p. 230, Note 36, Abb.18). What he is writing on, precisely, cannot be made out, but the scribe in a similar funerary depiction, also from Hungary (St. Martin im Sulmtal) and shown in Plate 11, is perhaps doing the same and he can be seen to be writing on a (probably wooden) codex (Boeselager: 1989, p.230, N.37, Abb.19). In these, as in other illustrations, the writer does not put down his pen-case while writing. He must have dipped his pen - if he is indeed using a pen rather (than a stylus) across his chest - which would seem possible to do, although as Boeselager remarks, may sometimes have caused stains on his clothing.

While military clerks did go out on campaign, when they were back at base they probably worked in their own purpose-dedicated workroom, a 'scriptorium'. While no information has yet been uncovered from Dura that confidently determines the conditions in which the Dura scribes worked, a military Roman '*scriptorium*', so described by Rebuffat (1975, pp.197-204), was discovered in the *principia* at Bu Njem. Rebuffat's photographs of the room are reproduced here in Plate 12.[128]

---

[127] Similarly Boeselager (1989) p.228, Note 32, Abb. 15; p. 231, 235, Note 41, Abb. 21; p. 233, Note 49, Abb. 25.

[128] From top-left clockwise these are Rebuffat, 1971: LX b), LXI d), LX a) and LXI a).

This room is identified as a writing-room because of a large piece of furniture in its centre most obviously interpreted as a desk which has long benches on either side. Here the central sections of the benches are older than the two end pieces in each case.[129] The bench measures 44 cm. from the ground to the seat and with the back it stands 80 cm. high.[130] The 'desk' is a stone plastered block, its top surface shaped so as to rise, in a c.4 cm. slope on either side, to a central apex spine extending along its whole length.[131] It was not, in Rebuffat's opinion, used as a surface for writing on, firstly because at 70 cm. in height (with spine) it is too low; and secondly, the benches extend on either side some way beyond it but must still have been functional when the 'desk' could not be reached (Rebuffat: 1975, p.205 & Fig. 4). Sitting at the end of one of the benches and writing one could not have been able to use the 'desk'.

Both the walls and the benches in the *scriptorium* bore hard-point graffiti, which suggests that the occupants of the room had writing styluses, and therefore perhaps also wax tablets. The soldiers at Bu Njem used *ostraca* rather than papyrus for at least some of their own documents, but they may well have also used papyrus and received papyrus communiqués and letters from senior posts or regional headquarters. The 'desk' would have made a good surface to spread documents upon so as to read from them, Rebuffat hypothesises. In his opinion, a reader could have read, or dictated while others, sitting on the benches, listened and perhaps wrote (Rebuffat: 1975, p.205). Both are possible, as is the likelihood that they might have spread camp-internal documents here too, in order to perform such collation and compilation activities as, we have seen earlier, was a common activity.

---

[129] Apparently added later these sections are slightly less broad.

[130] At the end of the room was a niche in the wall c. 50 cm. from the ground, c.90 cm. long, 20-28 cm. deep and 32 cm. high. It was perhaps used to store documents. A similar niche was also found in W13.

[131] Being damaged at one end, revealed is a large hole, into which must have been fitted the attachment which fixed the sloped desk-top to the previously flat table surface.

In some of Boeselager's plates, as also in those of Diez, several Romans are shown writing on wax, or perhaps sometimes wooden, tablets they hold in the air against the palm of the left hand (Diez: 1953; Boeselager: 1989). The hand obviously gave sufficient support for the back-board of the tablet against it to provide enough resistance to the stylus. Very often also, these writers are standing. Indeed Egyptian scribes are commonly depicted standing writing on something small in their hands, as well as sitting on the floor writing on larger scrolls across their laps.

That ancient scribes did not use writing desks had been long ago noticed by earlier writers, as Metzger notes (see Birt: 1907, p.209). In fact, writing tables or additional supporting surfaces are thought not to have come into widespread use before the fourth century. Metzger thought that when a scribe of the Roman period was making short notes (presumably on tablets or smaller surfaces) he too would stand up to write, while for a longer task he would usually sit

> '...on a stool or bench, supporting the scroll... on his knees, which were sometimes raised the higher by the use of a footstool or *dias* under the scribe's feet' (Metzger: 1968, p.123).

As an illustration, Metzger used representations of scribes at work from the early Medieval West (somewhat later than Dura). All, with one exception, are writing on codices. We know that the Dura clerks wrote on scrolls. Writing on either codex or scroll, the earliest illustration of a scribe working at a table is dated to the fifth century CE (Metzger: 1968). In Metzger's Plate III, an ivory diptych (399–402 CE), the central figure holds a roll in his left hand, unfurled across his lap from left to right, the yet unused part, still rolled on the floor to his

right.[132] In his right hand he holds the pen, and presumably while he writes from left to right, he can gradually re-roll the spool in his left hand. His knees are slightly uneven, for the left leg is extended forwards and the foot angled downwards over the edge of the platform on which he sits.

A '*scriptorium*' at Qumran associated with the Dead Sea Scrolls was initially reported as having amongst its furniture, writing tables and benches. Metzger refuted this, and initially maintained that there were no tables, only benches and footrests (Metzger: 1958-9). He relied for his argument on a model of the Qumran furniture displayed in the Palestine Archaeological Museum.   In 1963, K.W. Clark observed that the plaster shell which represented the true size of the furniture (which had covered the original mud-brick constructions) had been set up on a frame (Clark: 1963). Metzger's earlier measurements of the height of both 'bench' and 'footrest' from the floor were incorrect for he had included the height of the frame in his figure (Clark: 1963, p.63).[133]

Clark, after his own investigations which included making mock-ups of both pieces of furniture, concluded that Metzger's 'bench' and 'footrest' were actually 'bench' and 'table'. But as at Bu Njem, the 'table' was not used as a writing surface. The scribes, Clark thought, sat c. 19 cm. from the floor on a concave ledge c.32.5 cm wide (Metzger's 'footrest'). This raised their knees in front of them at a slope he estimates as roughly 1:3 and which, he says, was

> 'quite suitable for lap-writing, as the leather sheet lies about fourteen inches from the eye' (Clark: 1963, p.70).

---

[132] Unfortunately there is no guarantee that this roll is papyrus rather than parchment. It looks more like skin - quite possible in this period.
[133] The original distance of 'bench' from 'footrest' is not known.

The 'table', the position of which in relation to the 'bench' he considered too uncomfortable to write on, was instead perhaps used for writing equipment, inkwells for example, and/or exemplars. It could also have been a surface for displaying completed or in-progress pieces for reading and/or helping the scribes to collaborate in the working process. Metzger later retracted his earlier theory and accepted Clark's hypothesis (Metzger: 1968, p.137).

It happens that the height of the chair (43 cm.) I am sitting in to write the above is almost exactly that of the 'table' as given by Clark. The table's reported concavity would seem to have allowed either foot to bend back under it to a sufficient extent for comfort. Clark's objection that the brick structure 'table' was not strong enough to take men sitting upon it may be the better argument against Metzger's 'bench' and 'footrest' theory. When approximately testing Clark's preferred posture on the lower ledge the position seemed practical, not uncomfortable and certainly possible to write in, at least for short periods. A good tension in the writing surface held across the lap is quite easily maintained during writing by the natural position of both the right and left arm resting upon the respective legs underneath it. The breadth of the surface can be varied by the distance the knees are apart.

The particular case of Qumran must remain for the moment undecided and, in any case, Qumran is not a good analogy for Dura. The Qumran scribes belong to a different culture and their tradition of religious book-writing is entirely dissimilar to comparable practices elsewhere. It also uses different writing materials, notably parchment rather than papyrus, and different patterns of letters. However, other evidence can be adduced to show that Greco-Roman scribes wrote leaning upon their knees.

Metzger, in his 1968 paper cited a literary Greek papyrus of the third century CE, the colophon of which refers to the

'co-operation of the... right hand, and the knee...' in the writing process (Metzger: 1968, p.125).

This is a theme picked up by Parássoglou in a paper furnished with several similar literary examples and a range of illustrations in further support, thus presenting significant both Greek and Roman evidence showing scribes working on their knees and seated on benches, stools and chairs (Parássoglou: 1979).

A common feature of most is the unevenness between the knees of the man writing. The unevenness has the effect that the section of papyrus on which the scribes write is not horizontal but slightly downward-inclined, usually but not invariably to the right, the left leg being lifted by the footrest. The lower (usually right) leg can be either straighter with foot extended forward, or bent back with the foot on its tip underneath the body (Plate 13). The support of the thigh in the posture, particularly the right thigh, gives resistance and the necessary tension in the writing surface. Parássoglou comments that the slope is conducive to a more comfortable script. Also, on experimentation, I found it easier to write on a roll rather than a sheet of papyrus. The weight of the uncut roll on the floor contributes to the tension of the surface. With practice, the technique could no doubt be mastered.

The posture a scribe adopts will both be affected by and itself affect the particular type of pen-hold used, and the manner of using it. Several of Parássoglou's literary sources cite scribes referring to the 'three fingers' they use for writing; suggesting thereby that the pen is held between three fingers only while the others are resting, or at least not concerned with manipulating the pen. Which three fingers are used is not specified. In early depictions some scribes use pen-holds that suggest engagement of the thumb, index and third finger with the pen, the other two fingers folded back into the palm. Parássoglou makes particular reference

to the well-known Evangelist portraits preserved in several Late Antique/Early Medieval manuscripts (Gildersdale: 2006, p.15).[134]

Rosemary Sassoon, who has studied modern childrens' pen-holds, found that the grip on the pen does not necessarily affect letter-form. She advocates children being given licence to adopt a pen-hold they most naturally fall into and not always that prescribed by the particular instructor (Sassoon: 1993, pp.19–38).[135] Having comprehensively tested the effect of the pen-hold used on the speed of writing she found it an insignificant factor in this respect. Indeed her research seemed to highlight, she thought, the fact that

> '... different body proportions and personal pressures, when allied to the many differences in size, shape and points of ...writing implements provide such a multiplicity of factors that it is better to suggest a variety of pen-holds for experimentation' (Sassoon: 1993, p.35).

In the twentieth century Edward Johnston, who also advocated freedom to the scribe in his particular choice of pen-hold, focused on the touch of the pen on the paper. He stipulated only that the pen should be <u>lightly</u> held and that

> '...the act of writing should draw the edge of the nib into perfect contact with the paper, both the half-nibs touching the surface' (Johnston: 1977, p.30).

More recently however, Mediavilla was more particular, and advocated a particular pen-hold as

---

[134] Also St Mark in the Lindisfarne Gospels, c. 690 CE (Gildersdale: 2006, p.15, Fig. 6).
[135] This book presents a summary of the findings of her PhD Thesis on this subject. See also Sassoon (1990).

'...the more convenient and natural from a physiological point of view' (Mediavilla: 1996, p.26).

He also illustrated various pen-holds as used in earlier eras and found them useful in partially explaining the way scripts have evolved (Mediavilla: 1996, p.25). Most modern calligraphers naturally adjust their hold on the pen depending on both the pen-type used and the script or effect intended. Within that there is also a degree of individuality.

The implied consequence, that pen-hold conditions the form of the script being written, is one echoed by Gildersdale, a practising calligrapher, in a recent article (2006; see also Sassoon: 1990, p.141; Sassoon: 1993, p.19). His contention that Mediaeval scribes (who followed classical traditions) did not touch the writing surface with their writing hands because they commonly learned to write on wax tablets may be true, but alas cannot be fully supported (Gildersdale: 2006, p.15). However, like Mediavilla, he identifies a relationship between the script being written and the pen-hold. The renaissance 'italic' hand, for instance,

'strongly fits with an analysis whereby the top of the <a> is the 'wave' movement of the wrist, the downstroke primarily a finger pivot and the upstroke a springback pivot of the thumb' (Gildersdale: 2006, p.17).

The right pen-hold will facilitate these movements. He also argues that the pen-hold likely to work best is one that allows greatest freedom to the hand in producing the most common strokes. The key factor, he believes, is that the joint pivots most used in the production of the particular script should be unrestricted during the writing. He separates out the pivotal body joints potentially involved in the act of writing. The scripts from Dura predominantly and consistently use an upward (or downward), bottom-left – top-right oblique movement. The pivot likely to be most important in producing this would be Gildersdale's 'pivot from the

elbow: arm held away from body'. Woodworth empirically tested what he called the 'forearm movement' which is similar to that described by Gildersdale, and he found several 'points of superiority' on its side in comparison with finger and whole arm movements. Overall, it was

> 'entirely practicable… freer, easier and less liable to cramp' (Woodworth: 1979: pp. 211, 215-7).

Again, it is likely that the forearm movement is the most useful when writing on the knees.

While it is not possible and probably not important to know with certainty the precise grip on his pen a Dura clerk typically used, we can guess that the larger movements came chiefly from his wrist and lower arm, with smaller moulding movements of the fingers, and that they were fast-moving and light on the surface. The slight slope of the ancient writing surface down to the right I have referred to above, when the scroll is laid across the knees, would leave uninhibited a swing from the elbow. Writing movements change over time as the nature of the script itself alters, particularly in the third century transition (see further below). However, a competent writer naturally accommodates all his instruments and all the parts of his body involved in the writing process to the particular position assumed. The significant factor governing the regular adoption of a position must be its long-term comfort and its sustainability over time.

7.   INTRODUCTION TO ROMAN WRITING

With the progression of the Empire and the expansion and development of its bureaucracy came a concomitantly increasing range of military documents. There are now copious examples of known types of document which were used regularly by the military wherever they were stationed in the Empire. Observed similarities in both form and content of army documents are not new. Indeed, Stauner recently took the unity of Roman military documents as the central argument of his monograph (2004). In this work, he conceded slight variations between standard documents army-wide but was insistent that the uniformity of documents represents a principle generally, and probably wherever possible, observed (Stauner: 2004, p.209).

Stauner, albeit in considerably more detail and with updating where necessary, rehearses the basic premise, that there were similarities and shared documentary practices. This idea also underlies Fink's important **Roman Military Records** (1971). Indeed, military evidence suggests that standard documents shared a deliberate, specific uniformity that extended to the handwriting styles in which its documents were written. Styles were consistent across the Empire and also developed similarly in each region with the progress of time. Exceptions that arise, I would add, were probably chiefly due to a lack of appropriately trained staff.

The idea that there were norms for documentary practice throughout the Roman army fits well with similarities attested in other spheres of military life as these have been found in Roman equipment and material culture (for example Pollard: 2004; TEAD-Arms, pp. 251-4).[136] The

---

[136] Gilliam some years ago observed that '...the pattern of life was much the same in any unit throughout the Empire. The equipment of a unit of any type was uniform, and its organization was identical everywhere' (Gilliam: 1965, p.67).

standardisation of military practice and its physical accoutrements was probably facilitated by the movement of officers and soldiers among units who brought in and instigated in the new unit when they travelled procedures that they had learned when elsewhere. It is probably also the result of a deliberately organised policy the precise source of which is yet to be discovered.

Stauner, plausibly, suggests that overall responsibility for the documents (and therefore their format and appearance) lay with the provincial governor who, together with his senior aides, would have had a long military history in several areas of the empire (Stauner: 2004, p.209). He notes that according to the Dura rosters clerical soldiers were regularly detailed to work *'ad praetorium'* as shown by this phrase written against their names (P. Dura 100 xxi, 81; xxvi, 7; P. Dura 101 xxiii). Presumably the words could also refer to service in the legionary commander's office but, in Stauner's opinion, what is intended is the office of the governor himself. Perhaps more convincing is the text of an inscription (QNR. 274 in Stauner's epigraphic corpus). This is the gravestone of '*Lucius Sulpicus Proculus actarius cohortis ex adiutore corniculariorum consularis'* from 2nd/3rd century Dalmatia. It shows thus that he died actuarius in a cohort but had previously served as an assistant to a cornicularius in the governor's officium. This would indeed mean he would have brought with him the practices he had learned in the governor's office. It is unfortunately an isolated example.

Similarities in documentary practices across the army, as set out in detail by Stauner, extend to:

- the practical comprehension of and ability to instigate and maintain systematic filing systems;

- the methods for the compilation and/or collation and writing up of information;

- the use of standard abbreviations and symbols; and

- the use of specialist military language covering titles for officers and soldiers and descriptions for troop units and duties (Stauner: 2004, p.208).

The combined effect of these practices is a range of shared standard document types that exhibit more common similarities than differences.

The standardised system was probably helpful in maintaining administrative efficiency and also in aiding and reinforcing in the troops their overall unification, kinship and shared purpose. The differences in style according to the genre of documents gave a clue to their source and to the type of information they might contain. It would provide an important boost to morale to know, however isolated one might feel in a remote camp, that there were thousands of others like you motivated by the same goals and doing the same things. It also meant that anyone anywhere in the Empire familiar with the known military style would recognise each and any consistently-produced document wherever or whenever it originated as a badge of army unity. There may even have been a 'ritualisation' of the military document that sanctioned its customary appearance by tradition; and an elevation of the act of producing the 'paperwork' that gave the clerks the necessary pride in their work. All of these things depended upon the proper appearance of the documents produced.

It is particularly relevant to the present purpose that the military uniformity of style extended also to the form of the handwriting used in the standard documentation. Military script-styles, like the formats of the documents, were generally consistently and similarly produced throughout the army. By the early third century, if not indeed earlier, there existed a range of recognisably consistent military standard scripts. I have illustrated this here in Plate 14, in which I have put together details from a small selection of military papyri, produced by

different regiments and over a c. 100 year period, and all written in the particular writing style that Welles called the 'clerical hand' (TEAD-P&P, p.56). These are all documents approximately contemporary with the Dura papyri within a range of perhaps 50 years (although for several the date of writing is estimated). The writing is not identical. Obviously, each was written by a different scribe. However, they show as a whole a recognisably shared understanding of *ductus* and similarity of effect.

Again, of course, this is not a new observation. The shared features of army scripts were an important strand in Robert Marichal's work in particular, and he had occasion to examine, in his editing of so many volumes of *ChLA,* hundreds of military papyri. Most succinctly, in the course of his analysis of the *ostraca* from the army camp at Bu Njem, he quoted an earlier linguist who had seen uniting varieties of Roman Latin language

> 'the unity – a supple unity which manages to escape from a rigid schematism'
>
> (Meillet: 1933, cited by Marichal: 1992, p.44).

Marichal, the historian of writing, sees Roman writing analogously.[137] We cannot say that two instances of the 'clerical hand' as just illustrated are identical. We can say that they share a common understanding and are individual variations of an underlying standard. Furthermore, while the script-styles develop and alter in both their morphology and appearance with the progress of time even during the short period the Dura documents span (less than fifty years), as we will see, their overall similarity remains remarkably clear. Because most of these professional scripts are rapidly written, they are particularly susceptible to change as an effect of their cursivity. That the forms of each change in similar ways is a further testament to their underlying unity.

---

[137] *'L'historien de l'écriture latine peut souscrire à ce que Meillet disait de la langue: 'Le caractère dominant de tout ce qui est romain est l'unité – une supple unité qui sait échapper à un schématisme rigide'.*

Before turning to look in more detail at the Dura military clerical hand in following sections, something of the more general history of Latin script should be reviewed and presented, albeit briefly, so as to aid the discussions to follow. For Roman palaeographical debate has been almost entirely occupied, at least since the early 1950s, with the idea that there is a marked shift in the morphology and aspect of Roman writing quite generally, the first signs of which appear in the early third century. It is complete by the early fourth (Mallon: 1952, p.50). According to Jean Mallon, the key instigator of the discussion, the first evidence for the new-style script dates from c. 224 (1952, pp.137-9; Tjäder: 1954-1982, pp.89-90). The purported development or metamorphosis, in Mallon's terminology, from '*l'écriture commune classique*' to *l'écriture commune nouvelle*' - today customarily referred to in English as the shift from 'Old Roman Cursive' (ORC) to 'New Roman Cursive' (NRC) – remains a key point of discussion in the palaeographical arena.[138] On the concept of '*l'écriture commune*', see further p.160 below.

The letter-forms predominantly used in the Dura papyri in all the standard script-styles belong to the ORC rather than the NRC alphabet. But the dates of the Dura papyri place their time of writing securely within the era of the change, and they may therefore contain important evidence for future understanding of the processes by which NRC developed. ORC is by the early third century archaic and under challenge from all sides. Given the potential value of palaeographical analysis of the Dura scripts for the clarification of the processes involved in the change and their causes, I must outline the broad outlines of the ORC:NRC debate briefly here, although to do so is merely to rehearse the work of many others. J.D. Thomas, in particular, gave a concise and coherent summary of the key past literature on this subject which is still most useful today (Bowman & Thomas: 1983, pp.53-60; also Tjäder: 1985). It

---

[138] Hornshöj-Möller has a comparative chart showing terminologies used for the description of cursive writing by various palaeographers (Hornshöj- Moller: 1980, p.171).

is also treated by all the major modern handbooks on early Latin palaeography (Bischoff: 1990; Cencetti: 1997).

The development in Roman script from ORC to NRC, as noted above, was first observed and described by French palaeographer Jean Mallon. His book, *Paléographie Romaine*, published in 1952, in which he set it out, has had a bearing on all palaeographic work since it appeared.[139] What Mallon perceived was a marked stylistic difference between the earlier 'capitular' (or 'majuscule') writing and the new, more 'minuscule' script-style. He also argued that the radical and marked differences between the two styles indicated their entirely distinct and different origins. The process in very early Roman writing, as he saw it, by which more cursively written letters had evolved, apparently naturally, from archaic disjointed forms, was abruptly discontinued. There was a hiatus between the alphabets of each of the two styles which was impossible to reconcile in evolutionary terms. To Mallon, Latin script after the middle of the third century seemed quite different in character and had within it a number of new letter-forms for which he found himself unable to account.

Published approximately one year earlier and because a smaller-scale work consequently perhaps less noticed at the time, Cencetti's important palaeographic publications treated, coincidentally, much of the same material. (See particularly 1993a and 1993b in the Bibliography, which are both recent republications). He too, was looking at Roman documents – many of the Egyptian papyri were being edited and printed, with photographs, in this period, and the excitement this generated was obviously felt by both men – and he too was looking quite closely at letter-form. Independently of Jean Mallon, and arguing in this case against him, albeit unwittingly, Cencetti noted the relationship and what he saw as the

---

[139] For an appraisal of Mallon's masterwork and its ideas Tjäder: 1953; Perrat: 1955. Mallon also, together with Marichal and Charles Perrat, published an important early facsimile collection of Roman documents (Mallon *et al*.: 1939).

link – as opposed to the difference – between the earlier and later periods of Roman writing. However, he also observed that inside the overall unity of Roman writing generally there was also variety, stemming from what he called its diverse graphic 'tendencies'.

In particular Cencetti proposed that there were, in use at the same time but for different purposes, two significant strands of script differentiated for him with the terms 'official' and 'private'. In sum, he argued that the alphabetic changes leading to NRC took place in the private sphere. As this was happening, official script – which continued to be used - was preserved by its practitioners and because it was handed down within its own sphere it remained resistant to similar change. Its characteristic and particular stylised, sloping hand, *'maiuscola inclinata'* (illustrated in Plate 14), was in continual use and remained intact and untainted until approximately the 250's and 60's when it certainly did undergo wholesale alteration. For Cencetti then, the fact that the surviving evidence for the 'official' script far outweighed that for the 'private' style obscured the true story of the evolutionary morphology of the letters of ORC particularly because the witnesses for the latter did not survive (Cencetti: 1993, p.16).

Cencetti was developing in his work ideas first put forward earlier in the Italian school of palaeography by its founding father, Luigi Schiaparelli, in his book **La scrittura latina nell'età Romana** (which first appeared in 1921 and was republished in 1979). Later scholars have expressed themselves sympathetic to the Italian arguments, and a key work treating aspects of the development of Roman writing over the period in question was the large monograph published by two more Italians, Emanuele Casamassima and Elena Staraz, in their collaboration which will again be referred to below (Casamassima & Staraz: 1977).

Mallon had argued that the letters <a>, <b>, <e>, <n> and <p> as they appear in their NRC form were particularly good examples of letters that could not have developed from ORC (and similarly, but less strongly, <g>, <d> and <f>). Tjäder, a significant Swedish palaeographer, who had been much preoccupied with the question of the development of NRC for most of his working life (d. 1998), was particularly keen to find early evidence for prototypes of the new forms of the letters Mallon had drawn attention to. He did not find evidence for NRC <a> before 242 CE, and this letter he took to be the defining feature of NRC. Therefore for him, all writing prior to 242 should be classed ORC (Tjäder: 1985, p.189).[140] He insisted also, however, on differentiations in script depending on its use and in this he paid homage to Cencetti (Tjäder: 1979; 1985).

All the above issues are important to the discussions that follow below. The question of script variety as dependent on the purpose for which it is used is crucial for the understanding of any writing in a manuscript (as distinct from a print) culture. Scripts depend for their style on their context. Deliberate and consistent differences in script appearance are motivated and considered. In Section 8 below I explore this issue at some length. Letters also change naturally and gradually as their evolution progresses - a key principle of Mallon's script analysis – and this idea too will be introduced in Section 8. In Section 9, I consider the effect of these ideas in some of the other script-styles in the documents from Dura, before turning in Section 10 to a detailed, chronological analysis of the clerical hand as it occurs in a small set of papyri from Dura. These last documents are obviously representative of 'official script', but in the later years at Dura the style begins to show small signs of change although the particular form the changes take could perhaps not have been predicted. In Section 11 I move

---

[140] Tjäder appears to base his recognition of the new style writing in P. Dura 60 on the form of the <a>, which is indeed in the new style. The first documents he accepts as written in NRC are P. Mich. 164 (242 CE), P. Oxy 720 (247 CE) and P. Oxy 2269 (269 CE): ChLA V, 281; ChLA IV, 269 and ChLA IV, 262 respectively.

on to offer a few brief thoughts on the other activities for which the Dura clerical soldiers may also have been responsible in camp and the other types of letters that they knew and may have produced for military purposes.

8.   *DUCTUS*

8.1   TRANSMISSION

In the civilian world, training for scribal work was commonly by apprenticeship (Westerman: 1914; Frasca: 1994). In the professional workshop, young apprentices learned the ropes, beginning with basic, less expert tasks, and gradually gained know-how and practical expertise (cf. p.116 above). The training of artisans has historically been carried out in this way and it is a precedent still followed in working practice today. A comparison can be drawn between training in the military *officium* and in the ancient civilian workshop, for very probably methods were similar in both, although in the cohort *officia,* slaves may have carried out the more basic duties (Speidel: 1992; Phang: 2005). Junior tasks in an administration department may have included preparing pens and perhaps lengths of papyrus, attending to filing and maintenance of the archive (under supervision of a senior *officium* member), making up ink, probably in sufficient quantities for the day's work, and, last but not least, practising and mastering initially just one particular script style.

I assume that most apprentices to military *officia* were literate, at least in the sense that they knew how to write a basic alphabet. Although soldiers coming into the *officium* would almost certainly already have been able to write at least a basic hand, the script may sometimes have been Greek rather than Latin. They were now set to learning particular standard Latin writing styles that would modify in various ways the forms of the letters they had already learned, and to produce these consistently and efficiently. The process would have taken time, at least initially, and have necessitated repeated practice in drawing and painting the letters so as to fully internalise their movement and form.

'Repetition via supervised practice eventually fixes an image in the mind's eye'

(Gibbs: 2007, p.4).

This is a necessary stage in learning and being able to consistently reproduce a given style. In this way, and gradually, an understanding and a natural ease in writing the style can be acquired.

Trainee writers probably had repeated sessions under the supervision of a master (a *librarius*) and would also, no doubt, have taken all available opportunities to watch and learn from fully trained workshop members as they worked.

Professional writing training includes observation and imitation of all that the teacher does, including pen manipulation and movements of the arm. One important effect of such a teaching style is restraint of the student's particular idiosyncrasies and reinforcement of the traditional way of working. Whether or not it is a conscious aim, the reproduction and repetition of inherited styles is a natural consequence of the teaching method simply because, as Lewery discussing the training of contemporary signwriters comments, the conscientious master makes sure his protégé does the job in the same way as himself (Lewery: 1989, pp.14-15). Nonetheless, because of his own individuality, a scribe can never ape his master exactly. He may be better at his craft than his master was, but he could never work exactly as he does (Gilissen: 1973, p.51). This is one of the ways in which Roman writing is open to change as the pupil eventually becomes the master, and transmits his own slight variation on the received style.

The few ancient sources which discuss the teaching of writing relate, probably without exception, to teaching children as complete beginners at a very basic level of learning (secondary literature here includes Marrou: 1956; Bonner: 1977; Harvey: 1978; Muir: 1984).

The training given by the *librarii* to equip new clerks for their administrative duties was probably set at a more advanced level than the basic, more general schooling most had already had. It is probably as well, however, to give an account of the evidence for Roman writing teaching, beginning with the elementary stage. Doing so will also introduce some basic principles of Roman writing, an understanding of which will help clarify points to be made in what follows.

Quintilian in his manual for the education of the children of the gentry *'The Orator's Education'* (written early in the 1st century CE) recommends that small children do not learn the names of the letters before their forms; an order, he says, that is often adopted (*Inst. Or.* I.1.24-5).[141] Instead, he suggests teaching children both the letter shapes and their names together and he approves of the clearly known practice of stimulating them early on to learn the letter shapes by giving them ivory letters to play with (*Inst. Or.* I.1.26).[142] Model letters for teaching are also mentioned by Seneca (*Epist. Moral.* 94.51), but he probably follows Quintilian in this (Muir: 1984).

An analogy can be drawn here with the working practice of the modern educator Maria Montessori. In her ground-breaking teaching of writing, she used sets of sandpaper letters, finding that when the children traced the letter movements they enjoyed the tactile sensation that running their fingers over the sandpaper gave them. In her writings she stressed the usefulness of activating the 'muscular memory' of the writing pupil in the initial stages of training (Montessori: 1972, p.212). Her pioneering work in this field remains influential in handwriting teaching today. Rosemary Sassoon, for example, an important and prolific writer

---

[141] *'... ut litterarum nomina et contextum prius quam formas parvoli discant'*.
[142] *'Non excludo autem …. eburneas etiam litterarum formas in lusum offerre'*.

and researcher into modern handwriting issues, also recognises the benefits of kinaesthetic feedback and insists that

> 'because handwriting is a motor skill it does not and should not depend exclusively on visual feedback' (Sassoon: 2003, p.50).

Indeed, modern work on handwriting commonly supports the idea that handwriting movements play a crucial role in learning letters and suggests that physical handwriting activity contributes to the retention of visual recognition of the forms (Longcamp et al.: 2006).

Returning to the ancient sources, Seneca, writing in the first century CE, mentions in one of his letters elementary writing pupils using a '*praescriptum*' (*Ep.* 94.51). A *praescriptum* has been thought to be some kind of pre-written model or exemplar, perhaps letters scratched into wood, but its precise meaning remains uncertain (Turner: 1965; Muir: 1984, p.237, Note 9; Cribiore: 1996, p.122). Upon the *praescriptum*, Seneca says, the teacher, covering the pupil's hand with his own, holds the pupil's fingers and leads them around the letters. Increasing the frequency and speed with which the pupil follows the fixed outlines gives steadiness to the fingers and gradually the child will not need the guiding hand upon its own.[143]

Likewise Quintilian, in the next stage of his syllabus, recommends that the child, having mastered the shapes, be given a tablet with the model letters pre-inscribed upon it. He writes

---

[143] '*Nam neque errabit quemadmodum in ceris (continebitur enim utrimque marginibus neque extra praescriptum egredi poterit) et celerius ac saepius sequendo certa vestigia firmabit articulos neque egebit adiutorio manum suam manu super imposita regentis*'. In a passage in the Protagoras (326 c-e) Plato may be referring to the same process (Cribiore: 1996, p.143-4; Harvey: 1978, p.73; Turner: 1965).

'When the pupil has begun to follow the *ductus* it will be useful to have [the letters] cut as accurately as possible into a tablet, so that the child's stylus can be guided along the grooves' (*Inst. Or.* 1.1.27).[144]

Both the above exercises would optimally be done using waxed or wooden tablets as the writing surface. Schoolchildren are known to have commonly learned to write on wax in the Roman period and Quintilian explicitly recommends this material for students of writing (*Inst. Or.* 1.1.28; Rouse & Rouse: 1989: 1990, p.12). Having given the students example letters to copy, they will be set to copying and re-copying them repeatedly until they are considered to have sufficiently mastered them and are permitted to move onto the next stage.

Making the above recommendations, Quintilian refers to the child following the '*ductus*' of the letters. It is as well to ensure that the meaning of this word is clear before progressing. In the Oxford Latin Dictionary, the word '*ductus*', when used to refer to writing, has two main meanings:

i.   motion in a particular line or direction, a controlled movement;

ii.   a line as produced by drawing, an outline; a linear arrangement or line.

The split in the word's reference in the dictionary definition points to the fact that in Latin the movement made to form a line and the line formed thereby are aspects of the same thing.

A nugget from Pliny's *Historia Naturalis* (also cited in the dictionary definition) gives further pertinent confirmation that the word could be used to refer to writing. Discussing the intelligence of elephants, he relates that a certain Mucianus spoke of one such animal which

---

[144] *'Cum vero iam ductus sequi coeperit, non inutile erit eos tabellae quam optime insculpi, ut per illos velut sulcos ducatur stylus'.*

had 'learned the '*ductus*' of Greek letters' and used to write out short texts proclaiming its accomplishments (VIII.3.3.6).[145] In Quintilian's usage therefore we should understand '*ductus*' as encapsulating in its meaning both the letters themselves and the movement and direction of the particular strokes used to form them. It also, arguably, refers to the sequence in which these strokes are executed as I shall illustrate more comprehensively in discussions to follow.

Quintilian's use of '*ductus*' shows that the number, sequence and direction of the composite letter strokes that went to make up the letters were emphasised in the teaching probably over and above the forms of the individual letters themselves. Indeed, both he and Seneca, in their references to the writing classroom, depict teachers paying great attention to the correct transmission of the patterns of movement required to make letter-forms. Once again, modern investigators have also stressed the importance of this point. Rosemary Sassoon strongly contends that, if children learning to write are asked to copy letters without knowing the stroke pattern by which they are formed, they will produce incorrect and often quite seriously misshapen forms.

Her illustration (Figure 5) shows the work of a group of modern Japanese schoolchildren asked simply to copy example letters. They have found their own ways to draw what they thought they saw, but the result is that some shapes are already difficult to recognise. With the passing of time, the cumulative effect of changes like these in the writing of a vast range of individuals would affect and distort the basic alphabetic forms quite quickly, particularly in situations where writers are working at speed.

---

[145] '*litterarum ductus Graecarum didicisse*'.

Figure 5 (reproduced from Sassoon: 1995, p.16).

Fast writing accentuates and makes visible otherwise hidden misconceptions of letter structure. Functional and rapidly-written scripts, such as are exemplified in the developed hands on the Dura Latin papyri, had they been handed down through generations without careful attention being paid to their *ductus*, would quite quickly have lost their characteristic shapes, thereby threatening their own legibility and therefore their usefulness. Indeed, each letter-form must have been broken down into its composite strokes and each stroke carefully learned with its own movement and place in the sequence of the whole. The teachers of the clerks in the *officium* at Dura, must, as was customary in the Roman classroom, have taught their students the correct entrance point of each letter and the *ductus* of each pen-stroke that went into a letter's construction.

To better understand the importance of '*ductus*' in Roman writing it is necessary to look briefly at its origins and earliest form. As is well-known, the earliest Roman handwriting had usually been made by scratching or carving into a hard writing surface (Pandolfini: 1990; Häussler & Pearce: 2007). To do this, any sharp pointed tool might serve, but a stylus was an

instrument specifically designed for the purpose.[146] Styluses were easily available in the

Roman world and are ubiquitous in archaeological discoveries. As tools, they were simple,

extremely portable and handy, and they were used by many different types of writer for a

growing number of purposes. In fact their influence on the appearance of early Roman letters

is apparent and has moulded and conditioned their form, regardless of the instrument with

which they are written (Cencetti: 1956).

Many surviving instances of archaic stylus writing are '*graffiti*' (literally scratchings), on

walls or inscribed onto fired clay pots or vessels (Cornell: 1991). Such writing surfaces are

hard and resistant, and to make an impression on them requires at least a certain amount of

force. When standing in front of a wall, it is easier to make a mark by pulling, rather than

pushing, a stylus, so as to avoid its point digging and sticking into the wall surface. The

composite vertical strokes of the letters therefore, were generally pulled in a direction running

from top to bottom. For the same essentially biomechanical reasons, in a script running from

left to right as does the developed Roman alphabet, both oblique and horizontal composite

letter strokes were also pulled from left to right, following the direction of the writing.[147]

When writing with a stylus on hard surfaces, curves are difficult to execute and this makes it

easiest to build letters up in series of short, straight strokes. Archaic letters therefore were

assemblies or composites of straight strokes, commonly angular in appearance. Strokes were

drawn in a vertical, top-down or an oblique left-right direction. The writing produced was

commonly angular in appearance with strokes running in a vertical or an oblique direction

---

[146] '*Stylus ferreus alia parte qua scribamus, alia qua deleamus, affabre factus et in suo genere pulcher et ad usum nostrum accommodatus*', Pat. Lat. 34, Opera Omnia Augustini Hipponensis, *De Vera Religione*, Lib.I (C), XX.
[147] There may be other reasons for this phenomenon besides the biomechanical and the stroke direction preferences of children have received much attention from theorists working in this area – further examination of which would be outside my brief but see Van Sommers (1991).

(Cencetti: 1997, p.62: 1993b). These were usually each separately formed, merely touching (or intended to touch) each other to make up the formal unity of each letter-form.

Because of the straightness of the strokes, an early investigator of Roman script once classified the resulting style of writing as 'linear' (Garrucci: 1856, 1). He also wrote of an 'inevitable transformation' taking place when writing rapidly, the features of which are that curves (such as they exist at all) become straighter, oblique strokes angle upwards and horizontals begin to approach the verticals and may become hard to distinguish from them (Garrucci:1856, p.7).[148] All these phenomena exist in the illustration of the letters '*menedeme*' in Figure 6 – admittedly an extreme example. Here the curves of the letter <d> (marked) are more or less indistinguishable from the straight strokes and vertical strokes are angled in an oblique direction rather than truly downwards.
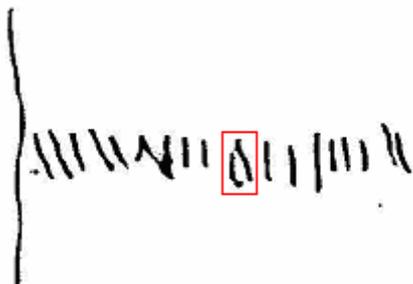
Figure 6. *Graffito* on a Pompeii wall.
(Reproduced from Garrucci: 1856)

The consequence of the above is the fundamentally important point that the resulting disjointed or fractured appearance given to archaic script by its method of letter construction,

---

[148] '*une inevitable transformation*'.
Sommers (1991) carried out extensive empirical research into preferred patterns of stroke-making, and found that the movement towards 3 o'clock in a horizontal direction was an area of technical difficulty. With this movement a natural 'fanning' of the lower arm occurs which produces a line inclining towards 2 o'clock. To produce a horizontal line the slant must be counteracted with use of the fingers.

christened by Emmanuel Poulle '*l'éxecution fractionnée*', was subsumed henceforward into all Roman writing. Indeed it survived very little changed until the era of widespread use of the printing-press and the development of modern pens, for the Romans essentially retained in all writing media, including that with reed-pen on papyrus, the technique originally developed in stylus writing and its accompanying patterns of *ductus*. '*L'éxecution fractionnée*' is, as Poulle described it, a major fact of [Western] civilisation, the consequences of which are still with us today (Poulle: 1977, p.135).[149] Roman writing, with the progression of time, was to develop and considerably alter in aspect, but consistently, as still today, the techniques, the disjointed strokes and the preferences for particular directions of stroke as used in stylus writing were retained at its base. Most importantly for the discussion here, the pattern of the *ductus* was generally preserved.

Successive writing teachers consistently over centuries saw to it that their students fully absorbed the correct (because traditional) stroke formations in their work and that they understood the principles of *ductus*. Much of their knowledge in this respect would have been imported using imitation and guided repetition, as suggested earlier. Teachers ensured that students followed and reproduced in their written work the accepted and known stroke patterns. Confirmation of this can be found in the work of Alain Blanchard, who, in a study illustrated with material from as early as the fourth century BCE, investigated the similar apparent unity and continuity of *ductus* in Greek scripts. Blanchard also pointed to the conservative nature of writing habits and in particular of writing education. He described the school as an 'extremely conservative milieu' and in his analysis of the scripts taught in Greek schools, found that while letter-forms might be adapted and altered in appearance, at bottom the same letter *ductus* was essentially preserved

---

[149]'*un fait de civilisation majeur*'.

'from one end of the papyrological millennium to the next' (2001, p.135).[150]

Whilst I would broadly agree with this, it requires certain modifications and to these I shall turn in the following section. It also continues the shift in focus away from the camp at Dura-Europos. It will, however, ensure greater comprehension of the Dura scripts when I come to consider them in Section 9 below.

8.2   DUCTUS, FORM AND CONTEXT

Blanchard is perhaps the latest in a line of scholars who have taken on board the findings of the palaeographer members of '*l'école Française*', and in particular of Jean Mallon, who had reintroduced the principle of *ductus* to modern scholarship and emphasised its importance (Mallon: 1952, p.22). In fact, the first modern scholar to apply the term '*ductus*' to script is thought to have been Bernard de Montfaucon writing in 1708 (Mastruzzo: 1995, p.403; Cavallo: 2001). But Mallon, publishing his '*Paléographie Romaine*' in 1952, restored the term to general modern currency and demonstrated its guiding influence in all the metamorphoses of letter-form that were to take place in the long history of Roman writing. His work, and that of his followers, continues to be instrumental in the development of palaeography today, particularly in France. It is also the guiding influence behind most of the work on script analysis undertaken here.

When making some sketches or copies of Roman documents, Mallon had stumbled almost by chance on the idea that both less formally-written letters and formal 'capital' letters, as used for example in inscriptions in the Imperial era, shared, broadly speaking, a common stroke

---

[150] '… l'école est un milieu très conservateur… avec quelques adaptations de formes, c'est au fond le meme *ductus* qui est enseigné d'un bout à l'autre du millénaire papyrologique'. See also Blanchard, 1999.

construction or *ductus* (1952, *passim*).[151] His most celebrated illustration of the point is probably that of the letter <b>. <B> in the earliest Roman utilitarian or everyday script, '*l'écriture commune classique*' as he called it, has its bowl to the left of its stem (the form he termed <b> '*panse-à-gauche*'), and in this it differs from the later (and also the modern) form of the letter which has the bowl on the right side of the stem at its base.[152]

In Mallon's illustration shown below, he demonstrates that both the capital and the less formal, everyday-style letter <b> in early Roman writing share essentially the same *ductus*.[153]

Figure 7
(reproduced from Mallon: 1952, p.34).

In Figure 7, the arrow on the left indicates the direction of the separated strokes 1 and 2 of the capital letter-form. In the everyday letter, the 90° angle at the point the strokes meet is rounded and diminished in size, and the two strokes are fused into one. The 'bowl' created thereby, together with the sinuous line given by the fusion, lengthening and straightening of strokes 3 and 4 of the capital form, makes the less formal style <b> one of the most idiosyncratic and immediately recognisable of all of the early Roman letter-forms.

---

[151] On the use of the word 'capital' in this thesis, see p.15, Note 6.
[152] Mallon (1952, para 86) prefers the term '*écriture commune classique*' to the term '(old roman) cursive', which, until his time, was commonly used to refer to earlier documentary scripts generally. '*L'écriture commune classique*' as he saw it, referred to the recognised form of writing at the period, regardless of its use, which could be in documents or in books (see also p.144 above).
[153] On the use of the word 'capital' in this thesis, see p.15, Note 6.

The capital <b> has four strokes not two, but both the 'capital' and the 'common' letter-forms are, Mallon proposed, related to each other. He believed that the forms of <b> in both writing styles essentially shared the same *ductus* and he argued therefore that their respective letter-forms were related despite their very diverse appearances. That they looked so different from each other as for this to be scarcely recognizable, he argued, was due to the continuous development of each from earlier precedents over a considerable period of time. What had stayed essentially unaltered in each was the *ductus* of the composite letter strokes (Mallon: 1961, p.583).

Mallon's account of the development of <b> is undoubtedly plausible and it has since become a fundamental tenet in palaeographical lore. This metamorphosis did not happen in isolation and it can be paralleled, if less dramatically, by similar changes in the outward form of every other letter in the Latin alphabet. Mallon illustrated this by examining two particularly useful documents (dated 47-48 CE) recovered from Oxyrhynchus. These two papyrus fragments are catalogued today as PSI X1 1183 a. and b. and were published, most recently, with plate and further bibliography, in (Seider: 1972, No. 6). They were formerly top and bottom parts of a single document. Found together in the remains of an Oxyrhynchus house, each contains a copy of parts of a declaration of property drawn up for the purposes of a census return.[154] Both texts are fragmentary but have been reconstructed by their editors.

Plate 15 shows the two fragments as they are preserved today. The fragments do not correspond precisely in the portion of the complete reconstructed text they preserve, but both preserve approximately the same content and must therefore have been written at

---

[154] Completed returns from the town should actually have been forwarded to the regional Prefect for administrative purposes, but clearly neither of these copies had ever been sent off. Whether the Prefect in fact never received this particular land-owner's return at all, or whether one of these is a file copy the owner kept for his own records say, while the other is perhaps simply a draft, will probably never be known.

approximately the same time despite their striking differences in style. Both were very possibly written by the same person. The script of neither fragment exhausts the possibilities for either formal or informal lettering in this period but both are representative of scripts of their era. Since the two contain almost the same text they are perfect for comparison.

The alphabets in Plates 16 and 17 are intended to facilitate a comparison. In each, the *ductus* of the letter strokes is marked with red arrows. Strokes are numbered to show the sequence in which they are written, while the arrows show the direction in which they are probably pulled. The scribe's actual execution may have varied slightly, particularly in the order in which he added the ornamental serifs - not an integrated part of the letter-form - but the *ductus* given here is at least plausible. The strokes are made in separate movements, with the pen lifted after one, placed back on the paper and pulled through the next.

Although some of the letters in 1183 b. lack the addition of the ornamental serifs in a. and are sometimes further reduced both in number and in the length of the strokes, the order and direction of the strokes in b. is essentially the same as that in a. Most letters are formed with at least two pen lifts (<y> being the single exception), and most strokes are pulled in a downward direction (usually starting top left as with stylus-made letters). There are no upstrokes and horizontal strokes in both scripts tend to tilt upwards (e.g. top and mid-strokes of <e> and <f>). In b. the internal spaces of letters are considerably reduced.

Note too, that the scribe of each piece chose to write each with a pen cut of a thickness appropriate to its intended function. The thicker 'broad-edged' pen used for fragment a. is customarily used in the earlier Imperial era to produce more calligraphic scripts appropriate for formal purposes, while a fine, pointed reed is used to produce documentary script styles. This deliberate differentiation between pens made by scribes according to the purpose for

which they were writing is now commonly acknowledged in the literature, credit for first making the point in print being usually given to Robert Marichal (1956, pp.25-26). The reason for the choice of the two different styles of script can also be attributed to the intended function of each piece. Mallon, who discusses these texts in some detail, considered that fragment a. represented some kind of formal or fair copy of the text in b., describing it as

> 'a copy which must have been designed to serve as a notice or for any other method of display' (Mallon: 1952, pp. 25-30).[155]

It is important when looking at script to take into account, and to hypothesise where unknown, the reason for which they were written. Both the formal and the informal scripts, termed by Bernhard Bischoff the 'calligraphic' and the 'cursive', are alternative script styles in the repertoire of a practised scribe. Each represents a fundamentally different 'technique of writing' (Bischoff: 1990, p.51). The differences between them rest not on the letter-forms themselves so much as on the techniques used to form them: posed separation of strokes and movements in the formal letter (the writing style Bischoff calls 'constructed') and fusion of strokes in the everyday form caused by its habitual speed of execution in informal contexts (Bischoff: 1990, pp.51-53). This is the point Mallon had earlier made with his two forms of <b> and reinforced in his analysis of the Oxyrhynchus papyrus.

If fragment a. shows a formal hand, fragment b., in contrast, is written in a rapid, informal, perhaps everyday handwriting style, is smaller in module, generally harder to read, and contains a far higher proportion of idiosyncratic elements, habits of writing personal to the particular writer. It could well represent a list written by the owner (or his clerk) as he

---

[155] *'une copie qui durait été destinée à server d'affiche ou à tout autre usage ostentatoire'.*

compiled the inventory of his property it contains. Fragment a., more legible than b. and more slowly and deliberately written, may have been intended as the more permanent record.

In Roman documents generally, the principle that the script style should match the function of the document in which it appears is usually observed in some way. Scribes commonly produce scripts that respond to their habitual contexts. In documents intended for public display, for example, letters needed to be both legible and visually striking and were therefore written relatively large in size with greater care taken over their construction. Monumental letters, such as those carved on fine inscriptions or written in *de luxe* books, are always the letter-form at one extreme end of the formal : informal script continuum. Less formal documents, written to convey messages to much smaller, informed audiences, also reflect that context in their appearance. Their scripts are usually smaller in module, and very often the writer's need for expedition is obvious. The letters tend to be less carefully written, and their legibility often depends more upon the coherence of the whole script as it forms a text or a section of a text, than on the realization of their individual features. In fact, these may be hard to recognize at all if taken out of their context. As Cribiore comments,

> 'when the writing is very fast, it is impossible to distinguish the characters individually, but the letters appear as a series of symbols and acquire meaning from the overall context' (Cribiore: 1996, p.5).

This point too – in addition to his illustration of common *ductus* – Mallon brought out of his analysis of PSI XI 1183.

In the history of Roman writing, in a progression beginning in the archaic era, a differentiated relationship established itself between styles in Roman Latin writing which grew out of the habitual use of given stylistic variations in particular contexts. The contexts for writing

themselves were increasing over the period of development, and by the first century CE, when the Roman state is establishing its maximum hold over its empire and relying to do so on written documents and literate practices in many areas of life, the array of script-styles is particularly rich and complex and indeed

'a varied and lively dialectic of graphic types'(Casamassima & Staraz: 1977, p.11).[156]

An era in which, despite the traditional conservativeness of scribes, literacy is growing and new documents and uses for writing are constantly under development, is fertile ground for change and innovation. Broadly, however, the script-styles in use were on the one hand formal, aesthetically-pleasing letters carefully constructed and situated in contexts of public display; and on the other, functional, rapidly-written scripts such as those belonging to the administration. Public notices, calligraphically-written deluxe books and certain types of prestige correspondence were habitually produced in more formal styles of writing. Informal private letters, miscellaneous lists and jotted memoranda were usually composed and dashed out in correspondingly less formal script styles. P. Oxyrhynchus XI 1183 a. and b. are perfect illustrations of this point.

The dialectic ongoing between varieties of script, as Cassamasima and Staraz describe it, might be represented approximately as in the figure below – a schematic representation of the evolution of Roman letters over time with the two extremes of script diagrammatically opposed to each other. The figure is also intended to make clear that the contextual varieties develop synchronistically, and that neither the formal nor the informal script register takes the other as its starting point. Each has its roots in the writing styles and letter-forms of an earlier

---

[156] *'una varia e vivace dialettica di tipi grafici'*.

Archaic
Letters
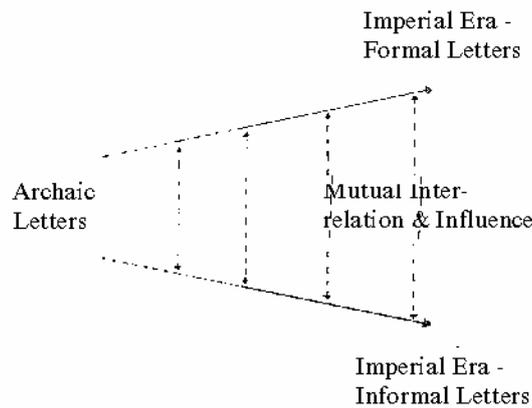
period.

Figure 8

This means that later graphic variants of a given letter cannot each be traced back to an earlier prototype but rather, at any point in time, there is a series of contextually-determined, stylistic variants for each letter of the alphabet. The process was continually ongoing from the earliest days. The oblique angle of the two axial lines indicates the increase in the number and range of varieties over time with the growing sophistication in Roman literate practices and procedures. The dotted cross-section lines on the figure show the ongoing and continuous relationship between the two extremes of the style spectrum.

Scripts are, at least to some extent, interdependent, and all letter-forms and variants of letter-forms are continually (usually slowly) mutating and developing. The connection in the *ductus* of the letters in different varieties and registers of use has already been demonstrated. But variety, interchange and mutual influence is constant in all scripts that are being used by many writers for diverse purposes and the effect that co-existing writing styles have upon each other is probably always a significant factor in their history.

Casamassima and Staraz's idea of a continuous 'dialectic' in writing had first been recognized by Cencetti, who saw it as particularly fecund in the first two centuries of the Christian era

(1993b). He suggested also that there is, in Roman script, a dynamic rapport between two different tendencies in writing, one of which is intentional script design on the part of scribes and writers with an aesthetic discrimination; and the other, which happens quite by chance, is a natural effect of the writing movement itself, a graphic process that leads to rapid and summary execution of the letter-forms. These two tendencies are

'... in operation wherever writing of both types is in use',

and each type has its effect upon the other (1993a, p.182).[157]

Cencetti adds to Mallon's perception of the unity in *ductus* between different varieties by arguing that the two types share methods, principles and letter-forms that are influential, each upon the other. More correctly, of course, the writer of each script-style is influenced by the writer of the style opposed to his and by the habits particular to each. The same men, after all, will very often be responsible for producing both styles. The effect is the development of new styles of writing and new letter-forms borne out of the intermixture, the melting-pot to which Cencetti refers as the '*rapporto dinamico*' (Cencetti: 1993a).[158]

These considerations are important to the analysis of the scripts of Dura-Europos that follows below. By the Dura period all the earlier series of letter-forms, whether formal or informal, have been developed and transformed into new series of forms, which preserve largely the same principles of *ductus* but which differ in appearance from those of the earlier era, such as the two scripts just seen. No alphabetic letter, however, appears in one single form but each always has several variants. The variants are generally more or less strictly governed by their

---

[157] '*che... operano dovunque sia in uso la scrittura*'.
[158] '*due fioni grafici... sostanzialmente autonomi l'uno rispetto all'altro ma capaci di influenzarsi e condizonarsi a vicenda in tempi successive e in modi differenti, pur senza mai perdere la loro specifica individualità.*'

use in particular context-related script varieties. However, broadly speaking, each Roman letter in all its instances retains its same *ductus* and constructional principles.

Accomplished writers could no doubt write in a variety of styles. At Vindolanda for example, as Bowman observes, writers switch from capital to cursive in the same text (Bowman: 2003, pp.87-8). Peter Parsons describes the written work of a certain Lollianus, who was public *grammaticus* of Oxyrhynchus in the mid third century and who drafted a petition in a large formal hand but employed a small neat hand, typical of those used for commentaries, for writing a letter (Parsons: 1976; Bucking: 2007). At Dura, the same scribes that wrote the morning reports in the clerical hand probably also wrote the *Feriale* (P. Dura 54) in a capital bookscript and had their own handwriting for more personal uses. However, uniting all Roman script varieties is the inescapable constant that

> 'a scribe who takes up a pen…. may do one of two things: he may form the constituent strokes of each letter in a separate movement of the pen; or he may economize effort by joining these movements in a single looped sequence' (Turner: 1987, p.1).

In the section above, I have explained and illustrated this point.

8.3   CHANGE AND DEVELOPMENT

The insight that the *ductus* of letters remains constant through centuries; that it is

> 'the thread of Ariadne that can be followed and which allows one to organize the masses of witnesses that survive to our day',

remains important (Gilissen: 1991, p.326). However, a debate continues with respect to its adequacy as a general explanatory theory of writing able to account for such wide variations and chronological permutations in letters as are evident in the history of Roman writing.

Lèon Gilissen, a Belgian scholar whose work is scrupulous and clear, applied Mallon's ideas of *ductus* in his own analyses of mediaeval manuscripts now (Gilissen: 1973). In doing so, he spoke of palaeography going forward post-Mallon as something distinct from what he called 'traditional palaeography', and he emphasised the need to go back and reconsider the sources with new eyes, looking in doing so, to recreate the arm movements their scribes must have made to be able to write them.[159] He was looking himself, to find the cause of their great variety, to see if, as he put it,

'behind their silence we might rediscover their dynamism' (Gilissen: 1982, p.319).[160]

His own investigations along these lines led him to refine and extend the concept of *ductus*. He saw, in the first place, that in the movement used to form a letter made by the pen-holding arm, the points at which the nib does not touch the surface are as important as those in which it does, in that the arm movement also leaves its trace on the page. He called this phenomenon 'invisible *ductus*', and illustrated its effect in an analysis of the letter <e>, the development of which he traced from a formal capital form to a 'lower-case' minuscule letter similar to that widely familiar today. He illustrated, yet again, quite incidentally this time, that the *ductus* of this letter remained unchanged, broadly speaking, throughout the entire transformation. The figure below reproduces his illustration.

---

[159] *'paléographie traditionnelle'*.
[160] *'Si, derrière leur mutisme, nous retrouvons leur dynamisme, les monuments écrits n'en restent pas moins un assemblage de formes statiques'*.
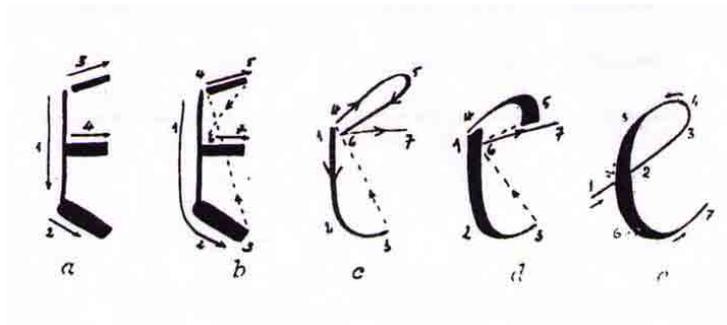
Figure 9
(reproduced from Gilissen: 1982, p.308).

In diagram a) in the figure, the solid line arrows illustrate the *ductus* in Mallon's sense, i.e. the sequence of the strokes themselves. In b), the broken line arrows represent the movement of the pen-holding arm, i.e.

> 'the movements that the scribe made 'in the air' which leave no mark on the writing surface' (Gilissen: 1982, p.308).[161]

Diagram c) shows the hand movement used to form the later minuscule letter as in diagram d). Here, strokes 1 and 2 are fused into a single movement. The pen is lifted at point 3 and moved up to point 4 ready to pull out the top stroke and arriving thus at point 5. The loop formed by the movement of the scribe's hand in making what in diagram a) were the upper two horizontal 'arms' of <e> now more obviously affects its shape and the whole letter is also rounder as a consequence of the repeated, habitual movement.

The passage of <e> over time, as shown in the figure, illustrates that the developments the letter undergoes were always latent in its form by virtue of its near constant *ductus*. However, features of movement condition form and a repeated movement acquires a certain autonomous existence and commonly becomes quite exaggerated. The length of a vertical

---

[161] *'des mouvements que le scribe fait 'en l'air' lesquels laissent aucune trace sur le support.'*

stroke, for example, can be emphasised so that it gradually assumes more importance in the shape of a letter. Over time small changes have a cumulative effect and can lead in the long run to quite different letter shapes. In the case here of <e>, the upper half comes to increasingly dominate the letter's shape.

The new form <e> in diagram d. also exemplifies the fact that when writing at speed, writers commonly begin to ligature or join together the component strokes of letters. Rapid writing inhibits writers from lifting the pen between composite strokes, and this makes the complete arm movement and the structure of the letter retraceable. The lines sketched out in diagram c) could always potentially appear in d), if only through error. This is what makes rapidly written scripts so useful for historical palaeographical analysis. In formal, 'posed' hands *ductus* is usually impossible to deduce with any certainty. Such hands are precisely and carefully made and the traces of *ductus* are hidden. Informal writing is not hedged about with similar restraint and, when writing more quickly, the scribe who fails to take his pen off the paper at the 'proper' point leaves his movement visible on the page.

The effects of rapid writing movements mean also that

> '… in cursive 'flowing' scripts ... the decisive changes occur and the new letter forms appear' (Bischoff: 1990, p.53).

Economy and speed in writing makes the letter-forms more susceptible to the influence of what Albertine Gaur has called 'Principles of Ease'. These principles, which are operative in fast writing of all kinds and in all eras, mean, in effect, that if a particular movement is too cumbersome it is unlikely to survive long because writers will, naturally and unconsciously, seek ways to simplify it (Gaur: 1992, p.119). This is a helpful concept in explaining the later development e) of the forms in a) – d). The letter in diagram e) is aligned to the shape in d)

but a comparison of the direction of the arrowed movement in the two shows that the direction in which the whole form is made has changed.

In the letter in diagram e), the scribe begins at point 1 and then executes the entire letter in a single movement which can be traced on the diagram through points 2 to 7 as labelled. The new cursive form e) is based on the shape of the earlier letter in d) but the writing movement made to form it is different and the emphasis in the perception of the form has shifted to its upper loop. The top loop is from henceforth the principal, identifying characteristic of this form of <e>. I will return to this point shortly.

The kind of semi-scientific analysis of letters that Gilissen presents in the first four of his illustrations is a direct result of Mallon's approach to palaeography with its focus on *ductus*. But Mallon's theory of *ductus* has no explanation to offer for the phenomenon in e) and Gilissen's addition to the story of writing's development is necessary. In 1965, in a paper apparently unknown to Gilissen, J.P. Gumbert had traced the development of the letter <v> (*'nu'*) in Greek script through six centuries, i.e. from the second century BCE until the fourth century CE (Gumbert: 1965). In it he showed that in this passage of time <v> had several different forms, some of which survived and were carried through into the development of new forms, and some of which emerged and died out soon afterwards. He found too, like Gilissen, that whilst the *ductus* of the early letter could be followed through into its later developed forms and many of the changes in its form seen as speed-induced simplifications, yet there were also developments in the letter that demanded another explanation.

Being careful to stress the importance of the writer's eye and the 'mental model' s/he has of the letter shapes, Gumbert set out two distinct ways in which change may occur. In the first, which he calls 'metamorphosis', he points to a freedom in writing which

'… permits the hand to depart slightly from the mental model in order to facilitate the work and frequently also to please the aesthetic taste of the writer' (Gumbert: 1965, p.1).

This covers the differences between diagrams b) and d) in Gilissen's figure above.

Gumbert points out that if such a modification occurs often enough, readers and writers grow accustomed to the new shape and the common mental conception of the letter is subtly changed. Thus, a whole new genealogy of forms may develop, all quite different in external aspect from the antecedent form, while the core *ductus*, the basic pattern of the minute movements to which the muscles of the hand have grown accustomed, remains constant.

In Gumbert's second type of change, which he calls 'metanalysis', the shape of the letter stays unchanged, or at least little altered, but the *ductus* used to achieve it is new. In 'metanalysis', unlike 'metamorphosis' which changes the form in its appearance, the writer finds a quicker, more convenient way to create the same form by changing the direction of one or more of its component strokes. This is commonly the result of a quest for comfort and optimal ease in achieving the desired form. The same phenomenon was also recognised a little later by Marichal, who stressed the importance of aesthetic considerations (Marichal: 1967/8, p.301).[162] The new movement was encouraged, he said, by the change in mental attitude of those who frequently read and wrote it towards a shape gradually conditioned by its habitual *ductus*.[163]

Metanalysis explains the difference between diagrams d) and e) in Gilissen's figure above. The same *ductus* gives rise to altered forms and these forms in turn are then realised by a new

---

[162] And cf. Mallon: 1952, p.33.

[163] Bischoff, who cites Gumbert, also recognised this type of change but remarked that it was rare (Bischoff: 1979, 1990, p.51, Note 5).

stroke pattern more comfortable to the hand, and perhaps also found more attractive, but
retaining sufficient respect for the earlier form as it is commonly recognised at that particular
moment in history so as for it to be recognisable. The process is cyclical and continuous and
in a manuscript culture it is never complete (Gilissen: 1982, p.310).

Very often the result of either metanalysis or metamorphosis is that for any given letter there
are now two distinct variants for it in the script repertoire. This phenomenon is amply
illustrated in Casamassima & Staraz's comprehensive examination of script change in Roman
papyri (Casamassima & Staraz: 1977). The variant forms of <e> shown in the figure below
are all taken from Latin papyri of the early Imperial era. They show, Casamassima & Staraz
argue, broadly speaking the same *ductus* at base and their differences in form are to be
accounted for by their varying speed of execution.

Figure 10
(reproduced from Casamassima & Staraz: 1977, p.22, Fig. I. 1).

In their Figure I.2. shown below, the two variant <e>s are taken from documents written
contemporarily with each other, and each exemplifies the choice made by its writer.
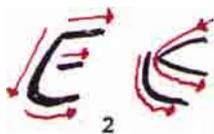
Figure 11
Reproduced from Casamassima & Staraz (1977, p.22, Figure I. 2).[164]

Each represents <e> but one form has undergone a metanalysis. From this point onwards, each of these forms can potentially develop along its own, quite distinct trajectory and compete against alternative forms to hold its place in the common repertoire of letter-forms.

Casamassima & Staraz give several illustrations of the development of variants for other letters of the alphabet, two for the letter <m> for example, as reproduced below, the second of which is probably written in one continuous stroke while the first involves a pen-lift at the base of stroke 1.

Figure 12
Reproduced from Casamassima & Staraz: (1977, p.23).[165]

Again, two distinct forms coexist (as defined by their difference in *ductus)*, each of which follows its own development patterns henceforth (Figure 13).

Figure 13

Reproduced from Casamassima & Staraz (1977, p.23)

In letter change, there may be a long twilight period where the principle of the form remains unsettled and hovers between two alternatives or is difficult to interpret as either one or the other. There are no laws that say in the long run one or other form will either dominate or disappear, or that give a predictable timescale within which this can be expected to happen.

---

[164] Strokes marked in red by myself.
[165] Strokes marked in red by myself.

Changes do not all happen at the same pace for each letter nor in the same way. A palaeographer can recognise the existence of thematic conditions for a given change but cannot gainsay that a given change will or will not actually occur.

Over time, there may evolve such a profusion of variants that choices start to be made between them which lead to the exclusion of some. Additionally, variants which differ only in speed of execution can occupy the same position in the system for a sustained period as equivalent, rather than opposed forms. Variant forms can be used indifferently, in synchrony, and even together in the same document. This, according to Cassamissima & Staraz, is common in the first and second centuries of the Roman era, when forms with minor divergences present themselves for several letters (1977, p.23). In the sections to follow I will examine some of the Dura papyri from the point of view of changes in letters over the c. 50 years that in the early third century the papyri span.

Speed, I have shown in this section, is not a sufficient argument to explain letter-form change. Gilissen's description of *ductus* is helpful in accounting for any alterations and in the decipherment of difficult scripts, but it was limited by the fact that it posited the single determining factor of change in writing to the writer's speed and his search for an easier execution. Gumbert added an aesthetic dimension but he too acknowledged that speed was important. Cassamissima & Staraz also attribute all they discuss to Roman scribes' need to write fast. Cencetti stressed the contaminating influence upon each other of scripts at either end of the formal: informal continuum and this is another factor contributing to form change. But however we account for change in a letter, its essence as a letter, as a line or a composite of lines left by a writer, is an extremely slippery phenomenon to capture and define.

Hans-Joachim Burgert, a professional calligrapher, debated in a short section of a longer article this very point. What was it precisely that in his lettering classes he should teach to his students and what was the 'right' letter-form he should encourage them to write?

> 'Did the person who invented <e> really invent the form <e>…: did they really show
> us the exact form of <e>, the way it had to look?' he asked.

After discussion, he concludes that 'there is nothing else but a principle <e>'. This principle can be best expressed not in a pre-given shape or form, but in a sentence such as

> '<e> is composed of three horizontal lines and one vertical line' (Burgert: 1996, p.10).

The liberation that his approach entails is expressed, he says, in an individual's handwritten graphs and is the reason that s/he adapts them with such ease to suit the particular need. The concept of <e>, as Burgert prefers to teach it, is not a uniform or perfect letter but instead it has, as he phrases it,

'a quasi-intellectual basis' (Burgert: 1996, p.10).

And Gilissen also, returning to the palaeographic stage in 1991 to give a conference paper, seemed a man entirely dissatisfied with the adequacy of an explanation of letter change based simply on *ductus* and its effects. He made plain that, in his opinion,

> 'most certainly, the *ductus* does not totally exhaust the subject; it is not the endpoint of
> our research.' (1991, p.338).[166]

He had already in 1973 added 'style of writing' to Mallon's list of principles that govern the form of writing, and later in 1991, he was concerned to stress the importance of the

---

[166]*'Bien certainement, le ductus… n'épuise pas totalement le subject; il n'est pas le point final de notre recherche.'*

integration of the form of writing with the society that used it.[167] He quoted with approval the

Marxist theoretician Hajnal, who believed that writing evolves as a result of its continual

reciprocity with society (Gilissen: 1973, p.31).[168] This a concept of the form of writing as a

reflexive form that mirrors the world view of its users, shared by both Gilissen and Burgert,

which aligns the field of palaeography more closely with say, socio-psychological

anthropology, than with Mabillon and de Montfaucon's documentary diplomatics. In this

kind of world graphic rules are but one strand in a most complex process.

---

[167] *'style de l'écriture'.*
[168] *'Ce n'est pas de l'écriture que l'écriture a évolué toujours plus avant… mais par la reciprocité continuelle avec la société.'*

9.   SCRIPT STYLES AT DURA

9.1   VARIETY

If Mallon had been particularly lucky to find a Roman document in which both formal and informal alphabets appeared, known from contextual evidence to be contemporary with each other, and fit for comparative purposes (see 8.2 above) the same fortune also befalls the student of Dura-Europos. The three juxtaposed alphabets in Plate 18 are taken from Dura papyri numbers P.Dura 54, P.Dura 98a and P. Dura 125. They show letters used in a formal, less formal and a personal context. Each of the scripts has adopted in the form of its letters certain particularities in respect of which it can be differentiated from the other, and which, in each case, are an evolutionary response to the style's habitual and customary use in a limited context and by particular types of writer. The parameters of the context define aspects and tendencies of the letters themselves. A few preliminary remarks concerning each style are made here.

The alphabet of the *Feriale* (P. Dura 54) is, like PSI XI 1183a. above, a formal display script. The purpose of the document is unknown, but it contains a calendar of festivals and feast-days. It was very probably, at least at one time, a functional document and written and displayed in order to be seen. The display accounts for the particular choice of script used. Its 'capital' letters are easily legible and their majuscule 'case' reflects the cultural status that the content of the document has. The letters in its alphabet were constructed relatively slowly, with a *ductus* very similar to that used in PSI XI 1183a.: in separated strokes with frequent pen-lifts and serifs on stroke terminals.

The second script in the illustration is that of P. Dura 98, an administrative document that contains a list of soldiers' names, presumably members of the Palmyrene cohort. It is probably a type of roster similar in function to the larger, recognised examples of troop roster, P. Dura 100 and 101. The script is a connected series of lines, rapidly-written and the writing has a dynamism and movement that is in complete contrast to the monumentalism of P. Dura 54. Its 'running' hand is typical of that used by the Palmyrene clerks in the documents they produce for the army's internal administrative purposes. Its particular script-style has been termed the 'clerical hand' by Welles (TEAD-V, pp.56-57) and by Marichal 'bureaucratic cursive' (ChLA-IX, p.18).[169]

The third script on the plate, taken from P. Dura 125, is used here for purposes of comparison only. It shows what is very probably the hand of the tribune Laronius Secundianus and is from his subscription at the foot of a legal document (dated c. 235 CE). It is an example of the personal handwriting of an officer based at Dura at this time. The limited number of letters it preserves are interesting in themselves and worthy of greater study, especially since examples of the personal hands of soldiers, and perhaps particularly of officers, are rare in Latin papyrological evidence in general. It is a small piece only, but provides enough evidence to point up a contrast between this much smaller, less stylised personal handwriting and the scripts written by the professionally trained clerks in the *officium*. This is a point to which I will return in 9.2.

The scripts in the Plate represent three of the writing styles used at Dura, but there are also others. For example, there is a particular script used for the name of the recipients of letters and known as 'address script' which is found on the verso-side of the main texts in an elongated 'capital' form, the name of the correspondent underneath it written in strangely

---

[169] '*cursive bureaucratique*'.

loose, cursive letters. There is also an elevated 'epistolary' style used for the correspondence with dignitaries of high-ranking officers, and a yet more prestigious 'chancery' (P.Dura 59; TEAD-P&P, p.56).[170] Robert Marichal, particularly in his work editing the ChLA series, described and categorised the script of military papyri in terms of a context-based hierarchy in the writing styles well-illustrated in the Dura papyri, such that

'when one has scribes capable of doing it, one does not write a letter in the same writing as a report or account for internal circulation'(ChLA-IX, p.16).[171]

In military papyri in general and in the Dura papyri in particular, Marichal's three differentiated cursive styles: 'chancery', 'epistolary' and 'bureaucratic' can be isolated. All these three scripts are labeled and illustrated in those volumes of ChLA for which Marichal was responsible.[172] These terms do not describe, he emphasises, sharp morphological differences in the letter-forms so much as nuanced differences in their overall stylisation (Marichal: 1968/9, p.272).[173] The uses of the 'bureaucratic cursive' (the 'clerical hand') is consistent with the lower hierarchical position of the style in that all the camp's internal documentation is written in it. This is a point he also applied to the Bu Njem *ostraca*, and he observed too that the scribes at both the Bu Njem and the Dura camps used effectively the same clerical hand for their internal documents (Marichal: 1992, pp.18-45; see also Plate 14).

Welles also recognised the stylistic hierarchy in the Dura scripts (although he did not distinguish a specific 'epistolary' hand from that he called 'chancery'). Both Welles and

---

[170] See for discussion of the higher grade diplomatic hands in late antiquity (Kresten: 1964; Kresten: 1966) and also for facsimiles of those of a far later period (Jenkinson: 1915).

[171] *'...que, lorsque l'on dispose, naturellement, de scribes capables de le faire, on ne fait pas écrire une lettre dans la même écriture qu'un rapport ou qu'un état destinés au service intérieur.'*
Marichal worked for forty years as editor of this series.
See also Marichal (1968/9).

[172] 'Bureacratic' (*'bureaucratique'*) he sometimes alternatively terms 'army office cursive'.

[173] *'Chancellerie', 'épistolaire'* and *'bureaucratique'*.

Marichal agree that the clerical hand is the lowest on the hierarchic script ladder. Probably

the most obvious of the differences between the various script-styles is the relative size of the

letters, those of documents in the 'chancery' style being well over twice the size of the

bureaucratic (in particular those of P. Dura 59). I have not the space to deal with their other,

more specific differences here, but the topic is one that offers much scope for further

palaeographic enquiry. Indeed there are at least five clear varieties of script in use at Dura, all

of which are worthy of much greater consideration. In this thesis I discuss relatively briefly

only the three styles illustrated in Plate 18: the 'capital', the 'clerical' and the 'personal' hand.

These I will turn to in the following sections. In the remainder of this, I make some more

general remarks about Roman scripts.

Very little information exists about how differences in script were perceived by the Romans

themselves, and the scarce mentions of script that there are, are not as illuminating as one

would like. One, a description given in Diocletian's Price Edict (an imperial directive for the

regulation of prices for goods and services empire-wide issued in 301 CE), refers to three

distinct varieties of writing (Graser: 1940, VII, 39-41, pp.342-3). All three are professionally

produced by scribes and are distinguished from each other by the prices that the scribes are to

charge for producing them. For the most expensive of the three, the script 'of the first

quality', scribes were to charge twenty-five *denarii* per hundred lines; for the script of the

second grade, twenty *denarii* per hundred lines and for the third, lowest grade - perhaps a

notary's script or as used for notes, accounts and memoranda on booklet-type documents and

other materials - ten *denarii* for the same amount of writing.[174] No other description is given.

The differentiation in cost is presumably based primarily upon the speed at which the scribe is

---

[174]'*scriptori in scriptura optima versus n(umerum) centum: d(enarii) XXV/ sequentis scripturae bersuum n(umerum) centum: d(enarii) XX/ tabellanioni in scriptura libelli bel tabularum in versibus n(umerum) centum: d(enarii) X*'.

expected and is able to produce them, and as we have already seen, the speed at which the scribe writes inevitably conditions the appearance of the script he produces. This information does not take the enquiry very far, but it might be possible, were one to push the point, to gain some understanding of the relative earnings of ancient scribes by experimentation with modern ones (Gullick: 1995; Gumbert: 1995).

The twenty-five *denarii* script would no doubt have been generally more carefully and formally written than the others, and also more attractive in appearance. It would have been used for more prestigious documents, those that contained statements of authority and consequence and emanated from powerful offices. We know it was important to the Romans that a document should reflect the status of its originator in its high quality script, and this is exemplified in many of their finer Roman manuscripts and better quality inscriptions. The scribes able to produce such scripts would also have been sought after. The emperor Constantine is known to have commissioned the making of 'fifty copies of the divine scriptures' which he required specifically to be written on well-prepared parchment by copyists

> 'most skilful in the making of accurate and beautiful writing' (cited in Gamble: 1997, p.79).

At the bottom end of the scripts in Diocletian's prices scale was the script produced by the wax-tablet writers (*tabellaniones)*. These writers took quick notes and drafted documents at speed. These men had far less cause to worry about wide legibility, for the text was often intended for the use of a single private reader, either the writer himself (say for the purpose of later making a fair copy), or for his master already familiar with his man's handwriting. The scale of the prices indicates that the range of scripts would become generally more cursive,

those at the cheaper end, because they are written at far greater speed, would have joining

strokes (or ligatures) written both between adjacent letter-strokes of individual letters and

between adjacent letters in the line of writing. They would be consequently relatively less

legible. But all of the hands mentioned in the Edict, because they are professionally-written,

are different in kind from the personal handwriting of non-professionals (such as that in P.

Dura 125 on the plate).

The other distinction between scripts noticed by the Romans of which we have knowledge

was recorded somewhat later in the Theodosian Code ('published' in 438 but compiling laws

issued earlier). The relevant text is an Imperial mandate issued on June 9 367 CE. It was

addressed to Festus, Proconsul of Africa. In summary, it declares that the emperors

(Valentinian and Valens) have noticed that the African proconsular chancery has begun to use

in its documents '*litterae caelestes*'. However these letters are properly reserved for the

exclusive use of the scribes of the Imperial chancery. Henceforth therefore, the proconsular

dignitaries are to use in their documentation only '*litterae communes*' (commonly-used

letters?). This is to prevent the possibility of forgery in the Emperor's name, for no person

has the right to appropriate the emperor's style, either publicly or in private (*Cod. Theod.* IX,

19, 3).[175] The '*litterae caelestes*' then, were recognized in the mid fourth century as

> 'the sign of authenticity which all documents emanating from the Imperial chancery
>
> shared' (Mallon: 1948: 1952, p.24).

---

[175] '*Impp. Valentinianus et Valens AA. Ad Festum proconsulem Africae. Serenitas nostra prospexit inde caelestium litterarum coepisse imitationem, quod his apicibus tuae gravitatis officium consultationes relationesque complectitur, quibus scrinia nostrae perennitatis utuntur. Quam ob rem istius sanctionis auctoritate praecipimus ut posthac magistra falsorum consuetudo tollatur et communibus litteris universa mandentur, quae vel de provincia fuerint scribenda vel a judice, ut nemo stili huius exemplum aut privatim sumat aut publice*'.
For Tjäder, fear of forgery is the reason that archaic-style letters in chancery hands continued to be used to write the first lines of imperially-issued deeds well into Late Antiquity and the Early Medieval period (Tjäder: 1982).

No-one else, whatever further differentiations there were among scripts, could use letters of such high prestige.

There is nothing else to my knowledge in the contemporary surviving literature that gives any further information about Roman professional scripts, but there are one or two remarks about the quality of personal, as distinct from scribal hands (Desbordes: 1990). The early remark from a play by Plautus about a slave's poor, effeminate handwriting is well-known (*Pseudolus*, 21–30, cited for example in Clark: 2001-2). The emperor Augustus himself is said by Suetonius to have personally trained his grandsons to imitate his own hand (*Aug.* 64).[176]

In earlier times, handwriting was probably a skill that people were proud of. In Roman days too, correspondence should, particularly in cultured society, if at all possible, be written by the hand of the correspondent themselves rather than by a clerk (McDonnell: 1996).[177] Quintilian emphasizes the importance of spending time acquiring a competent personal hand (*Inst. Or.*, 1.28). He stresses the utility of handwriting and describes it as aiding progress in the literary and rhetorical arts as well as making the possessor capable of responding to the demands of the norms of polite behaviour. Remarks in Cicero's correspondence show that he cared about the appearance of his letters and the intelligibility of his handwriting (*Letters to Quintus* 21, 19; *Letters to Friends* 185, 1). However, aside from this scattered assortment of information to which other similar small glimpses of Roman attitudes to writing could be added, the theorist of Roman script must look to the scripts themselves for ideas on Roman perceptions and preconceptions about handwritten documents.

---

[176] For complaints against small handwriting by Seneca (*Dial*. 4.26.2; Lucian, *Vit. Auct*. 23).

[177] *Interestingly, this custom does not, from papyrological evidence, appear to have been followed by senior army officers, although one or two letters amongst the Vindolanda tablets may have been written in the personal hand of Flavianus Cerialis, the camp prefect.*

A question that soon arises when considering the professional hands in which the majority of the Dura documents are written is how best to classify the writing technique of their scribes. I am tempted to say that specific script-styles written by well-trained scribes are calligraphic. The term 'calligraphy' implies craftsmanship certainly, but it contains an aesthetic judgment which, from a historical perspective, is hard to define. If, as Gaur writes, the calligraphic is an expression of harmony it is also

> '... an expression of harmony... as perceived by one particular civilisation' (Gaur: 1992, p.164).

Therefore it is difficult to stand outside the particular era and social world that produced a script and make any kind of aesthetic judgement on it. Aesthetic qualities are in any case hard to pin down and are often dependent on the attitude in which a piece is framed or presented (Berger: 1972). Some attempt at judgment, however, must be made.

Morphological and stylistic varieties of known script-styles, then, are related to their cultural contexts. They are also far more precisely restricted in their form than are personal handwriting styles. If a specific high-grade script-style and a free personal handwriting are visualised as sitting each at alternate ends of a scale of formality, here illustrated by P. Dura 54 and P. Dura 125 respectively, it should be apparent that the writing style of P. Dura 98 lies somewhere between the two extremes.[178] P. Dura 54 is not a script that needed to be produced as quickly and as habitually as that of P. Dura 98, to judge from its appearance, would have been. P. Dura 125 is a hand that was probably used regularly and rapidly but that has no scribal finesse. Any analysis of P. Dura 54 and 98 must also try in some way to assess the extent to which these two scripts, trained and informed as they are, are differentiated from

---

[178] Tjäder touches on some of these points in (Tjäder: 1977).

the personal handwriting of 'amateurs' like the tribune who wrote the subscription in P. Dura 125. Some awareness of this is an essential prerequisite of style definition.

9.2   TRAINED AND UNTRAINED WRITERS

In this section I consider the chief differences between the handwriting of clerks and that of ordinary lay writers. To begin, a comparison with a similar situation in another era may be helpful. Thus, in seventeenth century England writing was not universally taught, and those professionals who needed to write in the course of their work (doctors, clergymen, businessmen etc.) learned to do so for their specific purposes, while many others never bothered at all. For the professional clerks, learning to write meant mastering several script-styles and avoiding others that looked

> '... inappropriate for one's social station, profession or gender. The counting house and commercial world stressed hands that were round, simple and clear; a legal clerk would have to master a variety of court, chancery and engrossing hands, and men of leisure affected a distinguishing carelessness in their writing' (Clayton: 1999, p.11).

Clerks similarly carrying out a functional profession in the Roman administration would have needed to be able to produce a range of script types quite different to the single style of the layman who had a utilitarian personal handwriting. But much of the subtlety of the differences between the two attitudes in the Roman period is undoubtedly now lost to us. Clayton goes on to say of the seventeenth century that the ability to write and the type of script one wrote set up segregating social boundaries that were

'marked and maintained with tell-tale signs that shaped the kinds of messages writers could write and the way in which their communications would be read' (Clayton: 1999, p.12).

We have some few vestiges of this idea left today – the handwritten envelope, for example, might be scrutinised for clues in the writing style - but most has fallen away.

In aristocratic circles in the Roman period attitudes to handwriting were perhaps similar to those of English gentlefolk prior to 1936. Writing in that year, Flower bemoaned the loss of an earlier era in which 'the ability to write was considered an achievement'. In that era, because writing was not something that everybody had, or could do, that set it apart as something special. He remarked too, probably with good reason, that the admiration held for writing as a craft had declined with the rise of public education 'when every child was taught to write' (Flower: 1936).

With respect to Greek learners of writing in antiquity, Cribiore notes the evidence that some teachers were keen to encourage a good handwriting in their students. She even finds evidence of a schoolboys' competition for the 'best hand' (Cribiore: 1996, pp.115-6). We have to guess today to imagine the sorts of hands that might have won such a competition. They would obviously share legibility and clarity. Probably the letters were well-formed - evidence that the stroke *ductus* had been carefully learned and was well observed. But the aesthetic quality they shared is harder to imagine.

In her book, in which she examines learners' writing in Greek from Roman Egypt, Cribiore made four differentiations between the categories or types of writing into which their specimens fall. These are the 'zero-grade hand', the 'alphabetic hand', the 'evolving hand' and the 'rapid hand'. The distinction is based on their scribes' respective experience in

writing as she sees it (Cribiore: 1996, p.112). Unfortunately, her descriptions of each are rather vague and comparison of them with the photographic plate (when this is supplied) often does not help elucidate her meaning. Nonetheless, since they are germane to my own exercise in this section, I will paraphrase them below (and hope I do not too much injure Cribiore's intended meaning in doing so).

The least skilled of the four, the 'zero grade' is that of the beginner who 'does not yet know the letters and sometimes confuses them or writes them in peculiar ways'. This might be thought fairly easy to recognise, but yet I find it sometimes hard to agree with her classification.[179] The same confusion persists, I find, over her examples of the second, the 'alphabetic hand'. This type of writing she describes as that of a learner who writes his letters 'accurately and without hesitation but who has not yet developed hand-eye coordination' (Cribiore: 1996, p.112). Juxtaposition of the work of this type of writer seems, in my opinion, to throw up confusion on more than one occasion both over the distinction between this type of hand and the 'zero grade hand' and also between this hand and her third type, the 'evolving hand'.

The 'evolving hand', the most common of the four according to Cribiore, is that of a pupil who writes daily and often. However, this seems to be something of a catch-all category that she finds difficult to use consistently. For example, she attributes the clumsy letters of her No. 111 (P. Lund.VI 11) to a thick pen, which may well be the case, but if a scribe does not know how to tailor his reed, this is surely a sign in itself of a certain incompetence? On the page facing the photograph of No.111 is her papyrus No. 123 (Mon. Epiph. II 621). This

---

[179] One papyrus, which she describes as being written in this hand, shows two styles, one in a 'capital' form and one cursive (P. Oxy. II 285 = Cribiore No. 131). Both are somewhat untidy with rounded letters and this similarity may indicate they are written by the same writer. If that is the case, this indicates a relatively advanced writer. His joined hand in particular shows both fluency and confident knowledge of the individual letterforms.

hand she describes as 'alphabetic'. Yet this writer, who is clearly suffering from trying to write against the fibres of an extremely coarse piece of papyrus, has arguably approximately the same standard of writing as the writer of No.111.

Her fourth, and highest, handwriting type is the 'rapid hand', that of an advanced student. This is obviously a fluent hand but, I would argue, her examples show very often, not that of a student of writing at all but the personal hand of someone who has been taught to write and no longer needs to worry about the form of his script. For example, her No.221 (P.S.I. IV 280) is a very untidy, unregulated hand and, to judge by the text, either that of a student of poetry or an adult with an interest in it.

Cribiore is in difficult territory. A scientific apparatus capable of capturing differences between styles of personal handwriting remains a lively and unresolved problem for modern handwriting-recognition computer scientists, who would surely, if it was easy to do so, have by now managed to devise one. An automatic handwriting programme would obviously be highly desirable as a piece of computer software for which there would be a large market. But handwriting is a natural phenomenon written by human beings, not machines, and subject to a vast range of apparently arbitrary conditions and influences. Historically speaking, as a minimum introductory attempt at script categorisation I would suggest that we need to set up at least a list of principles which the differences between 'professional' and 'amateur' writers can be captured.

E.A. Lowe (known notably for being the editor of the series of facsimile samples of pre-ninth century manuscripts **Codices Latini Antiquiores**) was a man who spent most of his life looking at examples of the trained handwriting used in bookscripts in particular, but he was also interested in more mundane uses of script. In an article on English handwriting (with a

contribution by Roger Fry) he discusses the contrast and the salient differences between a layman's personal hand and those of professional experts. Noting that clerks can of course write in both styles, he describes one aspect of the distinction between the abilities as resting upon a different kind of performance (Lowe: 1926, p.72). This is an interesting idea which seems to include the idea that a scribe has – and which I tried earlier to express – of context and of a script's fitness for purpose.

Lowe himself appreciates in a personal handwriting its expression of character and consequent greater freedom from imposed restriction. Personal hands contain a much higher proportion of idiosyncratic elements than does the professional's recognised standard style. He objects to the uniform appearance of standard style scripts as written by trained professionals for a routine purpose and argues that the stamp of the school or the training is *so* strong in professional writing that different writers become hard to distinguish one from the other.

> 'It is as if [the hands] were in a bondage', he writes, 'which forbade, or at least hampered and disguised individuality; or like a volume of essays by different authors who are all dominated by the same dogmatism'(Lowe: 1926, p.77).

As an illustration of this we will see in Section 10 below that there is an identity between the individual instances of the 'clerical hand' at Dura which betrays it as a relatively rigid, institutionalised hand in which idiosyncrasy is restricted.

A taught and known 'style' for Lowe lacks character, and he does pinpoint here a truth about established scripts. Personal hands generally suffer from far fewer restrictions and exhibit as a consequence much greater freedom than do professional examples. We might also guess that they represent writing in a form closer to that which would have been taught in the

earliest writing lessons, wherever these may have been received in the particular case, since they are untainted by further schooling in script specifications and details. In this sense they are closer to what Cencetti called *'scrittura usuale'*, and Mallon *'l'écriture commune'* (with the designation *'classique'* or *'normale'* depending on its date) (Mallon: 1952, pp.45, 105-6; Cencetti: 1966, p.15). This idea however needs some clarification.

Cencetti, who deals with the concept in a little more detail than Mallon, expresses *scrittura usuale* as essentially an abstraction. In a concrete sense it does not really exist and it is something akin to a Platonic ideal (Cencetti, 1997, p. 53). Every writer knows in broad terms what a written alphabet (in his/her era) looks like and each individual's writing is an expression of a common understanding, of a shared underlying ideal model or schema. The abstraction rests in the commonality.

To help elucidate his meaning, Cencetti draws an analogy with the designation used for a language, say 'French', to refer to the broad abstraction that is the French language. Morphologically, syntactically, lexically each individual has his/her own language. In fact, there is no one entity or example of French spoken or written, that entirely expresses and encapsulates 'French'.[180] Likewise, there is something constant across the great variety of writing that everyone who reads or writes recognises, but yet which resists definition.

'Scrittura usuale' for Cencetti refers (as it does also, broadly speaking, for Mallon) to that complex of written forms which commonly occur in the script of all writers of a given time and place; forms which are implicitly recognised by the community of writers and readers (Cencetti, 1997, p. 59; also see p. 160 above). Because they are produced naturally, they are characterised by their distinction from those 'canonised' and therefore artificial forms that

---

[180] We might today refer also to the structuralist linguist de Saussure's similar distinction between *'parole'* and *'langue'* (see now de Saussure, F (2002), **Écrits de linguistique générale**, Paris, Gallimard).

belong to the acknowledged styles written by scribal and clerical professionals. Professionals also learn '*scrittura usuale*' in their early stages of writing, but professional writing training overlays that initial teaching with a repertoire of regulated script-styles, each of which adapts and develops the underlying model pattern for its own particular purposes and in its own way.

Behind the entire complex of forms belonging to '*scrittura usuale*' then, are the abstract models of each alphabetic letter, to which or from which it is possible to relate or derive all the forms which may happen in a rapid execution. '*Scrittura usuale'* is thus open both to the naturally-occurring graphetic changes that are a result of the action of writing itself ('*tendenze grafiche*' for Cencetti) and to the influence of external factors. The effect of each and either of these is to induce recurrent modifications of the letters, characteristic to all, which thus become typical. Analogous changes occur throughout the alphabet and thus, little by little, the ideal abstract schema changes in the mind of the writer. The history of writing is thus a continual modulation of its own form.

In Section 8 above, I considered at some length the idea that the function of a piece of writing conditions its appearance such that script varies according to its context, who is writing it and for what particular purpose. Contexts too change their parameters as the years and seasons pass. Some of these are individual, idiosyncratic and probably temporary; others are broader socially-shared regularities that can also have lasting effect. As I have also shown, Roman letters of all shapes and sizes are based upon and derive from a single underlying *ductus* or stroke pattern; one pattern for each letter-form. When they are taught, they are taught with a particular *ductus*. Thus I understand *ductus* to be the underlying shared feature in the abstract model of the alphabet to which Cencetti refers. The spectrum of possible forms is based on the known *ductus* pattern which is recognisable to all who have been taught to write.

Here, it is relevant to introduce a distinction between two broad types of writing all too briefly described by Armando Petrucci (1995, pp.61-2). He is examining certain sixth century Italian books which are not relevant to the purpose here, but in his discussion he distinguishes between what he calls 'taught' and what he calls 'imitated' scripts. The difference between these rests, crucially, on the knowledge of the *ductus* of the letters that their respective scribes have and that becomes apparent on close inspection of their work.

Writing teachers will generally – as Quintilian and Jerome advocate – teach less the form or the shape of the letter than its structural assembly: the progression of its composite letter strokes. While they may indeed and often do, write out model alphabets for their students to follow, they combine this with an insistence on the proper stroke number and sequence. These 'taught' scripts are to be distinguished from the productions of scribes or writers – such as are the book-scribes who are Petrucci's particular focus in his paper – who

> 'perpetuate[d] without interruption an ancient graphic type that itself was based on stylistic canons formed much earlier' (1995, p.61).

These archaising scribes had no living teacher, and they learned to write earlier styles solely by imitation of the letters they found in old codices. These letter-forms they repeat at length, and thus

> 'achieve[d them] at times by a tracing that may not be (and thus almost never is) the norm of the model' (Petrucci: 1995, Note 2).

They followed what they thought they saw, and thus fell into error (see Figure 5 for a similar phenomenon). Had these writers been traditionally taught, they would have followed the pattern of the strokes. Petrucci's observation may be helpful also in the distinction between

individual and professional hands I am trying to emphasise at Dura. We should certainly

expect professional writers to have learned the *ductus* pattern of their letters most thoroughly.

If this turns out not to be the case it may indicate they have not been properly taught, for

whatever reason.

Little non-professional writing survives in the papyri from Dura-Europos, but there are a few

legal documents that have been signed and certified, as is the Roman custom, by one or more

witnesses. An overview of the signature and the few letters I have been able to extract from

each are displayed and set out in Plate 19.[181] Hands 5, 6 and 7 as labelled are each taken from

P. Dura 26 (a deed of sale dated 227 CE); that from P. Dura 30 is from a marriage contract

(dated 232 CE), and the subscription of Laronius Secundianus from P. Dura 125 (dated to

235) has already been mentioned.[182] Most of these are writers at an early stage of

competence and none is here classified 'professional'. Some brief comments follow.

Most immediately striking are the differences between them which seem collectively far more

prominent than their likenesses. Hands 5 and 6 of P. Dura 26 in particular are irregular also

within themselves, the letters being most uneven in size. Such are probably, as Cribiore

noted, characteristics that derive from imperfect skill and co-ordination (1996, p.102).

However the letter-forms in Hand 5 seem individually quite well formed. They are separated

from each other on the whole, but an attempt at joining was made between <d> and <o> in

'Theodorus'. If we hypothesise that the letters are taught as isolated forms in the earliest

writing classrooms then this writer would seem to be at a slightly higher stage.

The same attempt to join letters also occurs in Hand 6; notably the join between <n> and <i>

shown in the detail, where the writer could have separated these two letters. In fact the writer

---

[181] A detail only, rather than an overview of P. Dura 125 is shown.
[182] On line at http://beineke.library.yale.edu/papyrus/oneSet.asp?pid=DP%205.

here introduces an unnecessary stroke to join the two letters which might be evidence that he has not been trained to join these letters but is improvising a way by which he can do so. This is a point I will have particular cause to discuss in more detail in my consideration of the 'professional' clerical hand which follows below. In the later consideration (principally in 10.2), it will become clear that the ligatures used in the professional hands are the outcome of careful training and of consistent practice.

Returning here to the scripts produced by basic hands, in general both exhibit other features that Cribiore characterises as typical of basic hands (1996, pp.102-118). They show an irregular (as opposed to uniform) selection of different letter-forms and an uncertainty over the choice between them. Hand 5 uses two forms of <d>, Hand 6, a Greek form of <m>. Generally also, all the hands in this group lack fluency. This is most obviously the case for Hand 7 and this writer seems to know only a set of upright forms somewhat reminiscent of 'capital' letters. Although this may indicate these are the forms taught in the earliest stages of writing, this remains far from proven and would be a fruitful avenue for further research. Also, and interestingly, the writing of all the examples is relatively upright in comparison to the clerical hand. The slope of writing is of course conditioned to a considerable degree by the speed at which it is written.

Laronius Secundianus's hand (P. Dura 125) is by far the most fluent example of the four, and fits with my earlier description of him as an educated man who was accustomed to writing quite commonly as part of his duties as a commanding officer. Interestingly, however, his hand also shows some uncertainty over the correct forms of some of the letters. The letter <a> is a particularly obvious example of this and he has at least four different forms for it (a selection from lines 10, 11 and 14 shown in the detail illustrated) – one of which (that in line

10) certainly appears influenced by the form of Greek *alpha*. The letter <b> as he uses it – unfortunately only once – has a most interesting *ductus* in his hand and is one I will have occasion to revisit in later chapters. Strangely, this letter may in his hand represent an 'imitated' rather than a 'taught' form, but other aspects of his writing seem to show evidence of teaching. The joins between <ti> in line 9 and <um> in line 10, for example, are standard ligatures that often occur in the 'clerical hand'. However, the join <co> (line 9) is quite awkward and is presumably one the writer himself had devised.

The above observations are restricted, particularly because of the paucity of the evidence. In my next section I turn to the observation of the characteristics of trained hands, where the evidence is more plentiful.

9.3   THE TRAINED HAND: AN EXAMPLE

The surviving evidence shows that much attention was paid to the transmission of writing styles and letter structure throughout the Roman period. Indeed, had proper instruction in the standard scripts not been prioritised in the *officium* not only would debased and widely differing forms have sprung up in different places but the production of the standard repertoire of military script-styles would not have been possible. The styles of writing in the Dura papyri demonstrate, in their fluent and regular letter-forms as well as in their content, that at least some of the clerks who wrote them had been thoroughly trained.

Phang has maintained that the first/second century clerk was 'relatively unprofessionalised' because some clerks went on to take up posts involving combat duty. However, combat duty does not invalidate a claim for their prior training and resulting professionalism in the writing offices (Phang: 2007, p.297). Clerical training certainly improved during the evolution of the army over the first three centuries as she admits. The objection could nonetheless be raised

that the word 'professional', as I shall use it, is not properly applied to Roman soldiers, but yet I have failed to find another that better expresses my meaning. A 'professional' is one who is trained to carry out the work in which he is skilled, for which he has been trained and by which he habitually earns his living.

A professional commonly has a serious attitude towards his work and regards himself as being at least in some sense an expert in it. There is no necessary stipulation that he be not also paid for or carry out other work. The clerical soldiers in the Roman army fit this description, for their trained script-styles reveal their level of craftsmanship. Crafts, as Lowe wrote,

> '... were carried on by tradition and worked in schools or guilds, and perfected by the originality and competition of the workmen' (Lowe: 1926, p.71).

In this and the following sections, I take the example of the 'clerical hand' as it occurs in the Dura-Europos papyrus corpus to illustrate my arguments. It is not, I insist, a personal handwriting, and neither was it produced by amateur writers. The papyri written in the clerical hand exhibit collectively a cursive, fluent script written at speed, which is of such a form it remained legible to those familiar with it even when it was rapidly written. The fact that the Dura documents were functional in the unit's daily activities is sufficient illustration of that. This speaks in particular to a script that has had thought given to its design and to its development over time (see Plate 20).

The 'clerical hand' is a response to the army's increasing demand for a legible, and in particular a rapidly-written, functional script. Speed was important for the military was swimming in its ever-growing paperwork on which it depended for the proper conduct of its most basic functions. The script had also to be legible and coherent and to carry its own

particular and recognisable aesthetic stamp. The Dura clerical hand has strong letter-forms which were written very fast but can still (in their context) be read and were read by those who were familiar with them and of whose culture they are a product.

An analogy can be drawn between this Dura script-style and its society and that of the fourteenth and fifteenth century humanist scribes. The humanists were responding to a similar need in their period. For Flower, the beauty of the letter-forms in the humanistic minuscule cursive style – a well-known and still much admired school of writing - lies in their 'simplicity and strength'. The forms are so structured that, once mastered, they keep their shape well and permit little deterioration even when they are written at speed. This was a deliberate aim of the script designers, and they were the writers themselves (Flower: 1936, p.31).

The aesthetic appeal of the humanistic minuscule lies in, according to Fairbank, its 'right methods of penmanship' (Fairbank: (1932) 1948, p.12). He also lists as important elements in a good script 'a harmony or unity compounded of neatness, orderliness, uniformity and homogeneity'. These are characteristics the clerical hand certainly has. That the letters repeat regular patterns, for example, is particularly apparent when holding the script to a mirror (a common calligrapher's trick in order that s/he might see letter shapes and avoid the distraction of reading the text).

The uniformity of the letter-forms is an important property of designed scripts, and the 'clerical hand' exemplifies the fact that thought has been given to the arrangement of the internal composite strokes of its forms such as to minimise writers' difficulty and expenditure of effort in writing them. This gives the appearance of uniformity or – to use a phrase commonly found in calligraphers' manuals – 'the family resemblance' between the letters.

The resemblance represents economy in patterns of movement and it is also, probably as a coincidental effect, pleasing to the eye. Again, its uniformity could not have been achieved by writers not specifically trained to write it and who have not learned this very particular style.

The letters in the alphabet of the clerical hand are made up of different combinations of a restricted set of approximately nine types of pen-stroke (see Plate 21). As Fairbank comments, this kind of homogeneity gives 'harmony and readableness to the script' (1948: p.23). As such, all well-designed alphabets are made up in this way. Such letter design aids fluency and enhances speed since it requires the repetition of consistently similar small movements. It brings with it a problem however, which is that given their common elements, letters may become so assimilated one to the other that they become difficult to tell apart.

> 'A letter', writes Fairbank, '... must be sufficiently unlike all other letters as to be recognised with ease and certainty if it is not to fail of its purpose' (Fairbank: 1932, 1948, p.23).

Thus each letter-form has a differentiation (often very tiny) from all the other letters. Each has its distinguishing feature. We will also see (in 10.3) that for some letter-forms in the clerical hand, particularly in the later years of the Roman occupation of Dura, the distinguishing features of several letters are increasingly difficult to observe.

Generally, the likeness between different letter-forms in any designed standard alphabet is helpful for the scribe, and particularly perhaps for the trainee or the apprentice. In this context a scrupulous and wide-ranging article on the teaching given to scribes in the early middle ages by Bernard Bischoff is relevant (Bischoff: 1966). By looking at miscellaneous little-known early medieval manuscripts, he assembled a collection of apparent writing

exercises which he identified on the basis of certain common and recurrent features. He

noticed that the writing practice sessions they attest to often illustrated repetition of small sets

of similar letter-forms (Bischoff: 1966, p.78). In these, difficulty was gradually built up for

the pupil, the trainee scribe, by gradually introducing additional elements and eventually

mixing and matching these to provide the sorts of conditions that occur in writing out

naturally occurring text. Practice of the whole range of alphabetic forms was also amply

attested to in a large variety of abecedarian sentences.

While Bischoff's material was dated far later than anything under consideration here, there

are also a small number of texts that attest to similar paedagogic activities taking place in

antiquity. There are several examples of Greco-Roman papyri preserving writing exercises

(i.e. literally pen-trials and/or repeated words and phrases) and many of these also show the

presence of teachers correcting the students' work or writing out model letters for the student

to copy. Some such exercises seem to show calligraphic or professional scripts being taught,

and others ordinary utilitarian hands. It is important to recognise the differences between the

two. There are clues at least sometimes in the kind of material that is being written.

Of those that are probably at least approximately contemporary with the Dura papyri, the most

interesting and best preserved is a large sheet of papyrus now catalogued P. Tebtunis 686 a &

b (Seider: 1978, pp.48-49, Pls.VIII, IX= P. Berkeley 1422+1310= ChLA V, 304), now online

with an image at APIS: The Advanced Papyrological Information System (2007)

http://wwwapp.cc.columbia.edu/ldpd/app/apis/item?mode=item&key=berkeley.apis.269&dbg

=1 [Accessed 15th February 2010].[183] Other examples from earlier periods are discussed in

---

[183] See also ChLA XVIII, 660 (see on this Bataille :1956); Wien, Nat. Bibl. P. Vindob. L.15 = ChLA XLIII, 1254; Camb Add MS 5902 = ChLA IV, 234; and P. Ant 1. = ChLA IV, 259.

Dow (1968); Cockle (1979); and see also Bowman (2003, p.89, Note 24). Cribiore treats a wide range of Greek examples (1996 with further bibliography).

P. Tebtunis 686 is a palimpsest, the lower text being an account of some kind which has been practically obscured by the upper texts which, on both recto and verso sides and running both along the fibres and perpendicular to them, are obviously writing exercises. On the recto side of 686b, a line from Virgil's *Georgics* (IV, 1-2) is repeated six times (a snippet from the same text occurs in the first century writing exercise in P. Hawara 24 (Cockle: 1979; Dow: 1968; Turner: 1957). Virgil, whose works were often used in paedagogic contexts, was perhaps used in this case to give practice in fluent writing in an elegant hand. In this case, the hand is a capitular form and one certainly intended to be stylish. Written with a fine reed, it is made in well-separated strokes, letters touch but are not ligatured, and most have more or less carefully made serifs on stroke terminals. In the absence of a serif, however, the small hook formed in the approach to descending strokes is a stylistic feature consistently maintained. The scribe has a light touch which is exhibited in his fine trailing strokes, particularly downwards on <r> and the upward-shooting tops of <c> and <s>.

On the verso, running in the same direction, there are four lines in a sloping cursive hand which has many similarities with the Dura 'clerical hand'. Underneath these, written in the same style as the lines of Virgil on the recto, the words '*nullium mulli pricipeum militem*' (sic) are repeated four times. They are written in the same capitular style as those of the Virgil quotation. The second fragment (P. Tebt. 686a) has more writing in the same hand, this time the words: '*P. uettius comicu Myrtium Myrtilum Myrtil*'.   These lines are also written repeatedly with some slight alternations in spelling and order.
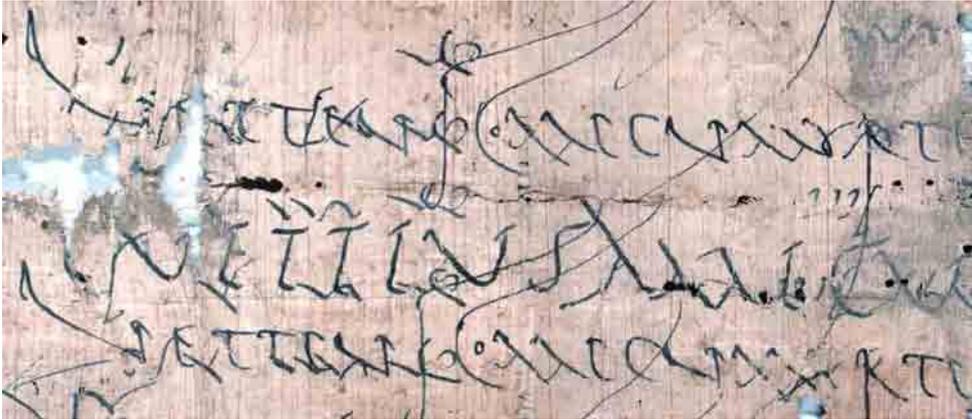
Figure 14. Detail from P. Tebtunis 686a

The detail from the papyrus given above shows the upper script, the flourished 'capitals'. Here, there seem to be two hands at work, perhaps that of a teacher and a student.

Bataille, some years ago wrote an account of another writing exercise, dated probably slightly later than P. Tebtunis 686, which also, interestingly, attests the scribe repeating the phrase '*nullium mulli*' in his practice (Bataille: 1956). He comments that this is not a sentence with meaning, but a selection of letters that have been chosen and put together because of the technical difficulties their combinations present to the scribe. This exercise is obviously intended to give practice in forming, separately, the composite strokes of a selected set of letters and it illustrates how mastery of one particular stroke leads to mastery of not just one particular letter, but of a structural component, a multifunctional building brick in the alphabetic template. This is the value of the particular writing exercise in the papyrus.

Rosemary Sassoon comments on the value of practising letters divided into groups that use the same strokes, commenting that the movements required for the letters become thereby more effective.

'The hand then practises sequences that repeat and reinforce each movement in such a way that it soon becomes automated. To encourage this automation process each small sequence can be practised at speed as soon as possible' (Sassoon: 2003, p.53).

We have of course no way of knowing how fast the scribe of P. Tebtunis 686 wrote out his lines.

Incidentally, on careful scrutiny the penmanship conceals more technical difficulty than is at first glance suspected. The particular kind of writing practice attested to in P. Tebtunis 686 raises the question of when it was in the writing process that the non-integrated parts of the letters were added – at what point in the writing of the 'capital' alphabet were the strokes finished with the ornamental serifs? (On a similar point see Sassoon's work on the timing of t-crossing in modern handwriting (Sassoon et al.: 1989). We cannot see whether the scribe having written each stroke, immediately added the serif to it, or whether he wrote a line, say, of letters without serifs, and then brought his pen back to them to put on the last small decorative details.

My guess would be in this particular case that the second scenario is the correct one, because writing this way would allow him to build up rhythm in the repeated series of similar movements used to draw down the main strokes. In a separate and different kind of movement, again repeated, he could afterwards add all together the serifs. Interestingly however, he does not always separate the serifs from the strokes themselves. In the <r> for example, there is no serif at the start of the letter but a hook on the stroke approach that is formed in an integrated movement with that used to form the stroke itself. Indeed such hooks at the start of letter strokes are common on third century Roman writing of many styles and

their genesis and development may be related to the serif. This is another uncertainty that could bear much research.

The hand being practiced in P. Tebtunis 686 is a relatively formal bookscript. In the production of professional rapidly-written, informal scripts the operative factors are agility, fluency and a minimum expenditure of energy. In teaching the Dura clerical hand, there would have been a requirement to build up the writing speed. A key characteristic of the clerical hand at Dura is a fusion of composite letter-strokes and ligatures (joins) between letters, with few restrictions against these for any of its letter-forms as we will see. Letter-forms are cursively (rather than carefully and separately) made, unconsciously and naturally, by practised, trained scribes. A bi-product of each of these elements is as little pen-lifting as possible and a letter-form that is rather an approximation of its shape - a hint at the principle of its essence – not a full execution of the shape.

To return to a distinction made in 9.2 between professional and non-professional writers: after discussing the question of writing training with people who write for a living today, it seems to me that a crucial difference between the professional and today's average layman, or non-professional writer, is his/her consciousness of the act of writing while actually performing it (see also Fairbank: 1948, p.13). This is no simple matter to define but there is probably a kind of 'scale of consciousness' along which this quality can be measured. One difference, at least, between the modern layman hand-writer and the scribe is essentially that both writers, once practised, can write their habitual scripts without thinking about what they are doing, unconsciously as it were. But the clerk, who may well also write faster than the layman, will still be able to do this whatever the purpose and style of his writing. The layman is restricted

to one individual style of script which if he attempts to alter or refine he will be unable to maintain without conscious attention.

Also, the more formal the hand, the tidier, more aesthetically pleasing the writing is intended to be, the more both writers slow down and take care to separate the strokes of the letters. In contrast to the layman, however, the trained scribe does not necessarily become more conscious of his actions in the process and writes naturally and easily and without awkwardness. On the other hand, an effort to write a formal script or produce a set style by the untrained layman both increases his awareness of the act of writing and exhibits his ineptitude more clearly.

Of course I have no way of measuring whether or not the Dura scribes were conscious of the act of their performance when writing the regular documents, but one of the reasons their work looks fluid is likely to be because they need to pay little attention to the details of letter-forms, performing them deftly and skilfully, as they have previously done so many times before, during their training and in the course of their regular work. The training of the scribes who wrote the standard styles at Dura is apparent by juxtaposition of any other of the Dura papyri written in the same standard style (see Plate 20). Recognisable similarity and shared features in extended sections of writing done by different people necessarily implies the respective scribes' schooling in the hand being written.

A script-style that was maintained with relative consistency over the spread of the Roman empire bespeaks the existence of working script designers and teachers who ensured, at least to a considerable degree, that the script continued to be written in the traditional way. They therefore kept out at least relatively, as Cencetti argued, the influence of changes that were gradually taking place in *scrittura usuale* over the period throughout which the clerical hand

was preserved (1993). Yet all scripts whatever their function and style are also subject to

naturally occurring influences, and these too can be found in the Dura clerical hand, as I shall

shortly show.

10. THE CLERICAL HAND

10.1 <u>CLASS CHARACTERISTICS</u>

Forensic handwriting investigators, keen to differentiate writers of documents one from the other, may begin their analysis of given handwriting specimens by distinguishing in them their 'class' from their 'individual' characteristics. Class characteristics are those features of handwriting that define a given style and which belong to and derive from the style of script the writer was taught to write (Smith: 1984, pp.19-32; Huber & Headrick: 1999, pp.42-45; Morris: 2000, pp.37-46). In contrast, individual characteristics are those particular idiosyncrasies in the handwriting of any writer that are specific and individual to him or herself.

The handwriting investigator is principally interested in the individual characteristics of the writing s/he is considering, for these can often differentiate the forged from the genuine document. The key aim in this section, however, is to find the class characteristics of the Dura documentary scripts, those features that all the documents written in the same hand - here the clerical hand - share. The explanation for the unity of this hand at Dura, I have earlier argued, lies in the teaching of the style that its writers had obviously received and the unified hand is itself evidence that it had indeed been specifically taught.

Specific prior training in writing, handwriting investigators maintain, can be identified by comparing given samples; for there are particular features of all instances of a set style that are common to all. Such features include, for example, their layout or *mise-en-page* - including habits of line spacing, width of margins etc. - as well as the size and form of the letters themselves. The extent to which given features occur regularly and systematically

across all specimens of a given handwriting style helps determine whether they were taught as belonging properly to the style, or developed more arbitrarily and idiosyncratically by the writers themselves. Small details of letters, especially when analysed in their finer patterning and structure, can be very informative.

The discussion that follows uses analytic methods to illustrate aspects of the (deduced) training given in the clerical hand to the cohort clerks as this is exemplified in a small selection of the surviving papyri. It will be worthwhile before beginning however, to summarise Bradford Welles's brief palaeographical remarks concerning the hand at Dura that he published in his edition of the papyri. He wrote approximately a page of commentary on 'The Clerical Hand' which he differentiated in particular from the finer 'Chancery Hand' also found in some of the documents from Dura (TEAD-V, pp.56-57). I quote him closely in the following paragraph.

The Clerical Hand is, he wrote,

> 'the hand of skilful clerks preparing lists, notes, records, and reports for their files and those of their superiors.'

The clerks themselves were

> 'concerned with speed and utility'

and the speed at which the clerical hand was written, was the key feature that distinguished it from finer grades of script. It was also the cause of its

> 'frequent ligatures'

and was responsible for the heavy use of abbreviations as well as

'other marks of haste'.

He notes the hand was generally written, at least in the earlier examples of it, with

'ease and regularity' and 'a certain verve and dash'.

He finds it attractive, at its best

'rather decorative... the lines even and the slope of the letters uniform',

the pen strokes sure and easy,

'regular and pleasant',

and possessing a

'kind of feathery lightness'.

He also saw a certain deterioration in the quality of the script in some of the later documents, a property that he believed showed the scribes' distaste for their work.

I agree with most of Welles's remarks and will be investigating and supporting some of them here and in the following sections. The evident fluency with which the majority of the scribes write, at least until the final years of the Roman camp at Dura, which makes their documents pleasurable to read, is also an indication that the writers possessed a considerable degree of skill. In order to explore this further, I have selected nine documents written in the clerical hand from the Dura papyri corpus. In 10.2 and 10.3 I will analyse the letters of the script in some detail but in the current section I will introduce the documents concerned by comparing them more generally in respect of their layout. This will also require a brief description of their respective content.

The chosen documents are, in date order, P. Dura 98 , 82, 115, 83, 89, 107, 95, 105 and 97. They vary in content but there are parallels between them. Most are related to each other by virtue of the fact that the later document is written on the back (the verso) of the earlier. This pattern is shown in the table below.

Recto	Date CE	Content	Verso	Date CE	Content
P. Dura 98	218/219	Roster	**P. Dura 115**	232	List of Names
P. Dura 82	27-30 March 223-233/5	Morning Report	**P. Dura 97**	After August 31, 251	List of Men and Mounts
P. Dura 83	c. 4 September 233	List of Names	**[P. Dura 106**	235 – 40	Guard Roster].[184]
P. Dura 89	26-28 May 239	Morning Report	**P. Dura 107**	22-24 May 240/1	Guard Roster
P. Dura 95	15 October 250 - June/July 251	Strength Report ?	**P. Dura 105**	251/6	Roster

The papyrus is always turned over to write on the reverse from base to top, so that the verso text is 'upside down' in relation to that on the recto.[185] There are no obvious patterns in the length of the interlude between the time the writing was done on the recto and verso. It varies from possibly as little as approximately one year (P. Dura 95: P. Dura 105) or as long as 28 years (P. Dura 82: P. Dura 97). The particular content of a document does not appear to affect what might appear on its reverse. There are indeed commonalities between the members of this group. The layout of a standard document, in so far as it is organised and shared between tokens of the same type or genre of document, shows that the clerks were following pre-ordained rules and instructions concerning documentary standards and formats. Any shared

---

[184] In very poor condition and not considered here.
[185] Unconfirmed for P. Dura 83.

regularity points to the existence of a rule which would have been transmitted in some kind of training.

Regarding their dimensions, the fragmentary condition of the collection in general means that in only a few cases is it possible to work out the size of the papyrus roll. However, this appears to have been fairly standard irrespective of the document genre. None appear to exceed a fragment of P. Dura 82/97, 26.7 cm. in height, and P. Dura 89/107 measures c. 26 cm. and P. Dura 95/105 is also comparable. Allowing for a deal of deterioration and wear at the upper and lower ends of the roll, it is likely that 26-28 cm. was the usual height of a roll at Dura. None of the chosen examples have been preserved to a sufficient extent for one to be able to say anything about their original length. Some details of the page layout however can be established and these are of some interest. A table of the dimensions of these selected papyri can be found in Appendix 2.

There is a consistency in the margins on the page, as is apparent from the table. Equally, the equivalence in the column width of those documents related in their genre is sufficient to indicate that a broad instruction had once been given (which had probably become a habitual practice) that defined the standard. For the Morning Reports, for example, in those three papyri for which this can be established the column width, averaging c. 50 cm, is considerable but is common to all. The slight variation is accounted for by the fact that a straight margin on the right-hand side of the column is only ever roughly maintained because it is dictated, at least in part, by the content of the line itself and the relative length of the words it contains.

The left-hand margin, while a lot straighter, is not so straight either as to have been pre-set or ruled before writing. The scribes evidently used their practised eye to find their way around the page once given the particular look and approximate measurement required in each case.

The two examples of Roster in the selection have a column width of roughly 5 cm. and an inter-columnar space of 4-6 cm. This suggests that for this type of document this was the approximate standard proper column width, although again, the actual length of the line in each instance is determined by the names it contains.

More remarkable perhaps is the consistency in the size of the script across each example in the chosen selection (and beyond it) and throughout the extent of the chronological period covered. This cannot be measured with any real accuracy unfortunately, for the size of a line of handwriting is not constantly and identically maintained throughout its extent, but the range of my approximate measurement varies by 2 mm. at the outside as can be seen from the dimensions table. This shows that it is likely that the size of script aimed for was c. 3 mm. for the body of the letters (i.e. between head and baseline and excluding ascenders and descenders, often called the x-height). This similarity is too great to pass off as entirely coincidental when one is dealing with such an individual phenomenon as handwriting is known to be (Huber & Headrick: 1999, p.46; Srihari et al.: 2002).

It is clear, from the slight undulation in the otherwise straight baseline of the writing in each case, that there had been no pre-ruling of the papyrus prior to writing. Yet a probably deliberate consistency can also be detected in the measurement of the space between the succeeding script baselines. This varies slightly in each specimen. However, the evident consistency in the interlinear space across these nine examples is also interesting. Each writer is perhaps following the fibres of the papyrus but the size of the letters across the examples is sufficiently similar that the interlinear space correspondingly is also remarkably consistent and varies little across the group. The scribes, therefore, must be following a rule that dictates the proper size that the letters should be.

The natural spatial layout habits of writers are particular to the individual and are often for this reason given much attention in handwriting authorship enquiries. Information of this type is responsible for the 'pictorial effect' of a script as a whole, gleaned from looking at an excerpted example. For Huber & Headrick it is of itself a major element of style and is one of only four broad categories of elements in handwriting that can carry 'discriminating features' (being those that distinguish one writer from another) (1999, p.91). The consistency in the general appearance of the script of the Dura papyri, therefore, is unlikely to be entirely natural and it is much more probable that the scribes of the respective papyri were following at least a broad rule of thumb. All it needed to achieve such a regularity across diverse writers was to specify a given letter-height (here c. 3 mm.) and to say also that the interlinear space should be twice that of the module (i.e. of the body sitting between head and baseline) of the script. Also a practice of enlarging or extending and flourishing in some way letters occurring at the beginning and end of lines is common to many writers in the chosen selection. The slant of the writing (approximately 45°) is also shared by them all (although maintained slightly less evenly in some of the later papyri, particularly P. Dura 107). How much this is due to the writing position on the knee is difficult to tell.

In an investigation into the movement of the arm when writing, Hollerbach found what he believed to be an underlying control strategy in the production of letter shapes. This is an up-down movement that drives the arm and which is moderated by small, lateral, left-right adjustments which allow the necessary shaping function and which facilitate progress along the horizontal axis (Hollerbach: 1979, p.255). Handwriting is, he demonstrates using empirical evidence, a reflection of a steady oscillatory movement pattern in which the maintenance of a steady rhythm aids fluency. The power of the oscillation drives the vertical

movements, while the lateral progression is interrupted by start-stop movements as the hand readjusts its position on the surface (or just above it) as it moves along the writing line.

Analysis of the writing in the above-made selection of papyri seems to illustrate Hollerbach's thesis very well. As will become clearer in the next section in the analysis of letters, the vertical upstroke in the letter <b> in particular, is usually made in one swooping and often continuous process with no pen-lift visible in the line. In descending strokes too, the pen-trace is often long and flourished at its terminal, with a gradually diminishing thickness, showing that it was made at some speed. The rule in the clerical hand, as will be seen later, is to lift the pen at the base of a long descending stroke, and in doing this the writer makes a horizontal adjustment so as to move to the right. Intra-letter spaces caused by the rightward adjustment occur also in the gaps between the descending stroke that forms the body, made first, and the horizontal top-strokes in letters like <c> and <g>.

Generally, the script of the Dura clerical papyri suggests that the scribes wrote rhythmically and with strong movements along a line oscillating between 1.30 and 7.30 pm. on an analogue clock-face. Alfred Fairbank in his important '**Handwriting Manual**' emphasises the benefits of using what he calls 'sidling' strokes. In 'sidling' the pen-nib is angled at approximately 45˚ perpendicular to the writing line, placed on the surface and pulled (emphatically not pushed) along this axis. The tendency to do this to enhance speed is, in his opinion, common to most fluent writers. In the movement the resistance of both the writing surface itself and the mechanics of the pen are minimised and little inhibit the movement of the pen (Fairbank: (1932) 1948, p.23). Upstrokes, made at a consistent slant (i.e. 'sidled'), are a prominent feature of all well-written clerical hands and are an effect of the scribe's skill. Attempts by less fluent writers to pull out the same essentially slanting upstrokes (usually, as here, set at an

approximate 45º angle) are likely to prove unsuccessful. The longer, upward-slanting letter-strokes, at least, are probably best facilitated by a pivotal movement from the elbow, smaller shaping movements being made by wrist and finger movements (Woodworth: 1979).[186]

The general consistency in its appearance gives the script great regularity. The pen-lines are strongly and dexterously made. The scribes know what they have to do and they do not falter in the execution of their flowing strokes. The overall effect of similarity and uniformity that all the papyri share in my small chosen selection is the manifestation of pre-organisation and pre-learned rules in which the writers had been trained. This point will be reinforced in the realisation that, to a considerable level of detail, the letters that all the scribes produce, though they vary sometimes in the fluency of the hand and the morphology of some of the letters, are too similar between scribes to have been entirely spontaneously produced in each case. Such are the indicators of scribal training maintained through the years. The clerical hand as found in the Dura papyri is not the work of casual odd-job scribblers brought in *ad hoc* to do a routine task.

---

[186] The introduction and widespread use of 'upstrokes' is probably a necessary component of any script defined as a 'cursive'. It is a development of script since the archaic period arguably facilitated by the introduction of papyrus as a writing surface.

10.2 P. DURA 98 AND HISTORICAL DEVELOPMENT

In this section, I present an analysis of one particular example of the clerical hand, P. Dura 98. Its letter-forms are described one by one and in alphabetical order. Each particular letter-form shown is a representative token of a specific type of which there are usually many actual instances. I describe the forms with respect to their *ductus* and make occasional comparisons with the ORC letters of the tablets found at Vindolanda (Bowman & Thomas: 1983, pp.51-71). This is a pertinent and useful comparison to make here since both corpora of documents were found in army quarters and were produced by soldiers. More particularly the Vindolanda corpus precedes that of Dura by some c. 100-150 years and this means that developments in the letter-forms can be expected and can be traced in the comparisons between the two sets of written material. To make the Vindolanda comparisons I have used drawings by D. J. Thomas, co-editor with Alan Bowman of the first published edition of the Vindolanda tablets, and taken from Figure 11 therein (Bowman & Thomas: 1983, p.58).[187] These are intended to give an approximate idea of the ORC letter-form in question in the particular instance for the purposes of comparison only.

I have outlined in earlier sections the idea that rapid writing gradually changes letter-forms. I am concerned to stress the effects, as these are revealed at Dura-Europos, of the changes in the script that have taken place over the century or so since the writing of the Vindolanda tablets. As palaeographer Malcolm Parkes recently wrote, scribes who have large piles of routine work to do and limited time in which to do it naturally give

'priority to the momentum and continuity of the movements that govern the direction of the traces' (Parkes: 2008, p.72).

---

[187] I use digital photographs taken from the Yale Papyrus Collection [online - accessed January 28th 2010]. To some I have added small arrows showing stroke direction.

In the process letter-forms are reduced and simplified in order to allow the writing speed to accelerate, as I will show.

i. 'lAet'
Col 2, l. 4

ii. (m)Ari
Col 2, l.6

iii. Col 2, l.3

iv. bA(r)
Col 1, l.24

Only one type of <a> occurs in P. Dura 98.   All its subtly different shapes are sufficiently alike to be regarded as sharing an underlying schema. An inheritance from ORC that has changed little, this is a two-stroke letter composed of an obliquely-slanting downward stroke and a left-right top stroke (A-i). The shape of the top stroke varies because it is conditioned by the shape of the following letter. If this begins with a vertical downstroke, for example, (A-ii) the top stroke will be shorter and curve to anticipate the next. Stroke 1 can be very extended (A-iii) particularly when it occurs in word-initial position. The slight hook to the left at its terminal shows the clockwise direction of the hand moving upwards to reach the starting position for stroke 2. In A-iv the scribe failed to take his pen off the page having formed the tongue and thus left the trace of his movement - the 'invisible *ductus*' - on the surface.

i. eBi
Col 1, l.6
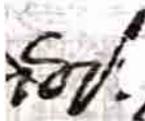
ii. eoB
Col 1, l.8
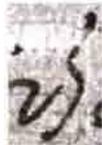
iii. B(i)
Col 3, l.8

iv. B(i)
(a)BB(a)
Col 2, l.29

The letter <b> also has essentially only one form; that typical of ORC. Its shape is very characteristic, making it easily recognisable, especially given its size and often exceptionally tall ascender. Despite that, it has a range of quite diverse appearances but the underlying *ductus* is always the same. Again, the 'invisible *ductus*' is often clear when the scribe fails to lift his pen after having written the anti-clockwise bowl. In a more careful execution, the pen is lifted after forming the bowl and placed back on the surface at the position from which to pull down the stem (B-iii), which itself usually has a small curve or hook-in from the left at its approach (B-

iv). The descending stem ends in a short (horizontal) exit stroke which joins smoothly into a following letter. The shape of this stroke will be conditioned in its direction by the movement of the first component of that following letter (as remarked upon similarly for <a> above). This is a general characteristic of almost all the letters in this script that will be silently observed from henceforth.
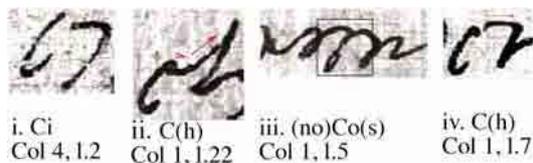
<c> also has only one form in this papyrus and this is a two-stroke letter that sits contained within the head and baseline of the writing. The downward stroke to form the lower part of the letter is written first, and in the letter's more usual form, the separation between its two composite strokes is easily visible. The second top stroke almost invariably ligatures with any following letter (C-iv). The lower stroke may be more or less curved. When the letter occurs medially in ligatured sequences it may loop at the base (C-iii).[188] This occurs frequently in the abbreviation '*cos*' (for consul) and is common at line ends. The letter in ligature in this way is not known at Vindolanda and this is obviously a speed-induced development. It also perhaps illustrates a fluency of movement possible only on papyrus and not on other writing materials (Cencetti: 1993, p.43).

To understand the form of <d> we must look first at its history. In the earlier Roman cursive and as exemplified in the Vindolanda tablets, <d> has a small cup-shaped bowl and a second, oblique top stroke that often ligatures with a following letter (D-i; Mallon: 1952, pp. 35-6). In P. Dura 98 the bowl,
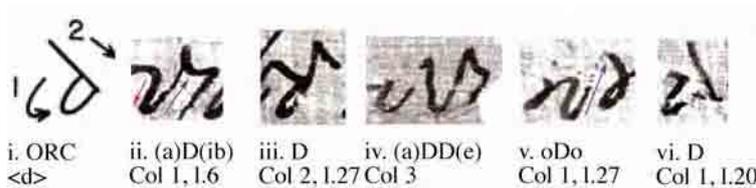
---

[188] The term 'loop' here describes a clockwise and 'cusp' an anticlockwise movement (following (Hollerbach: 1979, p.255).

formed in an anti-clockwise direction, is still present but here, the oblique top stroke is considerably smaller and in D-iii indeed just a small tick (even this barely present in D-iv and v). In none of the first four Dura examples does the writer, having formed the bowl, lift his pen from the surface. Instead, he leaves visible the trace of his movement upward to form the top stroke (shown with the blue arrow in D-ii and D-v). The 'invisible *ductus*' has become part of the shape of the letter and this now has an altogether different appearance. However, there is also one isolated instance of the earlier form (D-vi).

<E> is perhaps the letter that shows the most variety and I have distinguished two different forms, Types 1 and 2. Type 1 (E-i) is a two-stroke letter. The first and lower stroke, which may be almost straight as in E-i or slightly curved, is written first and usually begins with a small horizontal join from the previous letter. The second upper curved c-shape almost invariably ligatures with a following letter, especially if that letter starts on or just below the headline.

Both types of <e> seem to occur with equal frequency. The Type 2 letter is a long single stroke, usually but not always, preceded by a pen lift and drawn downwards from top to bottom. At the base the pen is lifted (at least when more carefully

i. Type 1 (r)El Col 2, l.3 ii. Type 2 (s)E(m) Col 1, l.17 iii. Er Col 2, l.18 iv. Eb(i) Col 1, l.16 v. (d)Ex(t) Col 2, l.28

written as in E-ii), brought back to just below the mid-point of the stroke and drawn slightly upwards inside it before moving right in a short horizontal cross-bar that joins with the following letter. E-ii can be contrasted with the increasingly cursive production of the same form in E-iii, iv and v. Each of these is progressively less carefully and more quickly written and the pen is not lifted at the base of the stroke but, with a tight loop or cusp at the base,

pivoted right diagonally upwards to join with the following letter. The reach of the upwards right diagonal can be great and in E-v is probably written in a classic left-right pivotal movement.

Both types of <e> in P. Dura 98 are paralleled by similar letters in the Vindolanda tablets, although in the earlier period these occur together with a (rarer) more carefully written three or four-stroke <e> akin to a 'capital' form (Bowman & Thomas: 1983, pp.62-3).

i. (a)uFe(i)
Col 1, l.16

ii. F(a)
Col 1, l.3
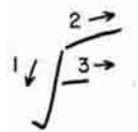
iii. ORC <f>

<F> has one form which is related in its structure to the Type 1 <e> but its lower half (the first stroke) is long and descending. The common slight hook to the left at the base indicates the probable direction of the arm as it moves up to begin stroke two. The upper half is as that of <e>: a small, usually c-shaped curve ending in the horizontal stroke with which it can join to a following letter (F-ii). In F-i this is written so rapidly the curve is reduced to a v-shape.

The earlier form of <f> that appears in the Vindolanda tablets is a 3-stroke letter with no ligature from the left and with two horizontal 'arms' rather than the top curve. The upper horizontal stroke is pulled from left to right, whereas in the Dura papyrus the direction of this stroke is reversed. This is an illustration of the change in *ductus* that Gumbert called 'metanalysis' (cp. <e> above also). The <f> used at Dura-Europos is a developed form of the earlier letter, its shape having been moulded by the scribe's search for a more efficient, rapid execution.

i. (r)Ga(s)
Col 2, l.7

ii. oGe(n)
Col 1, l.14

iii. (n)G(i)
Col 2, l.11

iv. ORC G
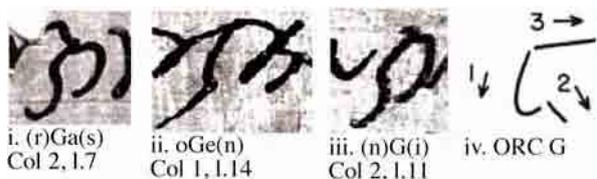
The down-stroke of <g> begins with a small lead-in stroke or 'tick' to the left. The tick has developed from the letter's customary ligature with the letter that precedes it (G-iii) and this has become an integrated part of the form. Its tailstroke descends below the writing line and this distinguishes <g> from Type 2 <t>, the *ductus* of which it otherwise shares (see below). Its lower curve sometimes has an angular profile and this gives it a distinctive shape (compare G-i and ii). The top stroke 2 often ligatures to the right and in doing so the pen-lift between strokes 1 and 2 can become visible.

The earlier letter - as is illustrated by the evidence both of the Vindolanda tablets and the papyri of the period - had a larger, more upright form composed of three strokes, the third being a small 'beard' that gave the letter an appearance similar to the modern ''capital'' form.[189] The final top stroke could ligature with a letter to the right, in the same way as occurs in P. Dura 98.

There are two variant forms of <h> sufficiently different as to distinguish them as two types. Type 1 is a taller letter with an open cusp at the terminal of the downward stem, and sometimes possibly also a pen-lift here, before the smaller movement upwards of stroke 2 which rides along the upper writing line.
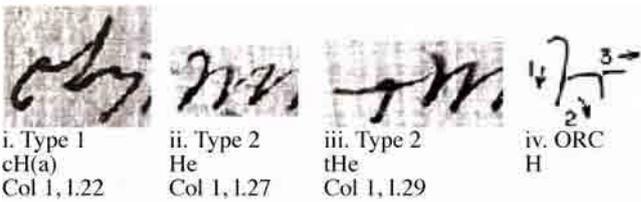
i. Type 1
cH(a)
Col 1, l.22

ii. Type 2
He
Col 1, l.27

iii. Type 2
tHe
Col 1, l.29

iv. ORC
H

Type 2, in contrast, has a tight clockwise loop at the base of the first stroke and a well-rounded arch in the body of the letter. In P. Dura 98 Type 2 is perhaps more frequently used than Type 1. It is a much smaller letter and probably invariably formed in a single stroke, the ascender generally barely protruding

---

[189] Two instances of what I regard as a ''capital'' letter form of <g> occur in P. Dura 98, each in word initial position in Col. 2, l. 17 and Col. 3, l.12 (not shown).

above the headline of the writing. It almost invariably forms a ligature with the letter preceding it and its right leg arch also commonly joins the following letter by means of a loop at its base.

In the Vindolanda tablets <h> is written in either two or three strokes and can have the hook-in from the left at the top of the stem which, in P. Dura 98, facilitates the ligature. At Vindolanda this letter does not ligature from the left. However Thomas remarks that the third stroke on the Vindolanda <h> - its small tick to the right at the top of the arch which forms a ligature with a following letter - 'seems to have been added solely to facilitate such a join' (Bowman & Thomas: 1983, p.63 and No.225, ll.9, 11). This stroke has been assimilated more smoothly into the letter in the Dura Type 2 <h> by means of the loop at the base. Both types 1 and 2 <h> probably result from efforts to write the earlier ORC form more quickly.

i. (l) lo
Col 1, l.27

ii. cl(m)
Col 1, l.33

iii. bl
Col 1, l.14

iv. lu(l)
Col 2, l.5
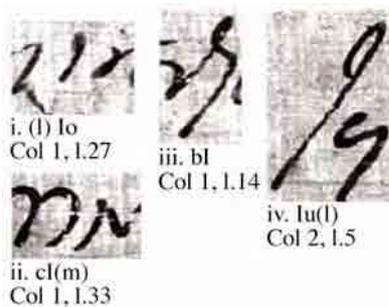
<I>, a single pen-stroke, is one of the few letters in this alphabet which cannot join with a following letter because its downward direction and length prohibits it from doing so (others are <p>, <q> and <l>). In sustained text in which nearly all letters join, <i> stands out in its absence of ligature. In this it exhibits a difference from the same letter at Vindolanda which in two instances ligatures to the right by means of a small serif at the top of the stem (Bowman & Thomas.: 1983, p.64 describing Nos. 295 and 299). The script of P. Dura 98 does not have serifs, although arguably these have developed into hooks on the left side of tall stems.

<I-iv> may be a kind of 'capital' form, but in P. Dura 98 <i> can be written either between the head and baseline of the writing or somewhat longer. Sometimes a kind of middle

distance occurs and a count of short and long <i>s found no particular preference for one or the other size. The letter combination <bi> (as in I-iii) is a distinctive and common shape and <i> in this position is usually longer. Consistent with the slant of the writing <i> tilts to the right and its common curvature of the stem to the left is an effect of the speed of the writer and shows the repeated clockwise movement of his hand.

<K> is omitted from this survey since it occurs only in 'Kal' used as an abbreviation for 'Kalendae' and is not, strictly speaking, a Latin letter.

<L> is another descending form that does not join with letters following on the right. It has two forms, each in my classification belonging to the same underlying schema, each probably almost invariably drawn in single stroke in a more or less downward direction. In L-i the 'elbow', not uncommonly, falls below the baseline and this form of the letter is particularly large. As for <i> above, the
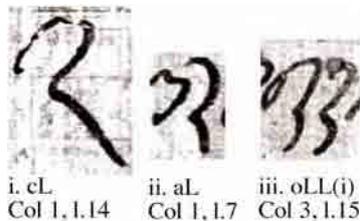
i. cL
Col 1, l.14

ii. aL
Col 1, l.7

iii. oLL(i)
Col 3, l.15

hooked curvature both sub-types of <l> share at the top of the stem acts as the writer's approach to the stem and the link to the letter preceding (L-ii). Its general lean forwards and leftward flick on the tail is an effect of speed and of the writer anticipating the movement back upwards to form the following letter.

<M> begins with a single down-stroke, and a second stroke forms the remainder of the letter. There is probably usually a pen-lift between the two strokes (M-iii), although the beginning of the second is commonly obscured (M-ii). In M-v the entire letter is possibly made in one fluid stroke, and this is certainly the case for M-iv. Similar examples are found in papyri from the
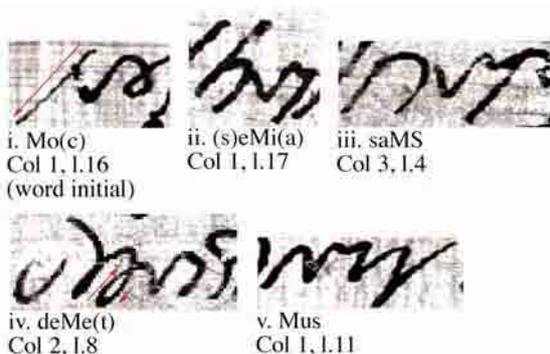
i. Mo(c)
Col 1, l.16
(word initial)

ii. (s)eMi(a)
Col 1, l.17

iii. saMS
Col 3, l.4

iv. deMe(t)
Col 2, l.8

v. Mus
Col 1, l.11

early second century (Mallon: 1952, p.38; Casamassima & Staraz: 1977, p.43-5). In M-iv the clockwise loop and returning stroke at the base of the first stroke is formed by the pattern of the 'invisible *ductus*'. The increased fluidity of P. Dura 98 letter in comparison with earlier examples is noticeable in all the examples: in the Vindolanda tablets <m> is written with two, three or even four separated strokes.

<N>, although often very similar to <m> when in ligature, is distinguished from it by the absence of the very small final stroke with which <m> joins with a following letter. That is usually avoided on <n> although (compare M-iv with N-iii). This is probably a deliberate policy so as to preserve the necessary differentiation between the two letters. The joining stroke in <m> is deliberately made in some of the Vindolanda tablets which, Thomas says, facilitates an 'uncommon' ligature to the right (Bowman & Thomas.: 1983, p.65).

i. oNei
Col 1, 1.15

ii. (i)No
Col 1, 1.5

iii. (g)Nus
Col 1, 1.13

iv. (o)NiNi
Col 1, 1.25
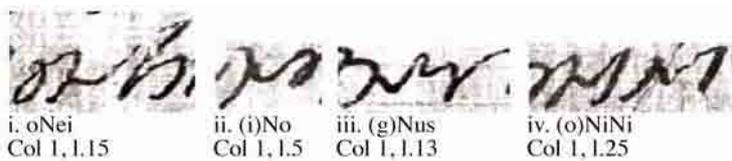
In <n>, as in <m>, the writer usually lifts the pen after forming stroke 1, though <n> also can be written in a single, fluid stroke (N-iv). When this happens the hand loops in a clockwise direction at the stroke base in the usual way. Again as with <m>, although the pen-lift between strokes 1 and 2 is sometimes apparent, the writer usually disguises it by beginning stroke 2 with his pen placed back inside the width of stroke 1 before pulling outwards (although in N-ii this has failed to come off). The care usually taken to avoid this happening might suggest specific training intended to preserve legibility.

Only one form of <o> occurs in this papyrus. It is a small looped round or near round probably always written in a clockwise direction and usually in one smooth and continuous stroke (O-iii). Unless following a letter that prohibits it (O-ii) it joins the neighbouring graphs

on either side (O-i). The only form that occurs in P. Dura 98, this form is a development of

that found at Vindolanda which is invariably written in two separated down-strokes (Bowman & Thomas.: 1983, p.65). Again, this development would have been encouraged by the smoother papyrus surface.
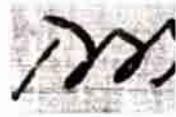
<P> has two different variants. Type 1, having a downward descending stroke, like <i> above cannot join with a following letter. Preceding letters can join into it however (P-ii). Its descending stem is probably always written first and the bowl added to it in a single clockwise stroke. The bowl may be entirely closed or left somewhat open. This kind of <p> is a rare form at Vindolanda, although it is found in early second century papyri (Casamassima and Staraz: 1977, pp.45-8 and Table 1).

Type 2 <p> (P-iii), which is usual in the Vindolanda tablets but less common in P. Dura 98, has the advantage of facilitating a join with a following letter. It has a short stem which can loop at the base and a small horizontal stroke instead of the bowl. The disadvantage is that it is easy to confuse this type of <p> with other letters which loop similarly upwards from the baseline and sit between the head and baseline of the writing.
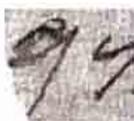
There is one instance only of <q> in this papyrus. It is formed in a single stroke, and like other letters with vertical descending stem, it does not ligature with a succeeding letter (Q-i). The writer has had difficulty with his pen in this particular example.

<R>, when it appears as it does in R-i and R-ii, can easily be confused with Type 2 <p> as just described, and also with <a>, <t>, <s> etc. Sometimes, however, the writer will shape its second stroke more distinctively giving it a slight angularity as it joins a following letter (R-iii). In P. Dura 98 strokes 1 and 2 are nearly always written as one continuous stroke which loops up at the base to change direction. It sits, at least approximately, between head and baseline of the writing. In earlier documents <r> was usually made in two separated strokes with a longer descending stem. Thus the <r> in P. Dura 98 would seem to be a reduction of the earlier form.

i. Sal
Col 3, l.7

ii. iS
Col 3, l.15

iii. S(e)
Col 1, l.10

iv. uS
Col 2, l.16
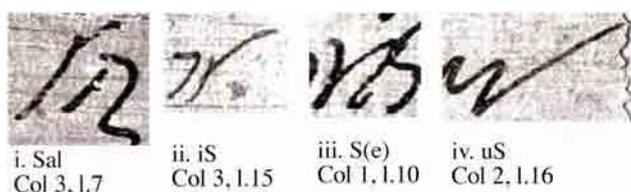
In its ORC form, and invariably at Vindolanda, <s> is a two stroke letter (as in S-i and S-ii) in which the separation in the *ductus* of the lower from the top stroke can often be seen. There are some instances of this in P. Dura 98 and in these, and especially when word initial (as in S-i), stroke 1 descends below the line and curves slightly to the left at the foot, while the pen is lifted and brought back up inside the stem just below the top of stroke 1 to pull across stroke 2. The extension of stroke 2 above the headline means that it does not usually ligature with a following letter. This is not the case for the one-stroke letter (S-iii) which commonly joins to the right, and can also be joined into from the left. The variation in the number of the composite strokes in this letter is an effect of either a slower or faster execution of essentially the same form and the single stroke letter is far the more frequent in P. Dura 98. The letters <u> and <s> are a common combination in Latin (S-iv), and their shape is easily recognisable: the final stroke a wrist-flick with a cusp, not a loop, at the foot of the stem.

<T> in P. Dura 98 has two variants. In Type 1 the cross-stroke is made in a single stroke, probably usually, as here, after having written the vertical stem. This is perhaps the older form and is the more common type at Vindolanda. Type 2, in contrast, begins with the left portion of the top stroke which moves out of the join with the previous letter and straight downward to form the letter's stem. The writer then moves his pen back up to the top of the stem and pulls out the second part of the top stroke which also commonly joins the following letter (T-iii). Type 2 <t> provides a way of allowing the writer to form the top stroke of <t> without over-interrupting the flow of his writing by having to return to it to cross it. At least some Roman writers had clearly been taught to use this execution. Cencetti shows it had been used on papyrus since at least the first century CE (PSI 729, cited by Cencetti: 1993, pp.51-2). Both types of <t> can be seen in T-iv.

i. Type 1
Th(e) Col 1, 1.8

ii. Type 1
Ti Col 3, 1.28
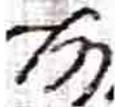
iii. Type 2
(g)eT(a) Col 1, 1.10

iv. Types 1 and 2
TTi Col 4, 1.9

<U> is ubiquitous in a small cup-shaped superscript form which may be more or less rounded (U-i and ii). Formed in one stroke, it is always in ligature with a following letter, and often with a preceding one too. Before <l> and <s>, as in the examples, a smaller-sized letter is common. Commenting on this ligatured form at Vindolanda, Thomas remarks that it 'no doubt derives from the conjoint <us> of stone inscriptions' (Bowman & Thomas.: 1983, p.67; Mallon: 1952, pp.126-8). This is possible, although as always in such comparison, the difficulty is in deciding which medium had priority in influencing the other. <U> generally varies in size and sometimes sits on the line in this era (U-iii-v).

i. mU s
Col 1, 1

ii. (l)Ul
Col 1, 1.7

iii. fuUs
Col 1, 1.3

iv. (s)eUs(r)
Col 1, 1.25

<X> is a relatively large letter, probably always formed in the same way: the top-right to bottom-left diagonal stroke drawn first and the second forming a ligature on or about the headline of the writing into a following letter (X-i). The *ductus* is well illustrated in its combination with <e>. A similar *ductus* occurs in <ex> in a Vindolanda tablet (Bowman & Thomas.: 1983, p.67, referring to VT II, 225, ll.21 &24) and Cencetti records <x> ligaturing to the right in papyri at least as early as 150 CE (Cencetti: (1950) 1993, p.54, referring to PSI 1026b). In P. Dura 98 it is generally flamboyantly written.

i. aXi
Col 1, l.1

i. cYr(i)
Col 5, l.19

i. Ze
Col 1, l.9

Only one instance of <y> occurs, looking distressingly similar to <r>, <s>, <c> and other letters that commonly or occasionally loop up out of the baseline and join along the headline. Strictly speaking, it is not a Latin letter.

<Z> for this writer has a loop into the top stroke and a barely formed foot. There are no instances of it in ligature here, but it is equipped to form one with both lead-in and lead-out strokes.

10.3 COMPARATIVE EXERCISES

In 10.2 the standardly occurring letter-forms in the clerical hand were illustrated using as representative the range of letter-forms in P. Dura 98. These occur very similarly in each of the other documents in my small chosen set so that the writing of P. Dura 98 is generally illustrative of that in each of them. However, in the current section I will focus on a few letters in detail and look at some of the further developments they undergo over the period the papyri span. As mentioned earlier, in the early third century an important change in the morphology and aspect of Roman documentary writing began to get underway (summarised in Section 7). This enhances the importance of the Dura documents because it is possible that they can help map the process of the much-discussed change and reveal some of its causes. Although the shorter timespan over which the Dura documents extend – under fifty years - means perhaps that the form changes are not as extensive or wide-ranging as they had been between the Vindolanda and the Dura periods. Nonetheless, several letters do undergo noticeable alterations.

Papyrus (as opposed to wood or wax) is, as a writing surface, generally conducive to change in letter-forms because it encourages fluency in the execution. The Dura scribes are also very skilled. Indeed, their smoothly-written documents collectively point up the obvious lack of fluency, comparatively speaking, in that of the ordinary writers with no specific clerical training (9.2 above). Consequently, most letters in the professional hand continue to be simplified, particularly in the later years at Dura-Europos. Additionally, the writing quality in the selected group deteriorates over the period and in the later examples is far less fine. This was also noted by Marichal, who split the period into two between the earlier, more expert scribes and those later (ChLA-IX: 1977, p.19). The first of the less able men was responsible

for P. Dura 89 (239 CE) and there is no improvement in standard after this date. The script generally is more scrappily-written, untidier and the forms of the letters are less well observed, their writers being obviously confused at times as to their proper *ductus*. Letter module is not kept constant, and the writing is less fluent than that of the earlier writers. The training in writing given at the camp seems not to be quite what it was. The hand is still identifiable as the standard clerical hand, despite the absence of the earlier finesse, but it perhaps more easily permits contamination in the letters from other script registers as we shall see.

In 10.2 I showed that changes in letters were very often caused by a reduction in the number of pen-lifts needed to form the individual letters. This meant that many strokes were fused together, rather than written in separate parts. Commonly, those letters which at Vindolanda were formed in two movements with two separated strokes are, in the Dura papyri, now written in one single stroke. Joins, whether between individual letter strokes or between separate letters, are a natural phenomenon that is to be expected in fluent writing. Indeed, for Teresa de Robertis, if a script is to be styled 'cursive' it must satisfy two necessary conditions:

i.   letter-forms should have been simplified in a process of stroke reduction; and

ii.   there should be ligatures between neighbouring letters (de Robertis: 2007, pp.30-1).

Both earlier and more developed ORC have been termed 'cursive'. This can probably only ever be a relative, rather than an absolute, property. But the number of cursive features in the

Dura-Europos papyri is far greater than that of most documents written in the first century.[190]

There is also plenty of evidence in the Dura hands for one slightly less expected method of stroke reduction which, because it is so frequent, is worth setting out in a little more detail.

Mallon had correctly observed that in formal Roman writing the individual strokes of letters were pulled (from top to bottom or from left to right) and not pushed (Mallon: 1952, p.22). Kinetic factors make this very largely true for anyone writing with a Roman stylus and the case holds good too for a scribe writing a formal hand using a relatively broad-nibbed pen. For a scribe with sufficient dexterity and lightness of touch and who wrote with a fine-nibbed instrument (say a reed or a quill), one rounded (or a little blunted) rather than sharp, things were different and became increasingly so in Roman writing as it developed. Using such a pen, having once drawn down a stroke to its base he could reverse its direction entirely, to draw the line – by sidling – back upwards.[191] Strokes incorporating such a radical change of direction have recently been called by Noordzij 'returning strokes' and their importance, and that of the 'upstroke' generally in the history of Roman writing, stressed by him and also by Gumbert (2002; Noordzij: 2005, p.39).

Thus, if we compare <s> as it occurs at Vindolanda (and occasionally at Dura) and <s> in P. Dura 98, their principal difference can be seen to reside in the fact that the execution of the

later letter in a single stroke was made possible by the introduction of a change of direction, usually by forming a small clockwise loop, at the base of the stem, the upstroke.[192] We have already seen in 10.2 the upstroke

---

[190] Interestingly however, she also comments that in the progression of NRC, due to the altered shape of the letter-forms, ligatures between letters are far fewer than they had been in the third century, and that there is a radical fall-off in external ligatures (de Robertis: 2007, p.41).
[191] See above p.216.
[192] The 'cusp' that sometimes occurs in this position uses a rapid sideways movement or flick of the pen which represents even greater economy of movement.

introduced into several letters and letter combinations: <m>, <n> and <r> for example, and in the 'external' ligature between <e> and <x>.[193] All such joins represent both an economy of effort for the scribe and a means to attain greater speed.

Over the Dura period, upstrokes continue to be introduced into several other letters.   Thus if we compare the Type 2 <t> as it occurred in P. Dura 98 (c. 218/9 CE) with the same letter in P. Dura 95 (250 CE) the form is preserved at least approximately, but the later scribe does not lift the pen and writes the letter in one continuous movement. In the terms used earlier, the formerly 'invisible *ductus*', the movement of the hand, can now be seen in the shape of the letter. This phenomenon also occurs in several other letters in the development of the standard clerical hand at Dura-Europos, Type 2 <e> for example. Ligatures, both external and internal, such as are frequent in the hands of the Dura scribes throughout the period, illustrate the easy writing movements of the scribes.
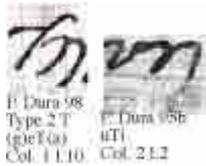
Although the scribes are working at great speed and elide many strokes together (e.g. <etEn>), the letters retain at least relative form and legibility. In fact the morphology of the letters anticipates the possibility of ligatures between separate forms. Each letter has built into its structure a specific means by which it can join to the letters that both precede and/or follow it.[194] It is difficult to know whether this circumstance has arisen as an effect of the repeatedly-made writing movements, or whether the letters have actually been specifically designed so that they should join. In truth there is probably a continuous dialectic between the two processes.

---

[193] Joins between composite strokes of letters have recently been called 'internal' ligatures. These are distinct, in the description, from 'external ligatures' which join otherwise separated letters (de Robertis: 2007, p.31).
[194] With the exception, as mentioned in 10.2, of the letters with long, descending stems: <i>, long <p> and <q>.

Rosemary Sassoon, who has studied much modern handwriting, notes that contemporary adults with mature script naturally develop, without being specifically taught them, ways of writing more cursively many of their letters and particularly the joins between them (Sassoon et al.: 1989, p.289). People devise their own methods for writing more quickly which include reduction in the *ductus* of letters and innovative, quicker ways in which to chain them together. She insists also, throughout her many writings, on the importance of designing model letters for learners that will facilitate and encourage the natural flow of the writing movement.

> 'Letters that move correctly can be 'neatened' at any stage by slowing down and concentrating only on appearance, but neat letters with an incorrect movement will prevent joining and cause faster writing to become illegible' (Sassoon: 2003, p.12).

Thus letters should incorporate entrance and exit strokes in their design so that as their writers begin to pick up speed they will naturally attain a well-joined, legible cursive hand which allows for the reduction of pen-lifts. For Sassoon, 'internal' and particularly 'external' ligatures should be implicit in properly designed learners' letters.

Most letters in the Dura clerical hands, as shown in 10.2 and as de Robertis has now pointed out, end in a short horizontal stroke drawn on or close to the top writing line which joins a similar stroke leading into the letter that follows, such that it is hard to tell where one letter ends and the next begins (de Robertis: 2007). This means that the standard letter-forms taught to the scribes who wrote the papyri had, built into their forms, as it were, specific rules for their future joining in that most letter-forms are equipped with a short entrance and/or exit stroke to enable it. This is an illustration of the care that went into the functional design of the clerical hand.

Nonetheless, the letter <n> as it evolves in the Dura papyri suggests that external agencies rather than entirely natural evolutionary processes might have had an influence upon it. In P. Dura 98, the letter was a recognisable ''capital'' form the second part of which rode along the top writing line. However, the letter had two difficulties which perhaps led to its discontinuation, both of which are illustrated in the figure below. Firstly, when it preceded a tall letter, the extended reach of the ligature was awkward and made an unattractive shape; and secondly, probably more importantly, it was often so similar to <m> as to threaten comfortable legibility.

P. Dura 115, Frag. b., l.6
(turma) aNtoNiNi

P. Dura 98,
Col. 1, l.13
oNei

P. Dura 98, Col. 1, l.13
(a)Ntei

The new style <n>, shown on the left, appears first in the work of the scribe of P. Dura 115 (232 CE) (who also may have written, to judge by the handwriting, P. Dura 83 on its reverse) and it is probably in general use after that date (cf. P. Dura 95 <etEn> p.234 above). This scribe has an attractive, careful hand. However, in his representation of <n> he seems to be observing a new rule. Instead of ending the letter with the upstroke, as was earlier customary, once having written the cross-stroke he turns his pen, and forming a corner on the now square-ish form, pulls the stroke back down to the baseline. Since <n> now ends with a downstroke, it follows the rule that after downstrokes the pen should be lifted. It is clear that a much tidier, more readable letter is formed in this way.

While obviously encouraged by the scribes' easy writing action, ultimately the reason for the creation of the new form must remain mysterious. Gumbert observes the same form occurring in Greek scripts of the second century BCE (Gumbert: 1965). Perhaps because of its similarity to the 'capital', the new <n> was easily acceptable. Once it was achieved, the

rounding of its shape into the small minuscule form still familiar to us today was but a small further step to take. It is visible in that very form in P. Dura 105, a papyrus written just some twenty years later.

The <ni> formation that uses the old-style <n> in the example shown is the only occurrence in the corpus and should probably be regarded at that period as exceptional. It may have been encouraged by its final position in the line in the particular example, for letters at line-endings are regularly abbreviated in all the papyri and also flourished with longer strokes where possible. It is noticeable that Hand 6 in the personal subscription to P. Dura 26 (227 CE), and that of Laronius Secundianus in P. Dura 125 (235 CE; see 9.2 above and Plate 19) do not seem to have assimilated the new style <n>, although Secundianus perhaps shows uncertainty about it. This may mean these writers had been learned to write before the new form was taught in elementary writing lessons, or it may mean that it was devised and taught only, or at least particularly, in scribal classrooms in this period. Further investigation of this point in other sources might prove instructive.

Another letter also begins its development towards a more obviously recognisable minuscule form in the Dura period and that is the letter <u>. This letter becomes generally larger and rounder in shape, and losing its superscript position, comes down to rest on the baseline. The second scribe in P. Dura 105 in particular, finds himself in difficulties when he tries to join his new <u> with a following letter. Instead of moving the <u> straight into the downstroke of the following letter (<r>) as he would have done earlier with the superscript letter, he seems confused about the join and introduces a redundant looped downstroke. No further development of <u> can be traced at Dura-Europos, but the form in P. Dura 105 is already close to the NRC form.

There are several other changes in the Dura letters that ought to be mentioned here, but which due to space considerations cannot be. But a special case should be made for the letters <a> and <b> which in NRC have proved difficult to explain as natural developments of ORC letters. Both were instrumental in Mallon's denial of an evolutionary link between the two different eras of Roman script (Mallon: 1952, esp. Chapter 4). For Tjäder, <a> is the defining letter that distinguishes NRC from ORC (Tjäder: 1985, p.191). The Dura papyri may now provide enough information to explain its development, given the understanding of *ductus* and of the natural effects of cursive writing such as have been described above. I will now set this out, before closing the section with a brief treatment of <b>.

Some influential suggestions (made in the mid-twentieth century) posited the Greek *alpha*-form as the source of the Latin NRC <a> (Marichal: 1950; Marichal: 1956; Marichal: 1968/9, with further references). There is indeed an *alpha*-like <a> in several Dura papyri, including P. Dura 105 (and arguably P. Dura 95) in my small selected group. This is not surprising given the Greek environment of Dura-Europos and its many bilingual writers and we can acknowledge a certain Greek influence (see also the *alpha*-like <a> in the hand of Laronius Secundianus in Plate 19).[195] Indeed, the *alpha*-style letter is a variant form of <a> in the later Dura clerical hands (perhaps encouraged by the less expert, less well-trained scribes of that time) which *coexists* with the form developed in Latin writing, and in some cases coalesces with it. There is, however, a distinctly different origin for each of the two forms.

The change in the Latin letter <a> consists in the switch from the two-stroke letter of ORC - in the formation of which the hand passes from stroke 1 to 2 in a clockwise direction – to the NRC letter which, with an open bowl, is written in an anti-clockwise direction in one fluent

---

[195] Also found in P. Dura 60 (208 CE) noted but regarded by him as 'an exception' (Tjäder: 1985, p.190 and Note 7).

stroke and ends in a small joining stroke to the right.[196] A change of stroke direction from clockwise to anti-clockwise takes place in the change which is hard to account for.

In ORC <a>, the downward oblique tongue is written first, and the pen lifted and taken upwards ready to pull out the second stroke (A-ii). In A-iv however, the writer has left his upward pen-stroke, properly the 'invisible *ductus*', visible. A very similar process occurs in Secundianus' hand shown in the fourth illustration on the figure below (from P. Dura 125). In fact, the common occurrence of this phenomenon in rapid writing gradually alters the concept of the letter in the minds of its writers and readers (as had happened earlier with <d>; see 10.2 above). The line of the 'invisible *ductus*' comes to be thought of as a proper part of the letter. In Gumbert's terms, a gradual 'metamorphosis' takes place in its shape and in its ideal schema (8.3 above). 'Metamorphosis' and 'metanalysis' are complementary processes however, such that once a schema is changed, a *ductus* that would not previously have been thought possible may now be adopted. Thus for <a> it was a logical step, quicker and easier for the writer, to reverse the direction of the former 'tongue', writing it as an upstroke that changes direction at its apex to pull out the second stroke that ends the letter.

The letter thus formed, as it develops in NRC, is distinct from the Greek *alpha*-style <a> in its absence of a loop at the change of direction at the top of the letter (e.g. as shown in the third illustration below). At Dura, there is a degree of conflation between the two (as also illustrated). The confusion is to be ironed out over the coming fifty years and the bowl of the <a> widens and becomes rounder with the progression of time. The

P. Dura 95b, Col. 1, L33
mAiAe

P. Dura 105b, Col. 1, 19
Apo

P. Dura 105b, Col. 2, 110
Ar

P. Dura 125, 2nd Hand, 19
kAi

P. Dura 125, 2nd Hand, 19
Ae
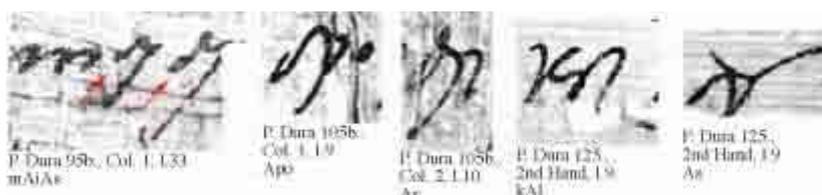
[196] Although some writers use a variant which has an *alpha* shape. The bowl in the developed minuscule letter later becomes closed, so that the NRC <a> is the lower-case <a> still used by most European hand-writers today.

NRC form of <a> then perhaps owes its derivation to a prototype formed in the natural ligature that occurs in a rapid cursive execution of ORC <a>.

It is also noticeable at Dura-Europos that the tribune Secundianus seems to confuse Latin and Greek <a> (in the fourth illustration in the figure). Tjäder illustrates several oddly shaped <a>s (some also occurring at Dura) which indicate for him that ORC is in a 'stage of transition' at that period (Tjäder: 1985, p.191). The confusion may be amplified by the similarity in appearance between the Greek and the Latin-derived forms, and the true NRC <a> perhaps also owes something to Greek despite its later separate development.

In a similar way Marichal, in a study of graffiti in Rome dated c. 260 CE, found that uneducated people were hesitant about the proper *ductus* of <b>, such that 'one could not say whether they were intending to write a minuscule <b> or the ORC form.'[197] He describes their representations of the letter as not transitional, but as hesitations between two co-existent possibilities (Marichal: 1953, p.361). The ORC <b> is quite different from the NRC <b> since, as we saw in 10.2, it has its bowl on the left-hand side of the stem. The NRC form has its bowl on the right, as does our modern minuscule <b> today.

Marichal spent several years contemplating the origin of <b>, and in my opinion he correctly described its origin as being due to an important change of *ductus*. We saw in 10.2 that <b>, in the Dura period of ORC, has become increasingly upright and has lost its earlier sinuosity. It is also very often written so cursively that the up and downstrokes of the ascender stem are both visible. Marichal shows that at some point the starting-point of the letter (formerly the bowl) became the top of the ascender. Writers first pulled down the entire length of the letter and then emulated the shape of the earlier bowl by adding to the stem a single curved line to

---

[197] '*qu'on ne saurait dire s'ils entendaient écrire un b minuscule ou b cursive ancienne*'.
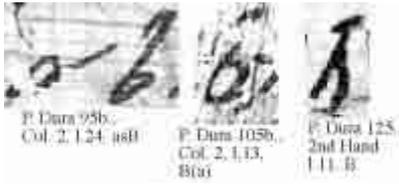
the right of the lower stem (Marichal: 1967/8, p.299).[198] This *ductus* is clearly easier and quicker, because it avoids the duplication of the up and down stroke used earlier to form the stem. The Dura evidence supports his conclusion.

The new <b> first occurs at Dura in the subscription of to a letter in P. Dura 66 LL (col xii.) dated to 216 CE according to Marichal. I have no digital image of this papyrus and so cannot see the *ductus* clearly. It seems to be joined to the letter preceding it via a hook on the left of its stem (as in the first example from P. Dura 95 shown above) but unfortunately there is a hole in the papyrus at this particular point. The right-hand side of the bowl has a stroke leading out of it to the right so that it joins also with the letter following it next in the line. Again, as unfortunately in all the instances of the new <b>, the *ductus* cannot be seen clearly (although a personal inspection might help). However, the new shape <b> is certainly present at Dura-Europos from a relatively early period and the tribune Laronius Secundianus certainly seems to use the new *ductus* in his representation of the transitional ORC <b> (in the third illustration).

By the end of the Dura-Europos period the clerical hand is probably reaching the limit of easy legibility. The clockwise chaining process whereby letters loop up from the baseline and join at the top (as described in 10.2), increases over the period. The general growth of fluent ligatures may eventually have made it essentially unworkable. Such reasons were very probably at least partly responsible for the redesign of <n> shown earlier. The rapid cursive writing action increasingly eroded the forms of many letters and differently-styled letters were

---

[198] This paper treats this subject in great detail which cannot be elaborated upon here, but the derivation of <b> is a most interesting topic for further research.

also being written in other areas of Roman life, by other types of writers, the influences of which began to creep into the now fossilised clerical hand.

I think the change from ORC to NRC was at least partly a deliberate reorganisation of writing that took place shortly after the period of the Dura papyri. But no changes in letters can be completely without earlier precedents – since otherwise how would one know how to read them? The roots of several of the new letter-forms can be seen in the consistent cursive execution of the professional scribal soldiers at Dura-Europos.

11. CAMP SIGNAGE

We have seen in earlier chapters the important role that the clerical soldiers of the *Cohors XX Palmyrenorum* played in producing the unit's standard papyrus documents, but in any military camp there was probably an equal preponderance of publicly displayed signs and notices which were in their own way equally vital for the effective functioning of camp daily life. Who it was precisely, among the soldiers, that produced public notices, (usually) more ephemeral than those for which specialist stonemasons were enlisted, is not known. There is some evidence at Dura-Europos however that could suggest that the clerks themselves were also capable of carrying out such basic signwork and lettering tasks as would have been sufficient for in-camp display.

On the east wall of room W12 in the clerical complex was a text painted by an *actuarius* of the *Cohors II Ulpia* named Mocimus (mentioned in 4.1 and shown in Plate 22; Stauner: 2004, p.416, QNr. 398; TEAD-V, pp.152-66, and esp. 226-9, No. 561, Pl XXIX,2). Measuring 68 by 75 cm. and dated to 194 CE, it is executed in red, relatively informal capital-style lettering in two different sizes: c. 7 cm. and c. 3 cm. in height. It commemorates a sacrifice offered to Jupiter Optimus Maximus and Minerva for a victory of Septimius Severus Pertinax whom it also honours. As reproduced by Stauner, the text reads as follows:

1.   '*I(ovi) o(ptimo) m(aximo)*
        Conservatori [cete]-
        risque dis inmor[tali]-
        bus pro salutem et vic-
5.   *tori(a) d(omini) n(ostri) Imp(eratoris) L(ucii) Sep(timi) Severi*
        [P]ert(inacis) Aug(usti) II [[D(ecimi) Cl(odii) Alb(ini) [Caes(aris)] II]]
        [Min]ervae sanct(ae) sacrum feci[t]

> *[...]eus Mocimi actuar(ius) n(umeri) per Tre [b]-*
>
> *ium Maximum trib(unum) coh(ortis) II Ulp(iae) eq(uitatae)*

10.   *[vo]tum solvit libens l[aetus]*

> *meruit'.*

The *actuarius*, as we have seen, is usually second-in-command in the *officium* to the *cornicularius*. It seems that he had a role in overseeing the ceremonies for Minerva, who was the protecting divinity of craftsmen and patroness of guilds (Hoey: 1940, cited by Reeves: 2004, p.135), and for Stauner, the deity of military clerks (Stauner: 2004, p.244, QNr.28 with further references). He cites fifteen further dedications made by military clerks to her, amongst which all those dated are of the late second/early third century. Noting that Minerva is also the goddess of victory, Reeves describes the '*Quinquatrus*', a five day festival in her honour, which is included in the Dura calendar of festivals, the papyrus *Feriale Duranum* (P. Dura 54) (Reeves: 2004, pp.148-50). Perhaps it was during her annual celebrations that the clerks held ceremonies for her in W12 as commemorated in Mocimus's text.[199]

The presence of this invocation in W12 may suggest a ritual that, beyond its overtly religious function, served also to reinforce and cement the professional, working solidarity between the clerical soldiers. W12 could, at least at the time of the painting of the *dipinto*, have been a small, scribal collegial room used for such activities. Together, the clerks perhaps regularly participated in such celebrations, thus separating themselves in their activities from other soldiers. Clerical *collegia* are well attested. The famous collegial clerical inscription that survives from Lambaesis has already been mentioned (6.1 above). For Harris, following earlier literature, the large fee it records as paid by the clerks to join it shows that clerical posts were well-paid and that the right to join their guild would have been a privilege. The

---

[199] The excavators found other Roman period graffiti in this complex (see above 4.1) much of which also suggests 'religious' activities.

right to form guilds in itself (perhaps encouraged under Septimius Severus) was granted only to special posts and specialists (Harris: 1989, p.218, Fn 219). If this is the case, it is a further attestation of the importance the army attributed to the clerical professionals at this time, being prepared to extend them extra perks.

Pegler describes such professional associations as having

> 'features designed to promote the group to the exclusion of those outside' (Pegler: 2000, p.37; also Ginsburg: 1940).

He also argues, on the inscriptional evidence, that they probably became compulsory. This suggests that the state supported the clerical *collegia* and encouraged their separation from the other troops. Their special treatment and acknowledged specialised literate skills would have made them subject to the envy of the ordinary men and also endowed them, whether grudgingly or otherwise, with a degree of respect.

Whatever the story that accounts for its presence, the key point of interest here is the easy ability shown by Mocimus in writing (presumably with a brush) his relatively enlarged letters. His text is well set out and perfectly legible in the quality of its lettering. Its presence may indeed be evidence that the clerical soldiers were instrumental in supplying the practical need for larger lettering as would commonly have been used on notices and signage throughout the literate environment of the Roman camp.

There is no doubt but that the clerical soldiers would have been taught at some point in their training a standard 'capital' letterform: larger letters generally majuscule in form (i.e. contained inside head and baselines) and broadly comparable, in *ductus* and form, to those

letters that we today use.[200] The alphabet of the '*Feriale*' (P.Dura 54) has already been illustrated. We have also seen that of PSI XI 1183a, and referred to those in P. Lit. Lond. 184/P. Mich VII, 449. Several military papyri contain capitals used generally for headings or for 'highlighting' of names or ranks (such as in Princeton GD7532R). There are many others, some of which are written throughout in majuscule letterforms, while in others their use is more restricted.[201] Marichal provided a list (Marichal: 1950, pp.134-137) and to this many others could be added. 'Capitals' used in documents are written more or less 'cursively' in the particular case and the capital lettering ([online] P. Michigan 164 [APIS Advanced Papyrological Information System, accessed 12th February 2010]; Sanders :1931) for example, is broadly comparable to that used in the Mocimus *dipinto*.

Figure 15
The *Principia* at Dura

A further *dipinto* was found in the *principia* at Dura-Europos, which was produced, it tells us, by clerical soldiers. This building, marked '*praetorium*' in the Figure, follows the standard design for such buildings in having small workrooms behind the main hall. These would commonly be used particularly by the administrative staff and by soldiers concerned with the garrison's paperwork (Petrikovits von: 1975, pp. 68-78). The presence of the *dipinto* in one of these rooms seems to confirm the administrative activity taking place there.

First published in (TEAD-V: p. 224, Nos. 560 & Pl. XXVII, I) and shown here as Plate 23, this piece is dated c. 222-223 CE and was apparently the work of Julius Domninus, a *librarius*

---

[200] It may be that some learners in the civilian world would also have been taught 'capital' letters alongside a more minuscule, cursive script or possibly as an alternative. An interesting example of such a lesson is in P. Ant. 1 (CLA S, 1705) which Lowe dates 4th-5th century but which may well be earlier.

[201] For example, again far from exclusively and in no particular order: P.S.I. XIII, 1307; P. Ryl. 79; Berlin P. Inv. 14095; Berlin P. Inv. 11596R; P. Gen. Lat. 1r.; P. Ant. 41r; P. Aberd. 132; P. Vindob. L4.

of the *Legio IV Scythica*, or possibly of one of his four clerical assistants whom it also mentions.[202] The text, painted onto a block of plaster, also approximately 75 cm. in height, and 30 cm. wide, was found lying on the ground in what is described in the Report as 'the corridor between rooms 8 and 9': probably to be understood as the area marked 3 on the detail of the plan shown in Figure 15. Unfortunately, the block seems no longer to exist and the single surviving photograph of it is not at all clear. The whole has been dated 222-223 CE based on some Aramaic letters upon it, not visible in the photograph.

The text, as given by Stauner, reads:

1.   *'Impera[tori]*
       Caesari [---]
       bona fortuna nobis
       summo summo
5.   *S(enatui) p(opulo)q(ue) [Romano]*
       S(enatus) p(opulus)q(ue) [Romanus]
       spem bonam
       Iulio Domnino Lib[rario] et
       Aurel[io] Antiocho
10.   *et Donnio Pasia*
       et Septimio Sigilliano
       et Aurelio Magno
       adiutoribus
       Leg(ionis) IIII Scy[thicae]'.

Its meaning is somewhat mysterious. The presence of the *librarius*, Iulius Domninus, heading up his team of four helpers (*adiutores*), suggests that these men, all legionary soldiers, are engaged in clerical work of some kind. The first five lines are perhaps their good fortune wish to the Emperor, the people of Rome and the senate. The text goes on to note their

---

[202] Stauner: 2004, QNr. 397, pp.415-6.

loyalty to the state and the hope they cherished of betterment in the army, and then lists the names of the legionary clerks, one of whom, I assume, painted it. I contend that the text is rhetorical and formulaic and relatively insignificant. Quite incidentally, it suggests something of its writer's state loyalty. Although the sentiment expressed may well be genuinely intended, I suggest that the text was merely practice material for the letterer clerks and that its content, in this particular instance, is less important than the activity to which it gives witness.

The piece is written, brush-painted, in capital letters throughout but the capitals are in different styles and sizes. The '*SPQ*' in particular is carefully painted in a formal monumental letter that contrasts with the more rapidly-made and markedly smaller letters elsewhere. The <q> is 28 cm. in height and the text, from line 7 onwards, is written inside its round. The excavators say - not visible on the photograph at all – that the name of the Fourth Scythian legion is written again, in small letters 1 cm. high, between '*p(opulo)q(ue)*' and the large <p>. Below line 5 and reaching into the <q> is written <cy> in letters 0.95 cm. high. Scratched in below the first line is '*senatu*' in letters 0.5 cm. high. The whole block seems to bear layers of plaster or whitewash which suggests it has been more than once painted over. On top of the text itself a number of *graffiti* squiggles and lines have been added. There are also, beneath the text as it stands, hard-point outlines of what look like letter-stems, like those of the capital forms of the letters <p>, <r> etc.

Also, just visible on the reproduced photograph, there are hard-point drawn outlines to the curves of <s> and of <p>. These have clearly been used as the guiding framework for the painter who has followed and over-painted them with his brush. All statements about this piece need to be hedged with extreme caution in the absence of sight of the artifact itself. One obvious feature, however, is the very roughly-drawn hard-point guidelines between which the

letters, at least approximately, sit. It could be the case that someone has taken a unit of measure, marked off the line ends and roughly joined the marks, drawing the lines by eye with a hard point or stylus across what is now the text space. For larger and smaller sizes of lettering the interlinear space (i.e. the space between the bottom ruled line of a scriptline and the top line of the following scriptline) and letter height are consistently maintained, at least approximately, and is possibly, in all cases, a proportion of the height of the letters. Quite possibly the scribe uses his guidelines as a device by which to scale up and scale down the size of his letters. This might be a useful technique in making letters fit a specific area, say a wallspace or a wooden noticeboard.

The idea of a geometrical underlying framework by means of which good quality formal Roman inscriptions were regularly produced has been investigated and discussed in great detail with specific illustrations by letter-cutter Richard Grasby (1996: 2002: 2009). It seems that at least for these two letters this technique has been used here. He uncovers principles that work to preserve the same Roman letters with minimal craftsman-related variation, when they are produced by lesser skilled craftsman all over and throughout the Empire. The only necessary tools, he argues, are a ruler, a pair of dividers or compass and a hard point or a piece of chalk – and of course, a chisel-edged brush. Then, using a formula for constructing a grid-square template based on a unit of measurement (M) that is equal to the width of the brush when this is held perpendicular to the horizontal at a given constant angle, and based on the inner geometry of the square, each letter is simply mapped onto the grid.

The demonstrated widespread distribution, in Grasby's work, of knowledge of the formula across the empire is remarkable. It suggests that the process must have been centrally instigated and authorised. The precise formula varies slightly over time and region, but the

principle - moderately skilled craftsmen, basic tools and a geometrical template - is constant. Inscriptions with lettering constructed in this way Grasby terms 'regulated'. They date from the Augustan period and are to be compared with 'unregulated' inscriptions, which are freer and without the underlying gridwork.[203] By the third century, the system perhaps lacks some of its earlier refinement but is, at least in a simple manner, the 'Julius Domninus *dipinto*' suggests, still in operation.

I mentioned above the scoring around the large <s> and <p>. I asked Richard Grasby to look at this and he indeed perceived a fairly complicated geometry based on an underlying grid with square root 5 rectangles within it, with possibly compass-constructed circles for letter curves that fit within them.[204] He also found that the ratio of the stemwidth of <p> to the height was 1:13.5: as he wrote, 'an unusually narrow and graceful letter', and that the quality of the brush overpainting was 'marvellous'.[205] I suggest, in conclusion, that the *librarius* Julius Domninus produced this *dipinto* himself in the course of teaching his assistant clerk students a technique; a technique for scaling letters to size and for planning out and painting letters on signwork. Furthermore, given the earlier repeated coats of whitewash on the block, the lesson was probably not the first to have been carried out on it but was simply the latest and therefore the most visible.

The evidence offered by the two texts discussed here forces a new consideration of the existence and identity of a craftsman responsible for the design of at least some inscriptions and known, in palaeographic literature at least, as the '*ordinator*'. Joyce and Arthur Gordon

---

[203] This distinction broadly corresponds to the Gordons' opposition between 'guided' and 'freehand' inscriptions (Gordon & Gordon: 1957, p.74).
[204] Grasby confirmed this to me, after my having sent him the photograph, in correspondence (February 2007).
[205] I thank Richard Grasby sincerely for these comments which are reproduced here with his kind permission.

(Gordon & Gordon: 1957), specifically treat the physical aspects of inscriptions and particularly the palaeography of the lettering. With their comment

> '[e]pigraphists seem agreed that the stonecutter did not produce direct freehand lettering with his chisel, but followed lines drawn or written beforehand' (Hübner: 1885, cited by Gordon & Gordon: 1957, p.70),

they allude to the existence of a craftsman responsible for the design and layout of an inscription before the arrival of the cutter, and who supplied him with a framework for his text which he was subsequently to follow with his chisel.

Mallon, on several occasions, also argued for the existence of this craftsman and he is responsible for the coinage '*ordinator*' (Mallon: 1952, p.58). The word is a back formation he derived from a verb in a stonemason's bilingual shop sign found in Palermo (CIL X, 7296), the Latin text of which read,

> '*tituli heic ordinantur et sculpuntur*' (Mallon: 1952, p.57; also Susini: 1973, p.10).[206]

Interestingly Lassus (1959: cited by Susini: 1973) quotes Augustine using a mosaic metaphorically to illustrate a particular argument and referring to its '*ordinatio*' and '*compositio*'. Lassus understands '*ordinatio*' similarly here to refer to the drawing or painting out of the design.

Mallon proposed three stages in the creation and fashioning of a Roman inscription. Firstly, the text is composed (sometimes taken from a sample book of suitable phrases in the mason's possession (Cagnat: 1889) and written out in ordinary handwriting (Mallon: 1952, p.58).[207]

---

[206] 'Inscriptions *designed/laid out* and cut here.'
[207] '*écrit en écriture commune et courante*'.

Secondly, taking this, the '*ordinator*' maps it onto the stone in a 'monumental' letter, invariably (at least in finer quality works) a capital form. Thirdly, and finally, the cutter, following the design left by the '*ordinator*', chisels in the letters. Mallon is keen to stress that the cutter's only contribution to the inscription is the practical one of following and realising the marks of the '*ordinator*' (Mallon: 1952, p.58). The chisel has no creative input into the style of the piece, this having been entirely pre-determined by the marks of the '*ordinator*'.

In a final stage, the incised letters were sometimes at least over-painted with a brush. At Dura, texts in painted letters are possibly more ubiquitous among the discoveries than are the carved inscriptions and many carved letters reveal that they had also once been painted.[208] Such is a finely-cut dedication left by two legions in the Mithraeum which has underneath it a blank frame inside which were probably once painted letters, now disappeared (TEAD-V:, p.221, No.557, Pl. XXIX, 1). This is a comparable piece to a statue found at Gigthis that once had a painted inscription on the lintel and the large space of the plinth of which nothing now remains (Constans: 1916, Pl. VII).[209] Many other such painted *tituli* have undoubtedly gone unnoticed in the epigraphic evidence elsewhere in the Empire. Susini gives several examples of epigraphic monuments 'unfinished' in this sense, being completely provided with all the structural and decorative elements of their day but without the inscription (Susini: 1973, pp.34-6). For an unfinished inscription from Dura see TEAD IX, 1, p.176, No. 989 and Pl. XXI (cited by Mallon: 1955).

Mallon also raises the possibility that the '*ordinator*' and the 'cutter' are, at least in some cases, the same person. This is a point also made by Susini who refers to Hübner's list of inscriptions (generally of a fourth century date) which carry the phrase approximately '[name]

---

[208] Interestingly also, many cruder *dipinti* and graffiti were also scratched out first before being over-painted. This may suggest wide general awareness of the principle of 'ordination'.
[209] Gigthis itself is built in brightly coloured stone, much of it also painted.

both wrote and cut this' (Hübner: 1885, cited by Susini: 1973, p. 11).[210] This therefore must have been the case for at least some texts out of the many thousands produced.

As described earlier, there is some flavour of geometric construction in the lettering of Julius Domninus, while in that of the *actuarius*, Mocimus, this is less immediately visible. The apparently regular difference between the two sizes of letters (those in lines 2-4 and 6-10) is interesting and may have some significance. But the key point to make is that not every instance of brush-painted lettering in a Roman environment should be regarded as merely the layout for an inscription that was never cut. Quite the contrary, I believe, is actually the case. The carved text is probably far less common in any situation than the board, usually wooden, that bears a more or less mundane painted sign. Given the vast amount and range of graffiti found at Dura itself, and far better-known, at Pompeii; given also the enormous evidence for thick clustering of inscriptions throughout Roman civilised areas, how can it not be the case that the wooden noticeboard – far easier and quicker to construct and erect (as also to remove) would not have been at least equally numerous on the walls and on signboards? It is our loss that invariably these have not survived but yet we must assume their existence.

For the inscriptions however, as Grasby has recently observed, their range, both stylistically and in modes of production through the ages is wide (Grasby: 2009, pp. 14-15). Some are probably the work of one man throughout, while others involve teams of co-ordinated workers liaising with architects and building engineers to produce a fine monumental carving say for a figurehead building. As he notes, it can be anticipated that a different relationship between the craftsmen 'existed in the creation of each separate inscribed text'. Mallon, for example, detailed three stages and the potential involvement of three different craftsmen and showed that this was sometimes the case (Mallon: 1952, pp. 144-152). The same cannot be

---

[210] '*Scripsit et sculpsit*'.

said for all inscriptions and these vary in the individual case. The historian's job is to try to unpick the stages each time in the actual instance. Grasby, with his practised lettercutter's eye, has had some success with this. He comments

> 'it is interesting to detect which of the exponents of the craft skills, the draughtsman, the brush letterer or the carver contributed most to the final outcome.' (2009, p.16)

Mallon wrote several papers in which he compared letters on stones with similar examples on papyrus (Mallon: 1953: 1955: 1961). He argued in these cases that the similarity of the letters to the common handwriting of the time showed the '*ordinator*' was a scribe, or someone who knew how to write. Higgitt has more recently argued that there was a similar relationship between lettering on stones and in manuscripts in the Mediaeval period (Higgitt: 1990). In his particular survey, he also concluded that the scribes were probably responsible for the layout and design of memorial stones as of that of the books. He drew attention in particular to very similar *mise-en-pages* and decorative elements on each.

On the evidence of the two *dipinti* above-described, I believe it is feasible to suggest that it was the task of the clerks in the *officium*, at least sometimes, to produce notices for army use. For this reason they learned to paint, and even geometrically construct, letters in large sizes suitable for signwork for use in the running of the camp. Not only were the clerks responsible for drawing up and writing out the army's standard papyrus documentation; they were also essential to the wider more accessible form of communication still today as important and well-used as ever, the authoritative commonly instructive painted sign. They may even also sometimes have laid out formally carved inscriptions.

CONCLUSION

I began this thesis by drawing attention to the symbolic properties of written language (above: 1. The Argument). These are present to varying degrees regardless of the particular medium in which the language is presented. The precise appearance of the scripts in use at any one time is closely related to the prevailing culture, and, as expressed by Marc Smith, writing 'itself documents social history' (Smith: 2002, p.2) and I tried to express this idea at the outset.[211] The sections following in the thesis gave necessary background detail regarding the conditions in which the Dura papyri were written. Having dealt with the issues here in some detail, then in the second part of the work, arguably the core of the thesis (which I see as beginning with Section 7), I tried to show some of the ways in which the script of the Latin documents from Dura-Europos signalled or drew attention to their status and function as army documents. In this connection also, Marc Smith has coherently set out the underlying problem. It is precisely that

> 'we [as outsiders] do not know which characteristics differentiate two related types
> [of writing] in the eyes of the writer' (Smith: 2002, p. 6).[212]

The differences that are perceptible to modern eyes provide a starting point however, and these I began to consider. I shall also, in this conclusion, bring together and briefly reconsider some of the further issues raised in the later sections of the thesis about the context and the use of Roman military scripts.

---

[211]'*est elle-même un document d'histoire sociale*'.
[212]'*nous ignorons quelles caractéristiques differencient aux yeux du scripteur deux types proches*'.

In Section 7 I introduced the idea that there were, among Roman military documents, certain recognized standard document types. This idea is not in itself entirely new, and has recently been comprehensively discussed by Stauner (2004) and even more recently reviewed, queried but ultimately reinforced by M.A. Speidel (2007). However, I have been able to add to the arguments raised by extending them to cover the handwriting or script used in military documents, which, I argued, was produced military-wide in essentially the same sloping cursive form (p.142 above and Plate 14). Not every reader of this thesis will perhaps be convinced by my discussion and indeed I admit that the statements of fact made are bold, and that my enquiry should properly be extended so as to consider, in comparison, many other instances of Roman writing (besides the Dura papyri corpus which was the focus of interest here). This I hope to be able to do in future work. Only by more detailed, more comprehensive research can the case for overall unity of practice and a shared script-identity across the military be validated.

Also in Section 7, I introduced and discussed Cencetti's distinction between the two varieties of script that he called the 'official' and the 'private'. Cencetti's opposition between the two varieties seems to be applicable to the evidence of the Dura papyri. The standard military documents among the papyri appear to belong to this 'official' category while the handwriting of the few non-clerical soldiers at Dura-Europos, although there is only a small quantity of evidence, pinpoints the distinction in script and in handwriting capacity between amateur and professional writers. This latter aspect is given some considerable attention in Section 9 of the thesis, but on this question also, I feel, that both the material and the discussion prompts far greater enquiry than I have been able to give it here. In future work I should like to develop a rationale and a methodology for differentiating the two types of writer with their two distinctly identifiable script varieties.

To be able to draw up a set of principles such as would distinguish between the work of amateur (in my terms 'untrained') writers and those writers professionally or clerically trained, might be considered a *sine qua non* for a developed discipline of Latin palaeography. This is not an aim that could have been satisfied in the focus upon one corpus of documents as here presented, and any further discussion must ultimately consider a far greater number of documents of more diverse provenance and age.

I also, in Section 8 of the work, gave some attention to the overall unity of Roman script. This I attributed to a commonly shared underlying model or schema for script with which, to some degree, all writers were familiar. The schema can be traced in the ductus and in the development of the same. Here, also I tried to bring out the little that is known about Roman script differentiation according to its context and particularly to the identity of the producer. I made some assumptions here about the teaching of Roman writing. I suggested that 'amateur' and 'professional' writers would have had training that differed in its quality, substance and in its length, and that 'professional' writers would have had a more extensive and developed script education.

In Section 10 I closely examined the layout and format of some selected papyri written in the clerical hand. In 10.2 I went onto closely examine the formation of the letters and to examine the ductus of the letter-forms in the same chosen group of papyri. Here I was also able, going on in 10.3, to develop some of the points and to draw them out in further discussion. I observed an increase in the cursive aspect of the script over time and pointed to some changes in the letter-forms that can be seen to have arisen as a consequence. The appearance of letter-forms understood to belong more properly to NRC (rather than the ORC used throughout the earlier documents) was noted and attempts were made to explain them in my study of the

chronological development, both in the century or more than separates the Dura material from the comparable Vindolanda documents, and over the timespan of the Dura documents themselves. (and see also p. 239 above). However, this is a subject that needs far greater consideration than I was able to give it here.

In Section 11 I put forward arguments, using epigraphic material from Dura-Europos, to support the idea that military scribes, at least sometimes were responsible for and undertook such sign-writing, or noticeboard lettering as was necessary in the general running of the camp. Painted lettering, I suggested, is likely to have been far greater, in quantity of production and in use, at Dura-Europos than were formally carved inscriptions. I took the opportunity, therefore, to discuss two *dipinti*, each left by military clerks, one of which in particular, that of Julius Domninus *Librarius* may have been practice material for the clerks as they learned to construct letter-grids, use brushes and enlarge their lettering so as to befit it for public display.

Overall I feel that the work carried out for and during the course of writing this thesis has opened up several exciting directions for future work on Latin script and I hope to be able to begin to undertake such research and to build upon and expand the discussion herein. The vast corpus of material, particularly epigraphic, from Dura-Europos still remains under-explored. The Latin script forms only one small part of its vast panorama. In Latin script itself, in the true palaeographic sense, there is also a lot to be done, and it is in this area that, as I have said earlier, the thesis here should be considered as a beginning, rather than an end, to this task.

APPENDIX 1		
P. Dura Shelfmark	**ChLA Shelfmark/ Fink (1971) Listing**	**Beinecke Library Hyperlink**
P.Dura 26 Contract Greek with Latin Witness Signatures on Verso, 227CE Plates XX; XXVII, I Found Wall St	No entry	P.CtYBR inv. DP 101 qua
P.Dura 30 Marriage Contract Greek with Latin Witness Signatures on Verso, 232CE Plates XXI; XXVII, 2 Found Wall St	No entry	P.CtYBR inv. DP 74 fol
P.Dura 54 Feriale Duranum, 225-235CE Plate XXXII	VI, 309 Fink, 117	P.CtYBR inv. DP 2 qua
P.Dura 55 File of Letters, 218 - 222CE Plate XVII	VI, 310 Fink, 90	P.CtYBR inv. DP 105 qua
P.Dura 56 Letters from Provincial HQ, 208CE Plates XXXIII, 1-2; XXXIV A, B, C with addresses on verso	VI, 311 Fink, 99	P.CtYBR inv. DP 8 fol
P.Dura 57 Fragments of letters, Perhaps ca. 208CE No plate Traces of address only	VI, 312 Fink, 103	P.CtYBR inv. DP 32
P.Dura 58 Copy letter, ca 240-250CE Plate LX, I Written on verso of 114	VI, 313 Fink, 100	P.CtYBR inv. DP 63(B) qua
P.Dura 59 Governor's letter, Prob. 241CE Plates XXXIII, 6; XL, 2 Address on verso	VI, 314 Fink, 114	P.CtYBR inv. DP 7 qua
P.Dura 60 File of Circular Letters, ca. 208CE Plate XLI	VI, 315 Fink, 98	P.CtYBR inv. DP 4 qua
P.Dura 61 Letter (fragment), ca. 216CE Plate XXXVIII, I	VI, 316 Fink, 101	P.CtYBR inv. DP 18 qua

P.Dura 62 Letter (fragment), ca. 216-220 No plate, Writing on recto and verso	VI, 317 Fink, 108	P.CtYBR inv. DP 33
P.Dura 63(i) Letter (fragments), ca. 211 Plate XXXIII,3	VI, 318 Fink, 88	P.CtYBR inv. DP 10(First text) qua
P.Dura 63(ii) Letter (fragments), ca. 211 Plate XXV,I Verso address	As (i) above	P.CtYBR inv. DP 10(Second text) qua
P.Dura 64 Letters to the Tribune, 221CE Verso addresses A and B	VI, 319 Fink, 91	P.CtYBR inv. DP 15 qua
P.Dura 65 Letter (fragment), 225CE	VI 320 Fink, 109	P.CtYBR inv. DP 23
P.Dura 66(i) Letters of Postumius Aurelianus, 216CE Pls.: XXXIII,4; XXXVI,1; XV,1; XXXVII; XLII,1; XXXIII,5; XV,2; XXXVI,2; XLII,2 Verso addresses A, D.vi, G, J, N, O, Y, BB, JJ.	VI, 321 Fink, 89	P.CtYBR inv. DP 13(First text) qua
P.Dura 67 Copy letter with lists of names, ca. 223 - 225CE Plate XLVII Verso P. Dura 102	VII, 322 Fink, 92	P.CtYBR inv. DP 16(B) fol
P.Dura 68 Letter fragments, ca. 232 - 240CE, Plate XL, 1 Writing on both sides on four	VII, 323 Fink, 94	P.CtYBR inv. DP 40(A) qua
P.Dura 69 Roster ? (fragment), 235 - 251CE	VII, 324 Fink, 95	P.CtYBR inv. DP 40(B) qua
P.Dura 70 Letter fragment, 213 CE Plate XXXV, 2	VII, 325 Fink, 104	P.CtYBR inv. DP 68
P.Dura 71 Letter (fragment), ca. 219 CE	VII, 326 Fink, 105	P.CtYBR inv. DP 47
P.Dura 72 Letter (fragment), 211-222 CE	VII, 327 Fink, 110	P.CtYBR inv. DP 43

P.Dura 73 Letter fragments, 210 - 220 CE, Illegible remnants of letters on verso of fragments c. and h	VII, 328 Fink, 106	P.CtYBR inv. DP 42
P.Dura 74 Letters (fragments), 223 - 252 CE?, Plate XXXVIII, 2 Verso illegible traces	VII, 329 Fink, 97	P.CtYBR inv. DP 21
P.Dura 75 Letters (fragments), 210 - 220 CE	VII, 330 Fink, 130	P.CtYBR inv. DP 28 qua
P.Dura 76 Letter (fragment), 210 - 225 CE	VII, 331 Fink, 93	P.CtYBR inv. DP 37
P.Dura 77 Letters (fragments), ca. 220 – 230 CE	VII, 332 Fink, 113	P.CtYBR inv. DP 51
P.Dura 78 Letter (fragment), ca. 210 - 230 CE	VII, 333 Fink, 111	P.CtYBR inv. DP 45
P.Dura 79 Letter (fragment),ca. 210 - 230 CE, Trace of address on verso	VII, 334 Fink, 112	P.CtYBR inv. DP 52
P.Dura 80 Letters (fragments), ca. 235 - 245 CE, Trace of address on verso	VII, 335 Fink, 115	P.CtYBR inv. DP 59
P.Dura 81 Letter (fragment), ca. 250 CE Plate LXVI, I, Recto is P. Dura 120	VII, 336 Fink, 96	P.CtYBR inv. DP 29(B)
P.Dura 82 Morning Report, ca. 233 CE Plates L - LI Verso is P. Dura 97	VII, 337 Fink, 47	P.CtYBR inv. DP 3(A) fol
P.Dura 83 Morning Report, 233 CE Plate LII, I Verso is P. Dura 106	VII, 338 Fink, 48	P.CtYBR inv. DP 17(A) qua
P.Dura 84 Morning Report ? (fragment), 233 CE, Plate LII, II	VII, 389 Fink, 56	P.CtYBR inv. DP 67(A)
P.Dura 85 Morning Report ? (fragments), ca. 230 CE, Verso is P. Dura 113	VII, 340 Fink, 54	P.CtYBR inv. DP 31(A)
P.Dura 86 Fragment, ca. 240 CE	VII, 341 Fink, 57	P.CtYBR inv. DP 54
P.Dura 87 Morning Report ? (fragments) ca. 230 CE, Verso is Greek P. Dura 137	VII, 342 Fink, 55	P.CtYBR inv. DP 65(A)

P.Dura 88 Morning Report, 238 - 244 CE ? Plate LXVII, 3	VII, 343 Fink, 49	P.CtYBR inv. DP 22
P.Dura 89 Morning Report, 239 CE Plate LVI -LVII Verso is P. Dura 107	VII, 344 Fink, 50	P.CtYBR inv. DP 9(A) fol
P.Dura 90 Tabulation (fragment), 225 - 235 CE, Recto is P. Dura 103	VII, 345 Fink, 60	P.CtYBR inv. DP 38(B)
P.Dura 91 Tabulation/morning report ?, ca. 225 - 235 CE Plate XLVIII, I, Verso is P. Dura 140	VII, 346 Fink, 61	P.CtYBR inv. DP 19(A)
P.Dura 92 Tabulation, ca. 225 - 235 CE Plate XLIX, I, Verso blank	VII, 347 Fink, 62	P.CtYBR inv. DP 27 qua
P.Dura 93 List of Principales, ca. 230 - 240 CE, Plate XXXIII, 7 Verso is P. Dura 141	VII, 348 Fink, 22	P.CtYBR inv. DP 41(A)
P.Dura 94 Summary of Soldiers' dispositions ca. 240 CE, Plate LX, 2 Also has P. Dura 12, and P. Dura 47 (Greek texts)	VII, 349 Fink, 64	No record on site
P.Dura 95 Strength Report, 250/1 CE Plate LXII, Verso is P. Dura 105	VII, 350 Fink, 66	P.CtYBR inv. DP 34(A) fol
P.Dura 96 List of names with ranks, ca. 245 - 255 CE, Traces on verso	VII, 351 Fink, 25	P.CtYBR inv. DP 36
P.Dura 97 List of men and mounts, 251 CE Plates LXIV - LXV Recto is P. Dura 82	VII, 352 Fink, 83	P.CtYBR inv. DP 3(B) fol
P.Dura 98 Roster, 218 CE Plate XLIII, Verso is P. Dura 115	VII, 353 Fink, 6	P.CtYBR inv. DP 11(A) fol
P.Dura 99 List of Names, ca. 218 CE Verso blank	VII, 354 Fink, 7	P.CtYBR inv. DP 55
P.Dura 100 Roster, 219 CE Plate XLIV, Verso is P. Dura 101	VIII, 355 Fink, 1	P.CtYBR inv. DP 12(A) fol
P.Dura 101 Roster, 222 CE Plate XLV, Recto is P. Dura 100	VIII, 366 Fink, 101	P.CtYBR inv. DP 12(B) fol

P.Dura 102 Roster ? 222 - 224 CE Plate XLVI Verso is P. Dura 67	IX, 357 Fink, 8	P.CtYBR inv. DP 16(A) fol
P.Dura 103 List of Cavalryman, ca. 224 CE Verso is P. Dura 90	IX, 358 Fink, 26	P.CtYBR inv. DP 38(A)
P.Dura 104 List of Names, ca. 235 CE ? Verso is P. Dura 123	IX, 359 Fink, 3	P.CtYBR inv. DP 30(A) qua
P.Dura 105 Roster, 250 - 256 CE Plate LXIII, Recto is P. Dura 95	IX, 360 Fink, 4	P.CtYBR inv. DP 34(B) fol
P.Dura 106 Guard roster, 235 - 240 CE Plate LVIII, I, Recto is P. Dura 83	IX, 361 Fink, 13	P.CtYBR inv. DP 17(B) qua
P.Dura 107 Guard roster, ca. 240 CE Plate LIX, Recto is P. Dura 89	IX, 362 Fink, 107	P.CtYBR inv. DP 9(B) fol
P.Dura 108 Guard roster ?, 235 - 240 CE Plate LVIII, 2, Recto is P. Dura 84	IX, 363 Fink, 14	P.CtYBR inv. DP 67(B)
P.Dura 109 Guard roster, 242 - 256 CE Plate LX, 3, Verso blank	IX, 364 Fink, 109	P.CtYBR inv. DPg 14
P.Dura 110 Guard roster, Prob. 241 CE Plate LXI, I, Verso blank	IX, 365 Fink, 17	P.CtYBR inv. DPg 19
P.Dura 111 Uncertain fragment, ca. 242 CE Verso blank ?	IX, 366 Fink, 18	P.CtYBR inv. DPg 15
P.Dura 112 Guard roster ?, 241 or 242 CE Plate LXI, 2, Recto and Verso	IX, 367 Fink, 16	P.CtYBR inv. DPg 17
P.Dura 113 List of Names, 230 - 240 CE Recto b and c is P. Dura 85	IX, 368 Fink, 12	P.CtYBR inv. DP 31(B)
P.Dura 114 List of Names, 225 - 235 CE Plate XLVIII, 2, Verso is P. Dura 58	IX, 369 Fink, 41	P.CtYBR inv. DP 63(A) qua
P.Dura 115 List of Names, 232 CE Plate XLIX, 2, Recto is P. Dura 98	IX, 370 Fink, 27	P.CtYBR inv. DP 11(B) fol
P.Dura 116 Names and Notations, 236 CE Plate LIII, Verso is P. Dura 117	IX, 371 Fink, 23	P.CtYBR inv. DP 76(A) qua

P.Dura 117 List of names, with numerals 236 CE Plate LIV Recto is P. Dura 116	IX, 372 Fink, 33	P.CtYBR inv. DP 76(B) qua
P.Dura 118 List of Names, 255 CE ? Plate LXVI, 2, Recto is P. Dura 121	IX, 373 Fink, 44	P.CtYBR inv. DP 26(B)
P.Dura 119 List of Names, 230 - 240 ? Traces on verso	IX, 374 Fink, 42	P.CtYBR inv. DPg 16
P.Dura 120 List of names, with dates, 233 – 235, Plate LV, I Verso is P. Dura 81	IX, 375 Fink, 31	P.CtYBR inv. DP 29(A)
P.Dura 121 Record of Accessions by Transfer Prob. 241 CE, Plate LV, 2 Verso is P. Dura 118	IX, 376 Fink, 29	P.CtYBR inv. DP 26(A)
P.Dura 122 List by Centuries 241 - 242 CE Verso blank	IX, 377 Fink, 32	P.CtYBR inv. DP 46
P.Dura 123 List of Names in Greek After 225 CE, Plate XXXI, I Recto is P. Dura 104	IX, 378 Fink, 35	P.CtYBR inv. DP 30(B) qua
P.Dura 124 List of Names, 220 - 230 CE Recto is P. Dura 142	IX, 379 Fink, 43	P.CtYBR inv. DP 39(B)
P.Dura 125 (Fragment) Decision of a Tribune, (20 April 235), Plate XXII, I Verso blank ?	IX, 380	P.CtYBR inv. DP 6 qua
P.Dura 126 (Greek) Decision of a Tribune, (20 April 235), Plate XXII, 2	IX, 381	P.CtYBR inv. DP 5
P.Dura 127 (Greek) Decision of a Tribune ?, (20 April 235), Plate XXII, 2	IX, 382	P.CtYBR inv. DP 118
P.Dura 128 (Greek) Fragments of an Official Journal ca. 245 CE, Plate XXIV	IX, 383	P.CtYBR inv. DP 14 fol P.CtYBR inv. DP 35 P.CtYBR inv. DP 48
P. Dura 130 Labels (4), 215 - 245 CE Versos blank	IX, 384 Fink, 116	P.CtYBR inv. DP 60

P. Dura 131 Marking on Equipment ca. 219 - 225 CE Writing on one side only	IX, 385	P.CtYBR inv. DPm 2
P. Dura 133 Latin Fragment 213 - 217 or 235 - 238 CE Plate LXVII, I Verso blank	IX, 386 Fink, 123	P.CtYBR inv. DP 66
P. Dura 134 Latin Fragment, 220 - 222 CE ?, Plate LXVII, 2, Traces of writing on verso	IX, 387 Fink, 118	P.CtYBR inv. DP 50
P. Dura 135 Latin Fragment, ca. 230 CE Verso blank	IX, 388 Fink, 110	P.CtYBR inv. DP 61
P. Dura 136 Latin Fragment ca. 230 CE Verso blank	IX, 389	P.CtYBR inv. DP 78

APPENDIX 2 - DIMENSIONS OF THE SELECTED GROUP OF PAPYRI IN THE CLERICAL HAND

	P. Dura 98 – Roster	**P. Dura 82** Morning Report	**P. Dura 115** List of Names	**P. Dura 83** Morning Report	**P. Dura 89** Morning Report	**P. Dura 107** Guard Roster	**P. Dura 95** Strength Report ?	**P. Dura 105** Roster	**P. Dura 97** List of Men and Mounts
	218/219 CE	27-30 March 223-223	232 CE	c.Sept. 4 233 CE [213]	26-28 May 239	22-24 May 240/1 CE	15 Oct 250-June/July 251	251/6 CE	251, after August 31
Column Width	4 cm.	50 cm.	6.3 cm. – 4.5 cm.	Wider than 14 cm.	46 cm.[214]	Perhaps c. 6.5 cm.	--	--	55 cm.
Upper Margins (preserved)	1.3 cm.	2 cm.	c. 2.5 cm.	--	3.5 cm.	--	c. 1.5 cm.	1.5 cm. visible	2.5 cm.
Lower Margins (preserved)	--	2 cm.	--	--	1.5 cm.	2.3 cm.	c. 2 cm.	--	2 cm.
Space between columns	2 cm.	Where visible greater than 1.5 cm.	Where visible greater than 1.5 cm.	--	--	Columns almost intermingle at two points	1.5 – 2.0 cm.	c. 4 – 4.5 cm.	5 – 8 mm.
Letter height (head to base line)	c. 3 mm.	c. 2 mm.	c. 3 mm.	c. 2.5 mm.	2.5 – 3 mm.	c. 3.5 – 4 mm.	c. 1.5 – 2 mm.	c. 2.5 – 3 mm.	c. 3 mm.
Approximate interlinear space	5 mm.	6 – 8 mm.	c. 6–8 mm.	5 - 6 mm.	6 mm. (average)	c. 5 – 6 mm.	5 mm. (average)	5 – 8 mm.	5 – 8 mm.
Other features		First three lines indented.	Hand similar to that of P. Dura 83?	Hand similar to P. Dura 115?	Hand similar to P. Dura 115?	Untidy			

[213] Verso P. Dura 106 – Guard Roster (?).

[214] 26 cm. in height.

ABBREVIATIONS

ANRW **Aufstieg und Niedergang der römischen Welt. Geschichte und Kultur Roms im Spiegel der neueren Forschung**, (1970-). Walter de Gruyter: Berlin.

ChLA-VI **Chartae Latinae Antiquiores VI, United States of America II, Facsimile-Edition of the Latin Charters Prior to the Ninth Century***, Bruckner, A. & Marichal, R. (Eds.) (1975). Dietikon-Zurich: Urs Graf-Verlag.

ChLA-VII **Chartae Latinae Antiquiores VII, The United States of America III Facsimile-Edition of the Latin Charters Prior to the Ninth Century,** Marichal, R. & Bruckner, A. (Eds.) (1975). Dietikon-Zurich: Urs Graf-Verlag.

ChLA-VIII **Chartae Latinae Antiquiores VIII, United States IV Facsimile-Edition of the Latin Charters Prior to the Ninth Century,** Bruckner, A. & Marichal, R. (Eds.) (1976). Dietikon-Zurich: Urs Graf-Verlag.

ChLA-IX **Chartae Latinae Antiquiores IX, The United States of America V,** Bruckner, A. & Marichal, R. (Eds.) (1977). Dietikon-Zurich: URS Graf-Verlag.

CIL **Corpus Inscriptionum Latinarum,** (1963 -). Berlin: Brandenburg Academy.

Dar.-Sagl. Daremberg, Ch., Saglio, E. (Eds) (1877-1919), **Dictionnaire des antiquités grecques et romaines d'après les texts et les monuments.** Paris: Hachette.

De Rei Mil. **de Rei Militaris***, Flavius Vegetius, Reeves, M.B. (Ed.) (2005). Oxford: Clarendon Press.

Inst. Or. **Institutio oratoria**, Quintilian.

NP **Der neue Pauly : Enzyklopädie der Antike** (1996), Cancik, H. & Schneider, H. (Eds.). Stuttgart: J.B. Metzler.

P. Gen. Lat. **Archives militaires de Ier siècle. Texte inédit du papyrus latin de Genève Nr. 1**, Nicole, J. & Morel, C. (Eds.) (1900). Geneva: Societé Academique de Genève.

P. Oxy. **The Oxyrhynchus Papyri,** Grenfell, B. P. & Hunt, A.S. (Eds) (1898 -) Egypt Exploration Society: London.

P. Ryl. **Catalogue of the Greek Papyri in the John Rylands Library**, Roberts, C. H. & Turner, E.G. (Eds.) (1952). Manchester: University of Manchester Press.

PSI **Papiri greci e latini**, (1917), Pubblicazioni della Società Italiana per la ricerca dei papiri greci e latini in Egitto: Florence.

RE   **Paulys Real-Encyclopädie der classischen Altertumswissenschaft. Neue Bearbeitung**, Wissowa, G., Kroll, W. & Mittelhaus, K. (Eds.) (1894 -). Stuttgart: K. Ziegler.

RIB-II   **The Roman Inscriptions of Britain II: Instrumentum Domesticum**, Frere, S. S. & Tomlin, R. S. O. (Eds.) Glos. : Alan Sutton.

RMR   **Roman Military Records on Papyrus** (Philological Monographs of the American Philological Association Nr. 26)**,** Fink, R. (Ed.) (1971). Cleveland: Published for the American Philological Association by the Press of Case Western Reserve University.

TEAD-I   **The Excavations at Dura-Europos, Preliminary Report on the First Season, Spring 1928,** Rostovtzeff, M. I. & Baur, P. (Eds.) (1929). New Haven: Yale University Press.

TEAD-II   **The Excavations at Dura-Europos, Preliminary Report on the Second Season, 1928 - 1929,** Rostovtzeff, M. I. & Baur, P. (Eds.) (1931). New Haven: Yale University Press.

TEAD-III   **The Excavations at Dura-Europos, Preliminary Report on the Third Season, 1929 – 1930**, Rostovtzeff, M.I. & Baur, P. (Eds.) (1932). New Haven: Yale University Press.

TEAD-IV   **The Excavations at Dura-Europos, Preliminary Report on the Fourth Season, 1930-31**, Baur, P., Rostovtzeff, M. & Bellinger, A. (Eds.) (1933). New Haven: Yale University Press.

TEAD-V   **The Excavations at Dura-Europos, Preliminary Report of the Fifth Season, 1931-2,** Baur, P., Rostovtzeff, M. & Bellinger, A. (Eds.) (1934). New Haven: Yale University Press.

TEAD-VI   **The Excavations at Dura-Europos, Preliminary Report on the Sixth Season, 1932-33**, Rostovtzeff, M. I., Bellinger, A. R., Hopkins, C. & Welles, C. B. (Eds.) (1936). New Haven: Yale University Press.

TEAD-VII/VIII The Excavations at Dura-Europos, Preliminary Report on the Seventh and Eighth Seasons, 1933-4 and 1934-5, Rostovtzeff, M., Brown, F. & Welles, C. B. (Eds.) (1939). New Haven: Yale University Press.

TEAD-IX/1   **The Excavations at Dura-Europos Preliminary Report on the Ninth Season, 1935-36, Part I: The Agora and Bazaar**, Rostovtzeff, M., Bellinger, A., Brown, F. & Welles, C.B. (Eds.) (1944). New Haven: Yale University Press.

TEAD-IX/2   **The Excavations at Dura-Europos Preliminary Report on the Ninth Season, 1935-36, Part 2: The Necropolis,** Rostovtzeff, M., Bellinger, A., Brown, F. & Welles, C.B. (Eds.) (1946). New Haven: Yale University Press.

TEAD-IX/3   **The Excavations at Dura-Europos Preliminary Report on the Ninth Season, 1935-36, Part 3:The Palace of the Dux Ripae and the Dolicheneum,** Rostovtzeff, M. I., Bellinger, A. R., Brown, F. & Welles, C. B. (Eds.) (1952). New Haven: Yale University Press.

TEAD-P&P   **Excavations at Dura Europos Final Report V, Part 1: The Parchments and the Papyri**, Bradford Welles, C., Fink Robert, O. & Gilliam, J. F. (Eds.) (1959). New Haven: Yale University Press, New Haven.

TEAD-Arms **Excavations at Dura-Europos 1928 - 37 Final Report VII: The Arms and Armour and other Military Equipment**, James, S. (Ed.) (2004). British Museum Press: London.

ZPE   **Zeitschrift für Papyrologie und Epigraphik** (1967 -) Bonn, University of Cologne.

BIBLIOGRAPHY

Adams, J. N. (1994) Latin and Punic in Contact? The Case of the Bu Njem Ostraca. **Journal of Roman Studies**, 84**:** 84-112

Adams, J. N. (1995) The Language of the Vindolanda Tablets: An Interim Report. **Journal of Roman Studies**, 85**:** 86-134

Adams, J. N. (1999) The poets of Bu Njem: Language, Culture and the Centurionate. **Journal of Roman Studies**, 89**:** 109-134

Adams, J. N. (2003a) **Bilingualism and the Latin Language.** Cambridge: Cambridge University Press.

Adams, J. N. (2003b) 'Romanitas' and the Latin Language. **Classical Quarterly**, 53**:** 184-205

Adams, J. N., Janse, M. & Swain, S. (Eds.) (2002) **Bilingualism in Ancient Society Language Contact and the Written Word**. Oxford: OUP.

Alston, R. (1995) **Soldier and Society in Roman Egypt: A Social History.** London and New York: Routledge.

Ando, C. (2000) **Imperial Ideology and Provincial Loyalty in the Roman Empire.** London: University of California Press.

Ansell, M. (1979) Handwriting Classification in Forensic Science. **Visible Language**, 13**:** 239-251

As'ad, K. (2002) Inscriptions latines de Palmyre. **Revue des Etudes Anciennes**, 104**:** 363-400

Austin, N. J. E. & Rankov, B. (1998) **Exploratio : military and political intelligence in the Roman world from the Second Punic War to the battle of Adrianople.** London: Routledge.

Bagnall, R. (1995) **Reading Papyri, Writing Ancient History.** London and New York: Routledge.

Bagnall, R. S. (1976) **The Florida Ostraka: Documents from the Roman Army in Egypt.** Durham, N.C.: Duke University.

Ball, W. (2000) **Rome in the East: the Transformation of an Empire.** London, New York: Routledge.

Ballaira, G. (1993) **Esempi di scrittura latina dell'età romana: dal III-II secolo a.C. al I secolo d.C.** Turin: Edizioni dell'Orso.

Balty, J.-C. & Van Rengen, W. (1993) **Apamea in Syria. The Winter Quarters of Legio II Parthica. Roman gravestones from the military cemetery.** Brussels: VUB Press.

Bartoletti, G. (1990) La scrittura romana nelle tabellae defixionum (secc. I A.C. – IV D.C.) Note paleografiche. **Scrittura e Civiltà**, XIV**:** 7-56

Bartoletti, G. & Pescini, I. (1995) **Fonti Documentarie in Scrittura Latina: Repertorio (sec. vii a.C. – vii d.C.).** Florence: Biblioteca di Scrittura e Civiltà.

Bataille, A. (1956) Exercises de Calligraphies Grecque et Latine sur un P. Bouriant inédit <u>in</u> Calderini, A. & Paribeni, R. (Eds.) **Studi in onore di Aristide Calderini e Roberto Paribeni II**. Milan: Casa editrice Ceschina. pp. 277–283

Beard, M. (1985) Diversity and Expansion in the Arval Acta. **Papers of the British School at Rome**, 53**:** 114-162

Beard, M. (1991) Writing and Religion: Ancient literacy and the function of the written word in Roman religion <u>in</u> Humphrey, J. H. (Ed.) **Literacy in the Roman World.** Michigan: Ann Arbor. pp. 35-58

Berger, J. (1972) **Ways of Seeing.** London: Penguin.

Besnier, M. (1899) Les scholae des sous-officiers dans le camp romaine de Lambese. **Mélanges d'archaéologie et d'histoire de l'école française de Rome, Antiquité**, 19**:** 199-258

Best, E. (1966) The Literate Roman Soldier. **The Classical Journal**, 62**:** 122-127

Bierman, I. A. (1998) **Writing Signs: The Fatimid Public Text.** Berkeley and Los Angeles, California: University of California Press.

Bilabel, F. (1926) Librarius RE XIII (1). Cols. 138-139

Bilkei, I. (1980) Römische Schreibgeräte aus Pannonien. **Albia Regia**, XVIII**:** 61-80

Bilkei, I. (1983) Schulunterricht und Bildungswesen in der römischen provinz Pannonien. **Alba Regia**, XX**:** 67-74 & Tavs. xxv and xxvi

Birley, A. (2002) **Garrison Life at Vindolanda. A Band of Brothers.** Stroud: Tempus.

Birley, R. (2002) The Writing Materials: Vindolanda Research Reports New Series IV Fasc. IV. Vindolanda: Vindolanda Trust.

Birt, T. (1907) **Die Buchrolle in der Kunst: Archäòlogisch-antiquarische Untersuchungen zum antiken Buchwesen.** Leipzig: B.G. Teubner.

Bischoff, B. (1966) Elementarunterricht und Probationes Pennae in der ersten Hälfte des Mittelalters in Bischoff, B. (Ed.) **Mittelalterliche Studien I: Ausgewählte Aufsätze zur Schriftkunde und Literaturgeschichte**. Stuttgart: Anton Hiersemann. pp.74-87

Bischoff, B. (1990) **Latin Palaeography.** Cambridge: Cambridge University Press.

Bishop, M. C. (1990) On Parade: Status, Display, and Morale in the Roman Army in Vetters, H. & Kandler, M. (Eds.) **Akten des 14 Internationalen Limeskongresses 1986 in Carnuntum: I.** Vienna: Verlag Des Österreichischen Akademie der Wissenschaften. pp. 21-30

Blanchard, A. (1999) L'hypothèse de l'unité de ductus en paléographie papyrologique. **Scrittura é Civiltà**, XXIII**:** 5–27

Blanchard, A. (2001) Les papyrus scolaires: apprentissage de l'écriture et *ductus* in Andorlini, I., G., B., Manfredi, M. & Menci, G. (Eds.) **Atti del XXII Congresso Internazionale di Papirologia, Firenze 1998**. Florence: Istituto Papirologico G. Vitelli. pp. 121-136

Boak, A.E.R. (1937) *Officium* **RE XVII (2).** pp.2045-56

Boeselager, D. V. (1989) Funde und Darstellungen Römischer Schreibzeugfutterale zur Deutung einer Beigabe in Kölner Gräbern. **Kölner Jahrbuch für vor- und Frühgeschichte**, 22**:** 221-239

Bonner, S. F. (1977) **Education in Ancient Rome : from the Elder Cato to the Younger Pliny.** London: Methuen.

Booth, A. D. (1979) Elementary and Secondary Education in the Roman Empire. **Florilegium**, 1**:** 1-14

Bouard, A. (1955) Des principes de l'histoire: morphologie de l'écriture in recueil de travaux offerts à M.Clovis Brunel. Société de l'Écoles des Chartes: Paris. pp. 174-177

Bowman, A. K. (1991a) A Military Strength Report from Vindolanda. **Journal of Roman Studies**, 81**:** 62-73

Bowman, A. K. (1991b) Literacy in the Roman empire: Mass and Mode <u>in</u> Humphrey, J. H. (Ed.) **Literacy in the Roman World: Suppl. Ser. No. 3**. Michigan: Ann Arbor. pp. 119-131

Bowman, A. K. (1994) The Roman Imperial Army: Letters and Literacy on the Northern Frontier <u>in</u> Bowman, A. K. & Woolf, G. (Eds.) **Literacy and Power in the Ancient World**. Cambridge: Cambridge University Press. pp. 109-125

Bowman, A. K. (2001) Documentary Papyrology and Ancient History **Atti del XXII Congresso Internazionale di Papirologia 1998**. Florence: Istituto Papirologico G. Vitelli. pp. 137-145

Bowman, A. K. (2003) **Life and Letters on the Roman Frontier: Vindolanda and its People (2nd Ed).** London: The British Museum Press.

Bowman, A.K. (2006) Outposts of Empire: Vindolanda, Egypt, and the Empire of Rome, **Journal of Roman Archaeology**, 19: 75-93

Bowman, A. K. & Thomas, J. D. (1983) **Vindolanda : the Latin writing-tablets.** London: Society for the Promotion of Roman Studies.

Bowman, A. K. & Thomas, J. D. (2003) **The Vindolanda writing-tablets : Tabulae Vindolandenses III.** London: Published for the Trustees of the British Museum by British Museum Press.

Bowman, A. K., Thomas, J. D. & Adams, J. N. (1994) **The Vindolanda writing-tablets: Tabulae Vindolandenses II.** London: Published for the Trustees of the British Museum by British Museum Press.

Bowman, A.K. & Woolf, G. (Eds) (1994) **Literacy and Power in the Ancient World**. Cambridge: Cambridge University Press.

Božič, D. (2001a) Note sur les plumes à écrire romaine. **Bulletin Instrumentum**, 14**:** 27-28

Božič, D. (2001b) Zum Schreibgerät aus dem Grab einer Ärztin aus Vindonissa. **Bulletin Instrumentum**, 14**:** 30-32

Božič, D. (2001c) Über den Verwendungszweck einiger römischer Messerchen. **Bulletin Instrumentum**, 13**:** 28-30

Breeze, D. (1974a) The Career Structure Below the Centurionate During the Principate **ANRW II.1**. Berlin & New York: Walter De Gruyter & Co. pp. 445-447

Breeze, D. J. (1974b) The organisation of the career structure of the *immunes* and *principales* of the Roman Army. **Bonner Jahrbücher**, 174**:** 279-281

Briem, G. S. E. (1979) Wanted: Handwriting that fits modern pens. **Visible Language**, XIII**:** 50-62

Brock, S. P. (1994) Greek and Syriac in Late Antique Syria in Bowman, A. & Woolf, G. (Eds.) **Literacy and Power in the Ancient World**. Cambridge: Cambridge University Press. pp.149-160

Brown, J. (1993) Aspects of Palaeography in Bately, J., Brown, M. P. & Roberts, J. (Eds.) **A Palaeographer's View: The Selected Writings of Julian Brown**. Oxford, New York: Harvey Miller. pp. 47-91

Brown, N. & Sink, A. (1983) Tools of the Scribe: Inks & Pigments I. **Alphabet: The Journal of the Friends of Calligraphy**, 8, No.1**:** 8-13

Bucking, S. (2007) On the Training of Documentary Scribes in Roman, Byzantine and Early Islamic Egypt: A Contextualised Assessment of the Greek Evidence. **ZPE**, 159**:** 229-247

Bülow-Jacobsen, A. (2009) Writing Materials in the Ancient World in Bagnall, R. (Ed.) **The Oxford Handbook of Papyrology**. Oxford: Oxford University Press. pp. 3-29

Burford, A. (1971) The Purpose of Inscribed Building Accounts. **Acta of the Fifth International Congress of Greek and Latin Epigraphy, Cambridge 1967**. Oxford: Basil Blackwell. pp. 71-76

Burford, A. (1972) **Craftsmen in Greek and Roman Society.** London: Thames and Hudson.

Burgert, H.-J. (1996) If Only One Knew what Calligraphy Is! **Letter Arts Review**, 12**:** 8-17

Butcher, K. (2003) **Roman Syria and the Near East.** London: The British Museum Press.

Cagnat, R. (1889) Sur les manuels professionels: des graveurs d'inscriptions romaines. **Revue de Philologie**, 13**:** 51-65

Callewaert, H. (1963) For Easy and Legible Handwriting in Herrick, V. E. (Ed.) **New Horizons for Research in Handwriting**. Madison: University of Wisconsin Press. pp. 39-52

Campbell, B. (1987) Teach Yourself How to be a General. **Journal of Roman Studies**, 77**:** 13-29

Campbell, B. (2005) The Army in Bowman, A., Garnsey, P. & Rathbone, D. W. (Eds.) **The Cambridge Ancient History XII^2: The Crisis of Empire, AD 193-337**. Cambridge: Cambridge University Press. pp. 110-120

Campbell, J. B. (1984) **The Emperor and the Roman Army 31BC - AD235.** Oxford: Clarendon Press.

Canetti, E. (1973) **Crowds and Power** Harmondsworth: Penguin.

Caruana, I. D. (1987) A Wooden Ansata Panel. **Britannia***,* 18**:** 274-277

Casamassima, E. & Staraz, E. (1977) Varianti e cambio grafico nelle scrittura dei papiri latini: note paleografiche. **Scrittura e Civiltà***,* 1**:** 9-110

Catich, E. M. (1968) **The Origin of the Serif; Brush Writing & Roman Letters.** Iowa: St Ambrose University Press.

Cavallo, G. (2001) Da Bernard de Montfaucon alla paleografia dei papiri: e viceversa in **Atti del XXII Congresso Internazionale di Papirologia 1998**. Florence: Istituto Papirologico 'G. Vitelli'. pp. 197-200

Cavallo, G. (2009) Greek and Latin Writing in the Papyri in Bagnall, R. (Ed.) **The Oxford Handbook of Papyrology**. Oxford: Oxford University Press. pp. 101-148

Cavenaile, R. (1958) **Corpus Papyrorum Latinarum.** Wiesbaden: O. Harrassowitz.

Cavenaile, R. (1992) Papyrus latins 1991: bilan et perspectives **Serta Leodiensia secunda: Mélanges publiés par les classiques de Liège à l'occasion du 175e anniversaire de l'Université**. Liège: CIPL. pp. 47-62

Cencetti, G. (1966) **Compendio di paleografia latina per le scuole universitarie e archivistiche.** Naples: Istituto Editoriale del Mezzogiorno.

Cencetti, G. (1993a) Note paleografiche sulla scrittura dei papiri latini dal I al III secolo DC (2nd Ed) in Nicolaj, G. (Ed.) **Scritti Di Paleografia**. Dietikon Zurich: Urs Graf Verlag. pp. 49-107

Cencetti, G. (1993b) Ricerche sulla scrittura latina nell'etá arcaica. I Il filone corsivo (2nd Ed) in Nicolaj, G. (Ed.) **Scritti di Paleografia**. Dietikon, Zurich: Urs Graf Verlag. pp. 135-170

Cencetti, G. (1993c) Dall'unità al particolarismo grafico. Le scritture cancelleresche romane e quelle dell'alto medioevo (2nd Ed) in Nicolaj, G. (Ed.) **Scritti di Palaeografia**. Dietikon Zurich: Urs Graf Verlag. pp. 226-271

Cencetti, G. (1997) **Lineamenti di storia della scrittura latina : dalle lezioni di paleografia (2nd Ed).** Bologna: Pàtron Editore.

Cheesman, G. L. (1914) **The Auxilia of the Roman Imperial Army.** Oxford: Oxford University Press.

Cherubini, P. (2004) La scrittura latina <u>in</u> Bertolo, F. M., Cherubini, P., Inglese, G. & Miglio, L. (Eds.) **Breve storia della scrittura e del libro**. Roma: Carocci. pp. 37-84

Clanchy, M. (1979) **From Memory to Written Record: England 1066-1307.** Oxford: Blackwell Publishing.

Clark, J. R. (2001-2) Early Latin Writing and Plautus' *Pseudolus*. **Classical Journal**, 97**:** 183-192

Clark, K. W. (1963) The Posture of the Ancient Scribe. **The Biblical Archaeologist**, 26**:** 63-72; and reprinted in Sharpe, J. L. (Ed.), **The Gentile Bias and Other Essays** (1980). Leiden: E. J. Brill, pp. 173-182.

Clauss, M. (1973) **Untersuchungen zu den principales des römischen Heeres von Augustus bis Diokletian: Cornicularii, Speculatores, Frumentarii.** Bochum: PhD Dissertation, esp. pp. 17-45.

Clayton, E. W. (1999) A History of Learning to Write <u>in</u> Clayton, E. & Wilcox, T. (Eds.) **Handwriting: Everyone's Art**. Ditchling, Sussex: Ditchling Museum and the Edward Johnston Foundation. pp. 9-18

Cockle, W. (1979) A New Vergilian Writing Exercise from Oxyrhynchus. **Scrittura e Civilità**, 3**:** 55-75

Cockle, W. (1992) Writing and Reading Exercises (179-190) (Chap. IX) <u>in</u> Bingen, J. et al (Eds.) **Mons Claudianus: Ostraca Graeca et Latina I (1 à 190).** Institut Français d'Archéologie Orientale du Caire: Documents de Fouilles XXIX. pp. 169-176

Constans, L.-A. (1916) Rapport sur une mission archéologique à Bou-Ghara (Gigthis). **Nouvelles Archives des Missions Scientifiques et Littéraires**, 21**:** 1-113

Corbier, M. (1987) L'écriture dans l'éspace public romain <u>in</u> **L'urbs espace urbain et histoire I.s. av. J.-C – III s. ap. J.-C: Actes du colloque international organisé par le Centre National de la Recherche Scientifique et l'école française de Rome (Rome, 8 – 12 Mai 1985)**. Rome: Collections de l'École Française de Rome. pp. 27-60

Corbier, M. (1991) L'écriture en quête de lecteurs in Humphrey, J. H. (Ed.) **Literacy in the Roman World**. Ann Arbor: University of Michigan Press. pp. 99-118

Corbier, M. (1995) L'écriture dans l'image in Salomies, O., Solin, H. & Liertz, U.-M. (Eds.) **Acta Colloquii Epigraphici Latini**. Helsinki: Societas Scientiarum Fennica. pp. 113-161

Corbier, M. (2005) Usage public de l'écriture affichée à Rome in Bresson, A., Cocula, A-M, Pébarthe, C. (Eds.) **L'Écriture Publique du Pouvoir.** Paris, Bordeaux: Boccard. pp. 183-194

Corbier, M. (2007) **Donner à voir, donner à lire: mémoire et communication dans la Rome ancienne.** Paris: CNRS Editions.

Cornell, T. (1991) The Tyranny of the Evidence: A Discussion of the Possible Uses of Literacy in Etruria and Latium in the Archaic Age in Humphrey, J. H. (Ed.) **Literacy in the Roman World**. Ann Arbor: University of Michigan. pp. 7-34

Cornell, T. J., Crawford, M. H. & North, J. A. (1987) **Art and Production in the World of the Caesars.** Milan: Olivetti.

Cotton, H. M., Cockle, W. & Millar, F. G. B. (1995) The Papyrology of the Roman Near East: A Survey. **Journal of Roman Studies**, 85**:** 214-235

Coulston, J. C. N. (2004) Military Identity and Personal Self-Identity in the Roman Army in De Ligt, L., Hemelrijk, E. A. & Singor, H. W. (Eds.) **Roman Rule and Civic Life : Local and Regional Perspectives; Proceedings of the Fourth Workshop of the International Network, Impact of Empire (Roman Empire, c.200 B.C.-A.D.476) Leiden, June 25-28, 2003**. Amsterdam: Gieben. pp.133-152

Coulston, J. C. N. (2007) Art, Culture and Service: The Depiction of Soldiers on Funerary Monuments of the 3rd Century AD in De Blois, L. & Cascio, E. (Eds.) **The Impact of Empire VI, The Impact of the Roman Army (200 BC - AD 476)**. Leiden: Brill. pp. 529-562

Crawford, M. H. (1988) The Laws of the Romans: Knowledge and Diffusion in Gonzalez, J. & Arele, X. (Eds.) **Estudios sobre la Tabula Siarensis**. Madrid: Anejos de Archivo Espanol de Arqueologia. pp. 126-140

Cribiore, R. (1996) **Writing, Teachers, and Students in Graeco-Roman Egypt.** Atlanta, Georgia: Scholars Press.

Cribiore, R. (2003/4) Latin Literacy in Egypt. **KODAI: Journal of Ancient History**, 13/14**:** pp. 111-118

Cribiore, R. (2009) Education in the Papyri in Bagnall, R. (Ed.) **The Oxford Handbook of Papyrology**. Oxford: Oxford University Press. pp. 320-337

Cumont, F. (1926) **Fouilles de Doura-Europos 1922-3.** Paris: Geuthner.

Dabrowa, E. (1981) La garnison romaine a Doura-Europos. Influence du camp sur la vie de la ville et ses consequences. **Cahiers Scientifiques de l'Université Jagellanne: Histoire**, 70**:** 61-75

Dabrowa, E. (1991) *Dromedarii* in the Roman Army: a Note in Maxfield, V. A. & Dobson, B. (Eds.) **Roman Frontier Studies 1989: Proceedings of the XVth International Congress of Roman Frontier Studies**. Exeter: Exeter University Press. pp. 364-366

Dabrowa, E. (1997) The Rivers in the Defensive System of Roman Syria (from Augustus to Septimius Severus) in Groenman-Van Waateringe, W. (Ed.) **Roman Frontier Studies 1995**. Oxford: Oxbow Books Ltd. pp.109-111

Dalton, J., Davis, T. & Shaik, S. V. (2007) Beyond Anonymity: Paleographic Analyses of the Dunhuang Manuscripts. **Journal of the International Association of Tibetan Studies**, 3**:** 4-27

D'Ambra, E. & Métraux, G. P. R. (2006) **The Art of Citizens, Soldiers and Freedmen in the Roman World.** Oxford: Archaeopress.

Davies, R. W. (1969) Joining the Roman Army. **Bonner Jahrbücher**, 169**:** 208-232

Davies, R. W. (1974) The Daily Life of the Roman Soldier Under the Principate in Temporini, A. (Ed.) **Aufstieg und Niedergang der Römischen Welt, II, Principat, I**. Berlin: Wolfgang Haase. pp. 299-338

Davies, R. W. (1976) Centurions and Decurions of Cohors XX Palmyrenorum. **ZPE**, 20**:** 253-275

Davies, R. W. (1989) Cohortes Equitatae in Breeze, D. J. & Maxfield, V. A. (Eds.) **Service in the Roman Army**. Edinburgh: Edinburgh University Press. pp. 141-151

Davies, R. W., Maxfield, V. & Breeze, D. (Eds.) (1989) **Service in the Roman Army**. New York: Columbia University Press.

Davis, T. (1992) The Analysis of Handwriting: An Introductory Survey in Davison, P. (Ed.) **The Book Encompassed: Studies in Twentieth-Century Bibliography**. Cambridge and New York: Cambridge University Press

Davis, T. (2007) The Practice of Handwriting Identification. **The Library**, 8**:** 251-276

De Blois, L. (2006) Administrative Strategies of the Emperor Severus Alexander and his
    Advisers in Kolb. A. (Ed) **Herrschaftsstrukturen und Herrschaftspraxis**. Berlin:
    Akademie Verlag GmbH. pp. 45-52

De Robertis, T. (2004) La scrittura romana. **Archiv für Diplomatik** 50**:** 221-246

De Robertis, T. (2007) Quelques remarques sur les conditions et les principes de la ligature
    dans l'écriture romaine. **Bibliothèque de l'école des Chartes**, 165**:** 29-45

Degni, P. (1998) **Usi delle tavolette lignee e cerate nel mondo greco e romano.** Messina:
    Sicania.

Derks, T. & Roymans, N. (2002) Seal-boxes and the Spread of Latin Literacy in the Rhine
    Delta in Cooley, A. (Ed.) **Becoming Roman, Writing Latin? Literacy and
    Epigraphy in the Roman West**. Portsmouth RI: Journal of Roman Archaeology
    Supplement. pp. 87-134

Desbordes, F. (1990) **Idées romaine sur l'écriture.** Paris: CNRS Editions.

Dietz, K. (1985) Der pollio in der römischen Legion. **Chiron**, 15**:** 235-252

Dietz, K. (1999) Larunda, der Schlamm des Aponus und ein dichtender Militärtribun in
    Hesberg, H. V. (Ed.) **Das Militär als Kulturträger in römischer Zeit**. Cologne:
    Hundt Druck GmbH. pp. 51-66

Diez, E. (1953) Librarii auf Norischen Grabsteinen. **Schild von Steier**, 2**:** 123-134

Dionisotti, A. C. (1982) From Ausonius' Schooldays? A Schoolbook and its Relatives.
    Journal of Roman Studies, 72**:** 83-125

Dirven, L. (1999) **The Palmyrenes of Dura Europos.** Leiden: Brill.

Dirven, L. (2007) The Julius Terentius Fresco and the Roman Imperial Cult. **Mediterraneo
    Antico**, 10**:** 1-13

Dormer, P. (1994) **The Art of the Maker: Skill and its Meaning in Art, Craft and Design.**
    London: Thames and Hudson Ltd.

Dow, S. (1968) Latin Calligraphy at Hawara: P. Hawara 24. **Journal of Roman Studies**, 58**:**
    60-70

Downey, S. (2000) Dura-Europos and the Transformation of the Seleucid City in Fentress, E.
    (Ed.) **Romanization and the City: Creation, Transformations and Failures, JRA
    Supplementary Series 38**. Portsmouth, Rhode Island: Journal of Roman
    Archaeology. pp. 154-172

Dunlap, J. E. (1940) Fragments of a Latin Grammar from Egypt. **American Journal of Philology**, 61**:** 330-344

Eck, W. (1998) Inschriften auf Holz: ein unterschätztes phänomen der epigraphischen Kultur Roms <u>in</u> Kneissl, P. & Losemann, V. (Eds.) **Imperium Romanum: Studien zu Geschichte und Reception**. Stuttgart: Darmstadt University Press. pp. 203-217

Eck, W. (1999) Öffentlichkeit, Monument und Inschrift <u>in</u> Panciera, S. (Ed.) **Akten des 11 Internationale Kongresses für Griech- und Lateinischen Epigraphik, Rome 1997**. Rome. pp. 359-380

Eck, W. (2004) Lateinisch, Griechisch, Germanisch... ? <u>in</u> Ligt, L. D., Hemelrijk, E. A. & Singor, H. W. (Eds.) **Roman Rule and Civic Life: Local and Regional Perspectives: Proceedings of the Fourth Workshop of the International Network: Impact of Empire, June 25-8, 2003**. Amsterdam: J. C. Gieben. pp. 1-19

Edwell, P. M. (2008) **Between Rome and Persia: The Middle Euphrates, Mesopotamia and Palmyra under Roman Control.** London, NY: Routledge.

Eldridge, M., Nimmo-Smith, I., Wing, I. & Totty, R. (1984) The Variability of Selected Features in Cursive Handwriting: Categorical Measures. **Journal of the Forensic Science Society**, 24**:** 179-219

Elsner, J. (2001) Cultural Resistance and the Visual Image: The Case of Dura-Europos. **Classical Philology**, 96**:** 269-304

Evans, J. (1987) Graffiti and the Evidence of Literacy and Pottery Use in Roman Britain. **Archaeological Journal**, 144**:** 191-204

Fairbank, A. (1948) **A Handwriting Manual (3rd Ed).** Leicester: The Dryad Press.

Fentress, E. (1983) Forever Berber. **Opus**, 2**:** 161-175

Feugère, M. (2006) *Capsae*: boites à livres <u>in</u> Feugère, M., Gebhard, R. & Mackensen, M. (Eds.) **Gedenkschrift für Jochen Garbsch**. Bayer: BVBl. pp. 233-242, Pl.216-218

Feugère, M. & Božič, D. (2004) Les instruments de l'écriture. **Gallia: Archéologie de la France antique**, 61**:** 21-41

Fiebiger, O. (1900) *Cornicularii*, **RE IV (1)**, cols. 1603-4

Fink, R. (1945) A Fragment of a Roman Military Papyrus at Princeton. **Transactions of the American Philological Association**, 76**:** 271-278

Fink, R. O., Hoey, A. S. & Snyder, W. (1944) The *Feriale Duranum*. **Yale Classical Studies**, VII

Fisher, M. T. (1985) Ink in Child, H. (Ed.) **The Calligrapher's Handbook**. London: Society of Scribes and Illuminators. pp. 39-44

Fishwick, D. (1988) Dated inscriptions and the Feriale Duranum. **Syria**, 65**:** 349-361

Flower, D. (1936) Modern English Handwriting. **Signature**, 2**:** 29-37

Fournet, J. (2003) Langues, écritures et culture dans les praesidia (Chap. V.) in La Route de Myos Hormos Fouilles de l'IFAO 48/2. Cairo: IFAO. pp. 427-497

Francis, E. D. (1971a) Mithraic Graffiti from Dura-Europos in Hinnells, J. R. (Ed.) **Mithraic Studies: Proceedings of the First International Congress of Mithraic Studies**. Manchester: Manchester University Press. pp. 424-445

Francis, E. D. (1971b) Preface: The Dura Mithraeum in Hinnells, J. R. (Ed.) **Mithraic Studies**. Manchester: Manchester University Press. pp. 151-155

Franklin Jr, J. L. (1991) Literacy and the parietal inscriptions of Pompeii in Humphrey, J. H. (Ed) **Literacy in the Roman World**. Ann Arbor, Michigan: Journal of Roman Archaeology Supplement 3. pp. 77-98

Frasca, R. (1994) **Mestieri e professioni a Roma: una storia dell'educazione.** Florence: La Nuova Italia.

Frye, R. N., Gilliam, J. F., Ingholt, H. & Welles, C. B. (1955) Inscriptions from Dura-Europos. **Yale Classical Studies**, XIV**:** 127-213

Fussell, P. (2002) **Uniforms: Why We Are What We Wear.** New York: Houghton Mifflin.

Gagos, T., Gates, J. E. & Wilburn, A. T. (2005) Material Culture and Texts of Graeco-Roman Egypt. **Bulletin of the American Society of Papyrologists**, 42**:** 171-188

Gagos, T. & Potter, D. S. (2006) Documents in Potter, D. S. (Ed.) **A Companion to the Roman Army**. Oxford: Blackwell Publishing. pp. 45-74

Galsterer, H. (1999) Das Militär als Träger der lateinischen Sprach- und Schriftkultur in Hesberg, H. V. (Ed.) **Das Militär als Kulturträger in römischer Zeit**. Cologne: Hundt Druck GmbH. pp. 37-50

Footnote Only: Gamble, H. Y. (1997) **Books and Readers in the Early Church.** New Haven and London: Yale University Press.

Garrucci, R. (1856) **Graffiti de Pompei.** Paris: Benjamin Duprat.

Gaur, A. (1992) **A History of Writing.** London: British Library Press.

Gaur, A. (2003) **Literacy and the Politics of Writing.** Bristol: Intellect.

Gawlikowski, M. (1997) The Syrian Desert Under the Romans in Alcock, S. (Ed.) **The Early Roman Empire in the East**. Oxford: Oxbow Books. pp. 37-54

Gibbs, J. (2007) Teaching Roman Letters. **The Edward Johnston Foundation Journal**, 11**:** 2-6

Gildersdale, P. (2006) What's in a Grip?: A Historical Study of Pen Holds. **Letter Arts Review**, 21**:** 10-27

Gilissen, L. (1973) **L'expertise des écritures médiévales. Recherche d'une méthode avec application à un manuscrit du XI siècle: le lectionnaire de Lobbes. Codex Bruxellensis 18018.** Gand: Publications de Scriptorium.

Gilissen, L. (1975) Ductus et rapport modulaire. Réponse aux articles de MM. D'Haenens et Ornato. **Scriptorium**, XXIX**:** 235-244

Gilissen, L. (1982) Réflexions sur la morphologie de la lettre **Clio et son Regard. Mélanges offerts à Jacques Stiennon**. Liège. pp. 307-328

Gilissen, L. (1991) Analyse et evolution des formes graphiques. **Anuario de Estudios Medievales**, XXI**:** 323-346

Gilliam, J. F. (1941) The Dux Ripae at Dura. **Transactions of the American Philological Asssociation**, LXXII**:** 157-175

Gilliam, J. F. (1957) The Appointment of Auxiliary Centurions (P. Mich. 164). **TAPA**, 88**:** 155-168

Gilliam, J. F. (1957) Enrolment in the Roman Imperial Army. **Eos**, 48**:** 207-216

Gilliam, J. F. (1964) Romanization of the Greek East: The Role of the Army. **Bulletin of the American Society of Papyrologists**, 2**:** 65-73

Gilliam, J. F. (1965) Dura Rosters and the *Constitutio Antoniniana*. **Historia**, 14**:** 74-92

Gilliam, J. F. (1978) The Dura Latin Papyri Revisited. **Bulletin of the Society of American Papyrologists**, 15**:** 53-57

Gilliam, J. F. (1986) The Roman Military Feriale (2nd Ed) in Gilliam, J. F. (Ed.) **Roman Army Papers**. Amsterdam: Mavors. pp. 123-136

Ginsburg, M. (1940) Roman Military Clubs and Social Functions. **TAPA**, 71**:** 149-156

Gnoli, T. (2007) From *Praepositus Pretenturae* to *Dux Ripae* in Lewin, A. S. & Pellegrini, P. (Eds.) **The Late Roman Army in the Near East from Diocletian to the Arab Conquest**. BAR International Series 1717. 49-55

Goldman, B. (1999) Pictorial Graffiti of Dura-Europos. **Parthica**, 1**:** 19-106

Goldsworthy, A. (2003) **The Complete Roman Army.** London: Thames & Hudson Ltd.

Goldsworthy, A. & Haynes, I. (Eds.) (1999) **The Roman Army as a Community**. Portsmouth, Rhode Island: Journal of Roman Archaeology.

Goody, J. (1986) Writing, Religion and Revolt in Bahia. **Visible Language**, 20**:** 318-343

Gordon, J. S. & Gordon, A. E. (1957) **Contributions to the Palaeography of Latin Inscriptions.** Berkeley: University of California Press.

Grasby, R. D. (1996) A Comparative Study of Five Latin Inscriptions: Measurement and Making. **Papers of the British School at Rome**, 64**:** 95-138

Grasby, R. D. (2002) Latin Inscriptions: Studies in Measurement and Making. **Papers of the British School at Rome**, 70**:** 151-176

Grasby, R. D. (2009) **Processes in the Making of Roman Inscriptions: Introduction.** Oxford: The Centre for the Study of Ancient Documents.

Graux, V. (1877) *Atramentum* <u>in</u> Daremberg, C. & Saglio, E. (Eds.) **Dictionnaire des antiquités grecques et romaines**. Paris: Hachette. pp. 529-530

Greene, K. (1992) How was Technology Transferred in the Western Provinces <u>in</u> Wood, M. & Queiroga, F. (Eds.) **Current Research on the Romanization of the Western Provinces**. Oxford: Tempus Reparatum. pp. 101-105

Gullick, M. (1995) How Fast Did Scribes Write <u>in</u> Brownrigg, L. L. (Ed.) **Making the Medieval Book: Techniques of Production**. Los Altos HIlls and London: Red Gull Press. pp. 39-58

Gumbert, J. (2002) The Pen and its Movement: Some General and Less General Remarks. **Gazette du Livre Médiéval**, 43**:** 14 - 24

Gumbert, J. P. (1965) Structure and Forms of the letter *v* in Greek Documentary Papyri: A Palaeographical Study. **Papyrologica Lugduno-Batava**, XIV**:** 1-12

Gumbert, J. P. (1995) The Speed of Scribes <u>in</u> Condello, E. & De Gregorio, E. M. (Eds.) **Scribe e colofoni: le sottoscrizioni di copisti dalle origini all'avvento della stampa: Atti del seminario di Erice X Colloquio del Comite Internationale de Paleographie Latine** Spoleto: Biblioteca del centro per il collegamento degli studi medievale e umanistici in Umbria. pp. 57-69

Habinek, T. (2009) Situating Literacy at Rome <u>in</u> Johnson, W. A. & Parker, H. N. (Eds.) **Ancient Literacies: The Culture of Reading in Greece and Rome**. Oxford: Oxford University Press. pp. 114-142

Hanoune, R. (1997) L'architecture de la bibliothèque romaine in Gratien, B. & Hanoune, R. (Eds.) **Lire l'écrit: textes, archives, bibliothèques dans l'Antiquité (Ateliers 12)**. Lille: Cahiers de la Maison de la Recherche: Université de Charles-de-Gaulle. pp. 109-117

Hanson, A. E. (1991) Ancient Illiteracy in Humphrey, J. H. (Ed.) **Literacy in the Roman World**. Portsmouth, R.I.: Journal of Roman Archaeology. pp. 159-198

Haran, M. (1996) Codex, "Pinax" and Writing Slat. **Scripta Classica Israelica**, XV**:** 212-222 and 218 figs.

Harris, W. V. (1983) Literacy and Epigraphy I. **ZPE**, 52**:** 87-111

Harris, W. V. (1989) **Ancient Literacy.** Massachusetts, London: Harvard University Press.

Harris, W. V. (1995) Instrumentum Domesticum and Roman Literacy in Solin, H., Salomies, O. & Liertz, U.-M. (Eds.) **Acta Colloquii Epigraphici Latini**. Helsinki: Commentationes Humanarum Litterarum. pp. 19-28

Harvey, F. D. (1978) Greeks and Romans Learn to Write. **Communication Arts in the Ancient World:** 63-78

Häussler, R. (2002) Writing Latin: from Resistance to Assimilation: Language, Culture and Society in N. Italy and S. Gaul in Cooley, A. (Ed.) **Becoming Roman, Writing Latin? Literacy and Epigraphy in the Roman West**. Portsmouth, R.I.: Journal of Roman Archaeology. pp. 61-76

Häussler, R. & Pearce, J. (2007) Towards an Archaeology of Literacy in Lomas, K., Whitehouse, R. & Wilkins, J. B. (Eds.) **Literacy and the State in the Ancient Mediterranean**. London: Accordia Research Institute. pp. 219-236

Haynes, I. (1993) The Romanisation of Religion in the 'Auxilia' of the Roman Imperial Army from Augustus to Septimus Severus. **Britannia**, 24**:** 141-157

Haynes, I. (1999) Military Service and cultural identity in the *auxilia* in Goldsworthy, A. & Haynes, I. (Eds.) **The Roman Army as a Community**. Portsmouth, R.I.: Journal of Roman Archaeology. 165-174

Head, P. M. & Warren, M. (1997) Re-inking the Pen: Evidence from P. Oxy. 657 (P[13]) Concerning Unintentional Scribal Errors. **New Testament Studies**, 43**:** 465-473

Higgitt, J. (1990) The Stonecutter and the Scriptorium: Early Medieval Inscriptions in Britain and Ireland in Koch, W. (Ed.) **Epigraphik 1988: Fachtagung für mittelalterliche**

und neuzeitliche Epigraphik, Graz 10-14 May 1988. Vienna: Verlag der Österreichischen Akademie der Wissenschaften. pp.149-162

Hilton, O. (1984) Effects of Handwriting Instruments on Handwriting Details. **Journal of Forensic Science**, 29**:** 80-86

Hollerbach, J. (1979) A Competence Model of Handwriting. **Visible Language**, 13**:** 252-264

Hope, V. M. (2001) **Constructing Identity: The Roman Funerary Monuments of Aquileia, Mainz and Nimes.** Oxford: Archaeopress.

Hopkins, C. (1979) **The Discovery of Dura-Europos.** New Haven and London: Yale University Press.

Hopkins, K. (1991) Conquest by Book in Humphrey, J. H. (Ed.) **Literacy in the Roman World**. University of Michigan. pp. 133-158

Hornshöj- Moller, S. (1980) Die Beziehung zwischen der älteren und der jüngeren römischen Kursivschrift: Versuch einer kulturhistorischen Deutung. **Aegyptus**, 60**:** 161-223

Horsfall, N. (1989) The Uses of Literacy and the Cena Trimalchionis. **Greece & Rome**, 36**:** 74-89 & 194-209

Horsfall, N. (1994) Statistics or States of Mind? in Bowman, A. & Woolf, G. (Eds.) **Literacy and Power in the Ancient World**. Cambridge: CUP. pp. 59-76

Huber, R. A. & Headrick, A. M. (1999) **Handwriting Identification: Facts and Fundamentals.** Boca Raton, New York: CRC Press.

Humphrey, J. H. (Ed.) (1991) **Literacy in the Roman World**. Ann Arbor, Michigan: Journal of Roman Archaeology.

Hurm, O. (1928) **Schriftform und Schreibwerkzeug.** Vienna: Vienna University Press.

Ibrahim, M. H. (1992) Education of Latin in Roman Egypt in the Light of the Papyri in Pugliese Carratelli, G., Del Re, G., Bonacasa & Etman, A. (Eds.) **Roma e l'Egitto nell'Antichità classica. Atti del I Congresso internazionale Italo-Egiziano**. Rome. pp. 219-226

Iriate, A. (1996) *Plumbum Collo Portare*: Identity Plates in the Roman Army. **Arma: Newsletter of the Roman Military Equipment Conference**, 8**:** 14-15

Jackson, D. (1985) Preparation of Quills and Reeds in Child, H. (Ed.) **The Calligrapher's Handbook**. London: The Society of Scribes and Illuminators. pp. 15-36

James, S. (1985) Dura-Europos and the Chronology of Syria in the 250s AD. **Chiron**, 15**:** 111-124

James, S. (1999) The Community of Soldiers: A Major Identity and Centre of Power in the Roman Empire <u>in</u> Baker, P. & Al., E. (Eds.) **TRAC 98: Proceedings of the Eighth Annual Theoretical Roman Archeology Conference**. Oxford: Oxbow. pp. 14-25

James, S. (2002) Writing the Legions: the Development and Future of Roman Military Studies in Britain. **Archaeological Journal**, 159 pp. 1-58

James, S. (2007) New Light on the Roman Military Base at Dura-Europos: Interim Report on a Pilot Season of Fieldwork in 2005 <u>in</u> Lewin, A. S. & Pellegrini, P. (Eds.) **The Late Roman Army in the Near East from Diocletian to the Arab Conquest**. Oxford: BAR International Series 1717. pp. 29-47

Jarman, C. (1995) **The Development of Handwriting Skills: A Resource Book for Teachers (2nd Ed).** Cheltenham: Stanley Thornes.

Jenkinson, H. (1915) **Palaeography and the Practical Study of Court Hand.** Cambridge: Cambridge University Press.

Johnson, W. A. (2004) **Bookrolls and Scribes of Oxyrhynchus.** Buffalo, Toronto: University of Toronto Press.

Johnson, W. A. & Parker, H. N. (Eds.) (2008) **Ancient Literacies: The Culture of Reading in Greece and Rome**. Oxford: Oxford University Press.

Johnston, E. (1977) **Writing & Illuminating & Lettering.** London: Pitman.

Johnston, E. & Child, H. (Eds.) (1971) **Formal Penmanship and Other Papers**. London: Lund Humphries.

Jones, A. H. M. (1949) The Roman Civil Service (Clerical and Sub-clerical Grades). **Journal of Roman Studies**, 39**:** 38-55

Joshel, S. R. (1992) **Work, Identity and Legal status at Rome: A Study of the Occupational Inscriptions.** Norman: University of Oklahoma Press.

Kaster, R. A. (1983) Notes on "Primary" and "Secondary" Schools in Late Antiquity. **TAPA**, 113**:** 223-246

Kelly, C.M. (1994) Later Roman Bureaucracy: Going through the Files <u>in</u> Bowman, A.K. & Woolf, G. (Eds.) **Literacy and Power in the Ancient World.** Cambridge: Cambridge University Press. pp. 161-76.

Kennedy, D. (1980) The Auxilia and Numeri raised in the Roman province of Syria. Oxford: University of Oxford.

Kennedy, D. (1983) Cohors XX Palmyrenorum: An Alternative Explanation of the Numeral. **ZPE**, 53**:** 214-216

Kennedy, D. (1986) 'Europaean' Soldiers and the Severan Siege of Hatra <u>in</u> Freeman, P. & Kennedy, D. (Eds.) **The Defence of the Roman and Byzantine East: Proceedings of a colloquium held at the University of Sheffield in April 1986**. Oxford: BAR International Series 297(ii). pp. 397-409

Kennedy, D. (1989) The Military Contribution of Syria to the Roman Imperial Army <u>in</u> French, D. & Lightfoot, C. (Eds.) **The Eastern Frontier of the Roman Empire**. Oxford: British Archaeological Reports International Series. pp. 235-246

Kennedy, D. (1994) The *Cohors XX Palmyrenorum* at Dura-Europos <u>in</u> Dabrowa, E. (Ed.) **The Roman and Byzantine Army in the East**. Krakow: Universytet Jagiellonski. pp. 89-98

Kennedy, D. & Riley, D. (1990) **Rome's Desert Frontier from the Air.** Manchester: B. T. Batsford Ltd.

Kennedy, D. L. (1996) **The Roman Army in the East.** Portsmouth, R.I.: Journal of Roman Archaeology Press.

Kenyon, F. G. (1951) **Books and Readers in Ancient Greece and Rome (2nd Edition).** Oxford: Oxford University Press.

Kilpatrick, G. D. (1964) Dura-Europos: The Parchments and the Papyri. **Greek, Roman & Byzantine Studies**, 5**:** 215-225

Kramer, J. (1999) Zwei lateinische Alphabete fur Griechischsprachige. Neuausgabe von P. Ant. 1., fr.1 Verso. **Archiv für Papyrusforschung**, 45**:** 32-38

Kresten, O. (1966) Diplomatische Auszeichnungsschriften in Spätantike und Frühmittelalter. **Mitteilungen des Instituts für Österreichische Geschichtsforschung**, LXXIV**:** 1-50

Kubitschek, W. (1894) *Actarius* <u>in</u> Wissowa, G., Kroll, W. & Mittelhaus, K. (Eds.) RE I. Cols. 301-302

Ladner, P. (1995) Römische Kursive **Lexikon des Mittelalters Pt.7**. München: Lexma Verlag. Cols. 1012-1013

Lalou, E. (1992) **Les Tablettes à Écrire de L'Antiquité à l'Époque Moderne.** Turnhout, Brepols: Bibliologia 12.

Langner, M. (2001) **Antike Graffitizeichnungen. Motive, Gestaltung und Bedeutung.** Wiesbaden: Ludwig Reichert.

Larisch, R. (1924) **Über Schreibwerkzeuge und ihren gestaltenden Einfluss auf die Schriftentwicklung.** Vienna: Offprint from Graphische Revue 6.

Lassus, J. (1959) La Technique de la Mosaique selon saint Augustin. **Libyca: Archéologie - Épigraphie**, VII**:** 143-146

Laur-Belart, R. (1942/3) Über die Schreibkunst beim römischen Militar. **Jahresbericht der Gesellschaft pro Vindonissa:** 32-39

Le Blant, E. (1859) Sur les graveurs des inscriptions antiques. **Revue de l'Art Chrétien**, 7**:** 557-579

Lendon, J. E. (1997) **Empire of honour : the art of government in the Roman world.** Oxford: Clarendon.

Lendon, J. E. (2006) Contubernalis, Commanipularis, and Commilito in Roman Soldiers' Epigraphy: Drawing the Distinction. **ZPE**, 157**:** 270-276

Leriche, P. (1987) Doura-Europos grecque, parthe et romaine. **Mesopotamia**, 22**:** 57-65

Leriche, P. (2004) Bibliographie recente sur Doura-Europos. **Doura-Europos Études, 1994-1997**, V**:** 255-265

Lewery, A. J. (1989) **Signwritten Art.** London: David & Charles Plc.

Lewis, N. (1974) **Papyrus in Classical Antiquity.** Oxford: Clarendon Press.

Lewis, N. (1989) **Papyrus in Classical Antiquity: A Supplement.** Brussels: Fondation Égyptologique Reine Élisabeth.

Lewis, N. (1992) Papyrus in Classical Antiquity: an update. **Chronique d'Égypte**, 67**:** 308-318

Lieu, S. (2007) Rome on the Euphrates - The Final Siege of Dura-Europos in Alston, R. & Lieu, S. (Eds.) **Aspects of the Roman East: Papers in Honour of Professor Fergus Millar FBA**. Macquarie University: Brepols, Turnhout, [Sydney]. pp. 33-61

Liversidge, J. E. A. (1968) **Britain in the Roman Empire.** London: Routledge & Kegan Paul.

Longcamp, M., Boucard, C., Gilhodes, J.-C. & Velay, J.-L. (2006) Remembering the Orientation of Newly Learned Characters: A Comparison between Handwriting and Typing. **Human Movement Science**, 25**:** 646-656

Lowe, E. A. (1926) English Handwriting. **Society for Pure English: Tracts**, XXII**:** 71-98

Lowe, E. A. (1969) **Handwriting. Our Medieval Legacy.** Rome: Edizioni di Storia e Letteratura.

Macmullen, R. (1960) Inscriptions on Armor and the Supply of Arms in the Roman Empire. **American Journal of Archaeology**, 64**:** 23–40

Macmullen, R. (1964) Imperial Bureaucrats in the Provinces. **Harvard Studies in Classical Philology**, 68: 305-16.

Macmullen, R. (1966) Provincial Languages in the Roman Empire. **American Journal of Philology**, 87**:** 1-7

Macmullen, R. (1982) The Epigraphic Habit in the Roman Empire. **American Journal of Philology**, 103**:** 233-246

Macmullen, R. (1984) The Legion as a Society. **Historia**, 33**:** 440-456

Macmullen, R. (1984) **Soldier and Civilian in the Later Roman Empire.** Cambridge: Harvard University Press.

Mallon, J. (1948) L'écriture de la chancellerie impériale romaine. **Acta Salmanticensia, filologia y letras, Universidad de Salamanca**, IV**:** 167-189, 166 Plates, 162 tables

Mallon, J. (1952) **Paléographie romaine.** Madrid: Instituto Antonio de Nebrija de Filologia.

Mallon, J. (1953) Paléographie des papyrus d'Egypte et des inscriptions du monde romain. **Museum Helveticum**, X**:** 141-160

Mallon, J. (1955) Une inscription latine incomplètement gravée. **Libyca**, III**:** 155–162

Mallon, J. (1961) L'archéologie des monuments graphiques. **Revue Historique.**, 226**:** 298-299

Mallon, J. (1982) **De l'écriture : recueil d'études publiées de 1937 à 1981.** Paris: Editions du Centre national de la recherche scientifique.

Mallon, J., Perrat, C. & Marichal, R. (1939) **L'écriture latine de la capitale romaine à la minuscule : 54 planches reproduisant 85 documents originaux.** Paris: Arts et metiers graphiques.

Mann, C. (1985) The 'Palmyrene' Diplomas in Roxan, M. M. (Ed.) **Roman Military Diplomas 1978-1984**. London: University College London Institute of Archaeology. pp. 217-218

Manning, W. H. (1985) **Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum.** London: British Museum Publications.

Marichal, R. (1948) De la capitale romaine à la minuscule in Audin, M. (Ed.) **Somme Typographique**. Paris: Paul Dupont. pp. 62-111

Marichal, R. (1950) L'écriture latine du I au VII Siècle: les sources. **Scriptorium**, 4**:** 116-142

Marichal, R. (1950) L'écriture latine et l'écriture grecque du Ier au VIe siècle. **Antiquité Classique**, 19**:** 113-140

Marichal, R. (1952) L'écriture latine de la chancellerie impériale. **Aegyptus**, 32**:** 336-350

Marichal, R. (1953) Le B 'panse à droite' dans l'ancienne cursive romaine et les origines du B minuscule, **Studi di paleografia, diplomatica storia e araldico in onore di Cesare Manarese**. Milan: Dott. A. Giuffrè. pp. 347-363

Marichal, R. (1953) Palèographie et épigraphie latines **Actes du deuxième congrès international d'épigraphie grecque et latine 1952**. Paris: Librairie d'Amerique et d'Orient Adrien Maisonneuve. pp. 180-192

Marichal, R. (1956) L'écriture de Paul de Leyde in G. G. Archi, M. D., E. Levy, R. Marichal, H. L. W. Nelson (Ed.) **Pauli sententiarum fragmentum leidense, Cod. Leid. B.P.L. 2589. Ediderunt et commentariis instruxerunt** Leiden: Studia Gaiana 4. pp. 24-57 & 24 b/w plates

Marichal, R. (1963) L' écriture et la civilisation occidentale du I au XVI siècle **L'Ecriture et la Psychologie des Peuples**. Paris: Armand Colin. pp. 199–247

Marichal, R. (1967) Lecture publication et interpretation des graffiti. **Revue des Études Latines**, XLV**:** 147-163

Marichal, R. (1967/8) Paléographie Latine et Française. **Ecole Pratique des Hautes Etudes: Annuaire (IVeme Section Sciences Historiques et Philologiques):** 295-314

Marichal, R. (1968/9) Paléographie Latine et Française. **Ecole Pratique des Hautes Etudes: Annuaire (IVeme Section Sciences Historiques et Philologiques):** 271-282

Marichal, R. (1992) **Les ostraca de Bu Njem.** Tripoli: Assraya al Hamra.

Marrou, H. & Lamb, G. (1956) **A history of education in antiquity.** London: Sheed and Ward.

Massoudy, H. (2007) D'encre et de lumière: rencontre avec Hassan Massoudy. **Plume**, 40**:** 57-59

Mastruzzo, A. (1995) Ductus, corsività, storia della scrittura: alcune considerazioni. **Scrittura e Cività**, 19**:** 403-464

Matheson, S. (1992) The tenth season at Dura-Europos: 1936-7. **Syria**, 69**:** 121-140

Maxfield, V. A. (2003) Ostraca and the Roman Army in the Eastern Desert; in Wilkes, J. (Ed.) **Documenting the Roman Army**. London: Bulletin of the Institute of Classical Studies Supplement 81. pp. 153-169.

McNeill, W. H. (1995) **Keeping together in time : dance and drill in human history.** Cambridge, Mass. : Harvard University Press.

Mcree, J. (1994) Unity or Division? The Social Meaning of Guild Ceremony in Urban Communities <u>in</u> Hanawalt, B. A. & Reyerson, K. L. (Eds.) **City and Spectacle in Medieval Europe**. Minneapolis/London: University of Minnesota Press. pp. 189-207

Mediavilla, G. (1996) **Calligraphy.** Belgium: Scirpus Publications.

Meissner, B. (2003) Mündliche Vermittlung und Schriftliche Unterweisung in der Antiken Berufssausbildung <u>in</u> Horster, M. & Reitz, C. (Eds) **Antike Fachschriftssteller: Literarischer Diskurs und Sozialer Kontext**. Stuttgart: Franz Steiner Verlag. pp. 153-175.

Mercator, G. (1549, 1930) **The Treatise of Gerard Mercator, Literarum Latinarum, quas Italicas, cursoriasque vocant, scribendarum ratio** Paris: Pegasus Press.

Metzger, B. M. (1958-9) The Furniture of the Scriptorium at Qumran. **Revue de Qumran**, I**:** 509-515

Metzger, B. M. (1968) When did Scribes Begin to Use Writing Desks? <u>in</u> Metzger, B. M. (Ed.) **Historical and Literary Studies: Pagan, Jewish and Christian** Grand Rapids: Eerdmans. pp. 123-137 & Pls. 123-119

Meyer, E. (1990) Explaining the Epigraphic Habit in the Roman Empire: The Evidence of Epitaphs. **Journal of Roman Studies**, 80**:** 74-96

Meyer, E. (2004) **Legitimacy & Law in the Roman World.** Cambridge: Cambridge University Press.

Millar, F. (1968) Local Cultures in the Roman Empire: Libyan, Punic and Latin in Roman Africa. **Journal of Roman Studies**, 58**:** 126-134

Millar, F. (1987) Empire, Community and Culture in the Roman Near East: Greeks, Syrians, Jews and Arabs. **Journal of Jewish Studies**, 38**:** 143-164

Millar, F. (1993) **The Roman Near East, 31BC - AD337.** Cambridge, Mass. and London: Harvard University Press.

Millar, F. G. B. (1995) Latin in the Epigraphy of the Roman Near East <u>in</u> Solin, H., Salomies, O. & Liertz, U.-M. (Eds.) **Acta Colloquii Epigraphici Latini Helsingiae 3 - 6 September 1991 Habiti**. Helsinki: Helsinki University Press. pp. 403-419

Millar, F.G.B. (2000) Trajan: Government by Correspondence <u>in</u> Gonzàlez, J. (Ed) **Trajano Emperador de Roma**. Rome: Lerma di Bretschneider. pp. 363-388.

Millard, A. (2000) **Reading and Writing in the Time of Jesus.** Sheffield: Barnes & Noble.

Milner, N. P. (Ed.) (1993) **Vegetius: Epitome of Military Science**. Liverpool: Liverpool University Press.

Mitchell, A. C. (1937) **Inks, their Composition and Manufacture.** London: Charles Griffin & Co. Ltd.

Montessori, M. (1972) **The Discovery of the Child.** New York: Aakar Books.

Morison, S. (1949) **Notes on the Development of Latin Script from early to modern times.** Cambridge: Cambridge University Press.

Morison, S. (1972) **The Politics of Script.** Oxford: Oxford University Press.

Morris, R. (2000) **Forensic Handwriting Identification: Fundamental Concepts and Principles.** London: Academic Press.

Muehlberger, R. J. (1989) Class Characteristics of Hispanic Writing in the Southeastern United States. **Journal of Forensic Sciences**, 34**:** 371-376

Muir, J. V. (1984) A Note on Ancient Methods of Learning to Write. **Classical Quarterly**, NS 34**:** 236-237

Myerly, S. (1992) The Eye must Entrap the Mind. **Journal of Social History**, 26**:** 105-131

Nelis-Clément, J. (2006) Le gouverneur et la circulation de l'information dans les provinces romaines sous le haut-empire <u>in</u> Capdetrey, L. & Nelis-Clément, J. (Eds.) **La Circulation de l'information dans les états antiques**. Bordeaux: De Boccard. pp. 141-160

Nicolaj, G. (1973) Osservazioni sul canone della capitale libraria romana fra I e III Secolo <u>in</u> Nicolaj, G. P. (Ed.) **Miscellanea in memoria di Giorgio Cencetti**. Turin: Bottega d'Erasmo. pp. 3-28

Nicolaj, G. (2007) Questions terminologiques et questions de méthode: Autour de Giorgio Cencetti, Emanuele Casamassima et Albert Derolez. **Bibliothèque de l'École des Chartes**, 165**:** 9-28

Noordzij, G. (2005) **The Stroke: Theory of Writing.** London: Hyphen Press.

Oates, D. (1955) A Note on Three Latin Inscriptions from Hatra. **Sumer**, 11**:** 39-43

Olson, D. (1986) Interpreting Texts and Interpreting Nature: The Effects of Literacy and Epistemology. **Visible Language**, 20**:** 302-317

Olson, D. (2009) Why Literacy Matters, Then and Now <u>in</u> Johnson, W. A. & Parker, H. N. (Eds.). Oxford: Oxford University Press. pp. 385-404

Omont, H. (1911) Anciennes recettes d'encres. **Bibliothèque de l'École des Chartes**, 72**:** 437-438

Pack, R. A. (1965) **The Greek and Latin Literary texts from Greco-Roman Egypt (2nd Edition).** Michigan: University of Michigan Press.

Parássoglou, G. (1979) Some Thoughts on the Posture of Ancient Scribes when Writing on Papyrus Rolls. **Scrittura e Civiltà**, 3**:** 5-21

Parkes, M. (2008) **Their Hands Before Our Eyes.** London: Ashgate Publishing.

Parkinson, R. & Quirke, S. (1995) **Papyrus.** London: British Museum Press.

Parsons, P. (1976) Petitions and a Letter: The Grammarian's Complaint <u>in</u> Hanson, A. (Ed.) **Collectanea Papyrologica I**. Bonn: Habelt. pp. 409-446

Parsons, P. (2007) Copyists of Oxyrhynchus <u>in</u> Bowman, A.K. et al (Eds.) **Oxyrhynchus: A City and its Texts**. London: Early Egyptian Exploration Society. pp. 262-270.

Pegler, A. (2000) Social Organisations within the Roman Army <u>in</u> Fincham, G., Harrison, G., Holland, R. R. & Revell, L. (Eds.) **TRAC 99: Proceedings of the Ninth Annual Theoretical Roman Archaeology Conference**. Oxford: Oxbow Books. pp. 36-43

Perrat, C. (1955) Paléographie et diplomatique. **Relazioni del X Congresso Internazionale di Scienze Storiche (Florence)** I**:** 345–384

Perry, J. S. (2006) **The Roman Collegia : the Modern Evolution of an Ancient Concept.** Leiden: Brill.

Petrikovits Von, H. (1975) **Die Innenbauten römischer Legionslager während der Prinzipatszeit** Opladen: Westdeutscher Verlag.

Petrucci, A. (1995a) Book, Handwriting and School <u>in</u> Radding, C. M. (Ed.) **Writer and Readers in Medieval Italy: Studies in the History of Written Culture**. London: Yale University Press. pp. 59-76

Petrucci, A. (1995b) Literacy and Graphic Culture of Early Medieval Scribes <u>in</u> Radding, C. M. (Ed.) **Writer and Readers in Medieval Italy: Studies in the History of Written Culture**. London Yale University Press. pp. 77-102

Phang, S. E. (2005) Soldiers' Slaves, 'Dirty Work', and the Social Status of Roman Soldiers <u>in</u> Aubert, J.-J. & Varhelyi, Z. (Eds.) **A Tall Order: Writing the Social History of the Ancient World**. Munchen: K. G. Saur. pp. 203-225

Phang, S. E. (2007) Military Documents, Languages, and Literacy <u>in</u> Erdkamp, P. (Ed.) **A Companion to the Roman Army**. Oxford: Blackwell. pp. 287-305

Phang, S. E. (2008) **Roman Military Service: Ideologies of Discipline in the Late Republic and Early Principate.** Cambridge: Cambridge University Press.

Philonenko, M. (1928) Le collège des "officiales tabularii legionis" dans le camp de Lambèse. **Revue Africaine**, LXIX**:** 429- 435

Piccottini, G. (Ed) *Librarii* in **Corpus Signorum Imperii Romani Corpus der Skulpturen der Römischen Welt: Österreich Band II. Fasz 3: Die Dienerinnen- und Dienerreliefs des Stadtgebietes von Virunum**. Vienna: Verlag des Österreichischen Akademie der Wissenschaften. pp. 45-60.

Pirenne, H. (1929) l'instruction des marchands au moyen âge. **Annales d'histoire économique et sociale**, I**:** 13-28

Pollard, N. (1996) The Roman Army as a 'total institution' in the Near East? Dura-Europos as a Case Study. **Journal of Roman Archaeology Supplementary Series**, 18**:** 211-227

Pollard, N. (2000) **Soldiers, Cities and Civilians in Roman Syria.** Ann Arbor: University of Michigan Press.

Pollard, N. (2004) Roman Material Culture Across Imperial Frontiers? Three Case Studies from Parthian Dura-Europos in Colvin, S. (Ed.) **The Greco-Roman East: Politics, Culture, Society**. Cambridge: Cambridge University Press

Pollard, N. (2006) The Roman Army in Potter, D. S. (Ed.) **A Companion to the Roman Army**. Oxford: Blackwell Publishing. 206-227

Pollard, N. (2007) Colonial and Cultural Identities in Parthian and Roman Dura-Europos in Lieu, S. & Alston, R. (Eds.) **Aspects of the Roman East: Festschrift Fergus Millar**. Belgium: Brepols. 81-102

Potter, D. S. (2004) **The Roman Empire at Bay: AD 180-395.** London: Routledge.

Poulle, E. (1977) Discussions: une histoire de l'écriture. **Bibliotheque de l'École des Chartes**, 135**:** 137-144

Poulle, E. (2007) Aux origines de l'écriture liée: les avatars de la mixte (XIV-XV siècles). **Bibliotheque de l'École des Chartes,** 165: 187-200

Purcell, N. (1995) Literate Games. **Past and Present**, 147**:** 3-37

Rankov, B. (1999) The Governor's Men: the Officium Consularis in Goldsworthy, A. & Haynes, I. (Eds.) **The Roman Army as a Community**. Portsmouth, R.I.: Journal of Roman Archaeology Supplement. pp. 15-33

Rankov, B. (2007) Military Forces <u>in</u> Sabin, P., Van Wees, H. & Whitby, M. (Eds.) **The Cambridge History of Greek and Roman Warfare**. Cambridge: Cambridge University Press. pp. 30-75

Raybould, M. (1999) **A study of inscribed material from Roman Britain: an enquiry into some aspects of literacy in Romano-British society.** Oxford: Oxford University Press.

Rebuffat, R. (1975) Bu Njem 1971. **Libya Antiqua**, 11-12**:** 189-242

Rebuffat, R. (1986) Le Bouclier de Dura. **Syria**, 63**:** 83-105

Rebuffat, R. (1995) Peinture et Inscriptions. **Revue Archéologique de Picardie**, Special 10**:** 23-31

Rebuffat, R. (2000) L'armée romaine à Gholaia <u>in</u> Alföldy, G., Dobson, B. & Eck, W. (Eds.) **Kaiser, Heer und Gesellschaft in der römischen Kaiserzeit. Gedenkschrift für Eric Birley**. Stuttgart: Franz Steiner. pp. 227-259

Reeves, M. B. (2004) The *Feriale Duranum,* Roman Military Religion, and Dura-Europos: A Reassessment. Buffalo: State University of New York.

Robert, L. (1966) Inscriptions de l'antiquité et du Bas-Empire à Corinthe. **Revue des Études Grecques**, 79**:** 732-770

Rochette, B. (1994) Traducteurs et traductions dans l'Égypte gréco-romaine. **Chronique d'Egypte**, 69**:** 313-322

Rochette, B. (1996) Papyrologica bilinguia graeco-latina. **Aegyptus**, 64**:** 57-79

Rochette, B. (1996) Sur le bilinguisme dans l'Égypte gréco-romaine. **Chronique d'Egypte**, 71**:** 153-168

Rochette, B. (1997a) Le latin dans le monde grec. **Chronique d'Egypte**, 71**:** 153-168

Rochette, B. (1997b) **Le latin dans le monde grec.** Brussels: Latomus.

Rochette, B. (1999) Écrire en deux langues. **Scriptorium**, 53**:** 325-334

Rostovtzeff, M. (1933) Les Archives Militaires de Doura **Comptes Rendus de L'Académie des Inscriptions**. Paris. pp. 309-323

Rostovtzeff, M. (1934) Das Militärarchiv von Dura. **Münchener Beiträge zur Papyrusforschung**, XIX**:** 351-378

Rostovtzeff, M. (1938) **Dura-Europos and its Art.** Oxford: Oxford University Press.

Rostovtzeff, M. (1942) Vexillum and Victory. **Journal of Roman Studies**, 32**:** 92-106

Rouse, M. A. & Rouse, R. H. (1989) Wax Tablets. **Language and Communication**, 9**:** 175-191

Rouse, R. H. & Rouse, M. A. (1990) The Vocabulary of Waxed Tablets. **Harvard Library Bulletin N.S.I.:** 12-19

Russell, D. A. (2001) **Quintilian (trans): The orator's education.** Cambridge, Mass., London: Harvard University Press.

Sabin, P., Van Wees, H. & Whitby, M. (Eds.) (2007) **The Cambridge History of Greek and Roman Warfare**. Cambridge: Cambridge University Press.

Sartre, M. (2000) Syria and Arabia <u>in</u> Bowman, A., Garnsey, P. & Rathbone, D. W. (Eds.) **The Cambridge Ancient History XI^2: The High Empire, A.D. 70-192**. Cambridge: Cambridge University Press. pp. 635-663

Sartre, M. (2005) **The Middle East Under Rome.** Cambridge, Mass: Harvard University Press.

Sassoon, R. (1990) La Tenue de la Plume <u>in</u> Sirat, C. (Ed.) **De L'Écriture, Le Cerveau, L'Oeil et La Main (Bibliologia 10)**. Turnhout: Brépols. pp. 140-145

Sassoon, R. (1993) **The Art and Science of Handwriting.** Oxford: Intellect Ltd.

Sassoon, R. (1995) **The Acquisition of a Second Writing System.** Oxford: Intellect Ltd.

Sassoon, R. (1999) **Handwriting of the Twentieth Century.** London: Routledge.

Sassoon, R. (2003) **Handwriting : the Way To Teach It.** London: Paul Chapman.

Sassoon, R., Wing, A. & Nimmo-Smith, I. (1989) Developing Efficiency in Cursive Handwriting: An Analysis of 'T' Crossing Behaviour in Children <u>in</u> Plamondon, R. J. E., Suen, C. Y. E. & Simner, M. L. E. (Eds.) **Computer Recognition and Human Production of Handwriting**. Singapore: World Scientific. pp. 287-297

Scheid, J. (1997) L'écrit et l'écriture dans la religion romaine: mythe et réalité <u>in</u> Gratien, B. & Hanoune, R. (Eds.) **Lire l'écrit: textes, archives, bibliothèques dans l'antiquité (Ateliers 12)**. Lille: Cahiers de la Maison de la Recherche: Université de Charles-de-Gaulle. pp. 99-108

Schiaparelli, L. (1921) **La Scrittura latina nell'età romana: Note paleografiche, avviamento allo studio della scrittura latina nel medio evo.** Como: Tipografia editrice Ostinelli di C. Nani.

Schlumberger, D. (1942) Les gentilices romains des Palmyrèniens. **Bulletin d'Etudes Orientales de l'Institut Français de Damas:** 53-82

Schmidt, J. (1893) Album **RE I.I.** pp. 1332-1336

Sedeyn, M. J. (1990) Questioned Documents: the Human Trace as a Body Flow. **Visible Language**, XXIV**:** 164-175

Seeck, O. (1893) *Actarius* **RE I,** Cols. 301-302

Seider, R. (1972) **Paläographie der lateinischen Papyri Band I.** Stuttgart: Hiersemann.

Seider, R. (1978) **Paläographie der lateinischen Papyri Band II, 1.** Stuttgart: Hiersemann.

Seider, R. (1981) **Paläographie der lateinischen Papyri Band II, 2.** Stuttgart: Hiersemann.

Sève, M. (1990) Sur la taille des rayonnages dans les bibliothèques antiques. **Revue de Philologie**, 64**:** 173-179

Shaw, B. D. (1984) Soldiers and Society: the Army in Numidia. **Opus**, 2**:** 133-159

Sijpesteijn, P. (1986) P. Princ. II 96 und Schreibübungen. **ZPE**, 64**:** 115-116

Sirat, C. (Ed.) (1990) **De l'écriture, le cerveau, l'oeil et la Main**. Brépols: Turnhout.

Sirat, C. (1994) Handwriting and the Writing Hand <u>in</u> Watt, W. C. (Ed.) **Writing Systems and Cognition: Perspectives from Psychology, Physiology, Linguistics, and Semiotics**. Dordrecht: Kluwer Academic Publishers. pp. 375-460

Sirat, C. (2006) **Writing as Handwork: A History of Handwriting in Mediterranean and Western Culture.** Brepols: Turnhout.

Skeat, T. C. (1982) The Length of the Standard Papyrus Roll and the Cost Advantage of the Codex. **ZPE:** 169-176

Skeat, T. C. (1990) Roll Versus Codex - A New Approach. **ZPE**, 84**:** 297–298

Small, J. P. (1997) **Wax Tablets of the Mind.** London, New York: Routledge.

Smith, M. (2002) Pour une préhistoire des écritures modernes. Gazette du Livre Mediéval, 40: 1-11).

Smith, M. (2003) De la cire au papyrus, de la cire au papier: deux mutations de l'écriture? **Gazette du Livre Médieval**, 43: 1-14

Spaul, J. (2000) **Cohors[2]. The evidence for and a short history of the auxiliary infantry units of the Imperial Roman Army.** Oxford.

Speidel, M. A. (1996) **Die Römischen Schreibtafeln von Vindonissa: Lateinische Texte des militärischen Alltags und ihre Geschichtliche Bedeutung.** Brugg: Gesellschaft pro Vindonissa.

Speidel, M. A. (1998) *Legio IIII Scythica*, its movements and men in Kennedy, D. (Ed.) **The Twin Towns of Zeugma on the Euphrates. Rescue work and historical studies**. Portsmouth, R.I.: JRA Supplementary Series 27. pp. 172-204

Speidel, M. A. (1999) Stadt- und Lagerleben in Hesberg, H. V. (Ed.) **Das Militär als Kulturträger in römischer Zeit**. Cologne: Hundt Druck GmbH. 75 - 86

Speidel, M. A. (2001) Specialisation and Promotion in the Roman Imperial Army in De Blois, L. (Ed.) **Administration, Prosopography and Appointment Policies in the Roman Empire. First Workshop of the International Network Impact of Empire June 28 - July 1 2000**. Amsterdam: J.C.Gieben. pp. 50-61

Speidel, M.A. (2006) *Militia*. Zu Sprachgebrauch und Militarisierung in der kaiserzeitlichen Verwaltung in Kolb, A. (Ed) **Herrschaftsstrukturen und Herrschaftspraxis: Konzepte, Prinzipien und Strategien der Administration im römischen Kaiserreich (Akten der Tagung an der Universität Zürich 18.-20.10.2004).** Berlin: Akademie Verlag GmbH. pp. 263-268

Speidel, M. A. (2007) Einheit und Vielfalt in der römischen Heeresverwaltung in Haensch, R. & Heinrichs, J. (Eds) **Herrschen und Verwalten: Der Alltag der römischen Administration in der Hohen Kaiserzeit**. Cologne, Weimar, Vienna: Böhlau Verlag. 173-194

Speidel, M. P. (1978a) **The Religion of Iupiter Dolichenus in the Roman Army.** Leiden: EPRO 63.

Speidel, M. P. (1978b) **Guards of the Roman Armies: An Essay on the Singulares of the Provinces.** Bonn: Rudolf Habelt Verlag GmbH.

Speidel, M. P. (1984a) 'Europeans' - Syrian Elite Troops at Dura-Europos and Hatra in Speidel, M. P. (Ed.) **Roman Army Studies II**. Amsterdam: Gieben. pp. 301-309

Speidel, M. P. (1984b) The Career of a Legionary in Speidel, M. P. (Ed.) **Roman Army Papers I**. Amsterdam: J.C.Gieben. pp. 197-202

Speidel, M. P. (1984c) The Rise of Ethnic Units in the Roman Imperial Army in Speidel, M. P. (Ed.) **Roman Army Studies**. Amsterdam: J.C. Gieben. pp. 117-149

Speidel, M. P. (1992) The Soldiers' Servants in Speidel, M. P. (Ed.) **Roman Army Studies II, Mavors, VIII**. Stuttgart: Steiner pp. 342–352

Spunar, P. (1976) Paleographical Difficulties in Defining an Individual Script in Gumbert, J. P. & Dehaan, M. J. M. (Eds.) **Litterae Textuales: Miniatures, Scripts, Collections. Essays Presented to G.I. Lieftinck**. Amsterdam: EJ Brill. 62 - 68

Spunar, P. (1990) L'esthetique et l'ecriture **Actas del VIII coloquio del Comite Internacional de Paleografia Latina Madrid-Toledo 20 Setiembre - 1 Octubre 1987**. Madrid - Toledo: Joyas Bibliograficas. pp. 221-224

Srihari, S. N., Sung-Hyuk, C., Arora, H. & Lee, S. (2002) Individuality of Handwriting. **Journal of Forensic Sciences**, 47**:** 856-872

Stauner, K. (2004) **Das offizielle Schriftwesen des römischen Heeres von Augustus bis Gallienus (27 v. Chr. – 268 n. Chr.):   Eine Untersuchung zu Struktur, Funktion und Bedeutung der offiziellen militärischen Verwaltungsdokumentation und zu deren Schreibern.** Bonn: Dr Rudolf Habelt GMBH

Stauner, K. (2007) Kommunikation in Krieg und Frieden. **Antike Welt**, 75**:** 75-81

Stauner, K. (2010) *Rationes ad milites pertinentes*: Organisation und Funktion der Binnenadministration militärischen Einheiten in der frühen und hohen Kaiserzeit in Eich, A. (Ed) **Die Verwaltung der kaiserzeitlichen römischen Armee**. Stuttgart: Franz Steiner Verlag. pp. 37-85

Steffens, F. (1909) **Paléographie latine.** Paris: Trèves.

Stock, B. (1983) **The Implications of Literacy.** Princeton: Princeton University Press.

Stock, B. (1986) Texts, Readers, and Enacted Narratives. **Visible Language**, 20**:** 294-301

Stoll, O. (1998) Offizier und Gentleman: der römische Offizier als Kultfunctionar. **Klio**, 80**:** 134-162

Stoll, O. (2001b) Der Transfer von Technologie in der römischen Antike in Speidel, M. P. (Ed.) **Römisches Heer und Gesellschaft: Gesammelte Beiträge 1991-1999**. Stuttgart: Franz Steiner Verlag. pp. 395-420

Störmer, F. C., Lorentzen, I., Fosse, B., Capasso, M. & Kleve, K. (1990) Ink in Herculaneum. **Cronache Ercolanesi**, 20**:** 183

Stout, S. E. (1920-1) Training Soldiers. **Classical Journal**, 16**:** 423-431

Sturken, M. & Cartwright, L. (2001) **Practices of Looking : an Introduction to Visual Culture.** Oxford: OUP.

Suetonius (1995) **De Grammaticis et Rhetoribus.** Oxford: Oxford University Press.

Susini, G. (1973) **The Roman Stonecutter.** Oxford: Oxford University Press.

Susini, G. (1988) Compitare per via – spelling out along the road. **Alma Mater Studiorum**, 1**:** 105-124

Susini, G. (1989) Le scritture esposte <u>in</u> Cavallo, G. (Ed.) **Lo Spazio letterario di Roma Antica**. pp. 271-305

Tait, W. J. (1988) Rush and Reed: the Pens of Egyptian and Greek Scribes <u>in</u> Mandilaras, B. (Ed.) **Proceedings of the XVIII International Congress of Papyrology (25 - 31 May 1986)**. Athens: Greek Papyrological Society. pp. 477-481

Thomas, J. D. (2007) Latin Texts and Roman Citizens <u>in</u> **Oxyrhynchus: A City and its Texts**, Bowman, A.K. et al (Eds). London: Egyptian Exploration Society. pp. 231-239

Thomas, J. D. & Davies, R. W. (1977) A New Military Strength Report on Papyrus. **Journal of Roman Studies**, 67**:** 50-61

Thomassen, A. J. W. M. (2005) Handwriting <u>in</u> Strazny, P. (Ed.) **Encyclopedia of Linguistics**. Oxford, New York: Fitzroy Dearborn. 439-441

Thompson, E. M. (1912) **An Introduction to Greek and Latin Palaeography.** Oxford: Clarendon Press.

Tjäder, J.-O. (1953) Die Forschungen Jean Mallons zur Römischen Palaeographie. **Mitteilungen des Instituts für Österreichische Geschichtsforschung**, 61**:** 385-396

Tjäder, J.-O. (1954-1982) **Die Nichtliterarischen Lateinischen Papyri Italiens aus Der Zeit 445-700 (3 vols).** Lund C.W.K. Gleerup.

Tjäder, J.-O. (1977) Latin Papyri. **Eranos**, 75**:** 131-161

Tjäder, J.-O. (1979) Considerazioni e proposte sulla scrittura latina nell'età romana <u>in</u> (Eds.) Scuola Speciale per Archivisti e Bibliotecari dell'Università di Roma, **Palaeographica, diplomatica et archivistica: studi in onore Di Giulio Battelli**. Rome: Edizioni di storia e letteratura. pp. 31-60

Tjäder, J.-O. (1982) Some Ancient Letter-Forms in the Later Roman Cursive and Early Medieval Script and the Script of the Notarii. **Scrittura e Civiltà**, 6**:** 5-21

Tjäder, J.-O. (1985) Later Roman (Common) Script: A Tentative Definition in Anticipation of a forthcoming Monograph <u>in</u> Lemaire, J. & Van Balberghe, E. (Eds.) **Calames et Cahiers: Mèlanges Gilissen**. Brussels: Scriptorium. pp. 187-197

Tomlin, R.S.O. (1988) Handwriting in **The Temple of Sulis Minerva at Bath: Vol. 2, The Finds from the Sacred Spring**, Cunliffe, B. (Ed). Oxford: Oxford University Committee for Archaeology. pp. 84-94

Tomlin, R. S. O. (2003) Documenting the Roman Army at Carlisle in Wilkes, J. J. (Ed.) **Documenting the Roman Army**. London: Bulletin of the Institute of Classical Studies. pp. 175-187

Too, Y. L. (2001) **Education in Greek and Roman antiquity.** Leiden: Brill.

Trithemius, J. (1974) **In Praise of Scribes (*de Laude Scriptorum*).** Lawrence, Kansas: Coronado Press.

Turner, E. G. (1956) A Writing Exercise from Oxyrhynchus. **Museum Helveticum**, 13**:** 236-238

Turner, E. G. (1957) Half a Line of Virgil from Egypt **Studi in Onore di Aristide Calderini e Roberto Paribeni**. Milan: Casa Editrice Ceschina. pp. 157-161

Turner, E. G. (1965) Athenians Learn to Write: Plato Protagoras 326d. **Bulletin of the Institute of Classical Studies**, 12**:** 67-69

Turner, E. G. (1978) The Terms Recto and Verso: the Anatomy of the Papyrus Roll in Bingen, J. & Nachtergael, G. (Eds.) **Actes du XVème Congrès Internationale de Papyrologie I**. Brussels: Papyrologica Bruxellensia. pp. 1-71

Turner, E. (1983) Sniffing Glue. **Cronache Ercolanesi**, 13**:** 7–14

Turner, E. G. (1987) **Greek Manuscripts of the Ancient World.** London: Institute of Classical Studies.

Urwick, A. (1985) Papyrus in Child, H. (Ed.) **The Calligrapher's Handbook**. London: Society of Scribes and Illuminators. pp. 96-97

Van Hoesen, H. B. (1915) **Roman Cursive Writing.** Princeton: Princeton University Press.

Van Minnen, P. (2007) The Millennium of Papyrology in Palme, B. (Ed) **Akten des 23 Internationalen Papyrologenkongresses 22–28 July 2001.** Vienna: Verlag der Österreichischen Akademie der Wissenschaften. pp. 703-14

Van Nijf, O. (1997) **The Civic World of Professional Associations in the Roman East.** Amsterdam: J.C. Gieben.

Van Nijf, O. M. (2000) Inscriptions and Civic Memory in the Roman East in Cooley, A. (Ed.) **The Afterlife of Inscriptions**. London: BICS Supplement 75. pp. 21-36

Van Sommers, P. (1991) Where Writing Starts: The Analysis of Action applied to the Historical Development of Writing in Wann, J., Wing, A. M. & Sovik, N. (Eds.) **Development of Graphic Skills**. London: Academic Press. pp. 53-75

Verhoogt, A. (2009) Dictating Letters in Greek and Roman Egypt from a Comparative Perspective **http://sitemaker.umich.edu/verhoogt/files/dictating1.pdf.** Online [Accessed 4th January 2010]: University of Michigan.

Veyne, P. (1983) Titulus praelatus: offrande, solemnisation et publicité dans les ex-voto Gréco-romains. **Revue Archéologique**, 2**:** 281-300

Vezin, J. (2000) Nécrologie: Robert Marichal. **Bibliothèque de l'École des Chartes**, 160**:** 733-736

Vogt, J. (1973) Alphabet für Freie und Sklaven. **Rheinisches Museum für Philologie**, 116**:** 129-142

Von Domaszewski, A. & Dobson, B. (1967) **Die Rangordnung des Römischen Heeres.** Köln: Böhlau Verlag.

Von Premerstein, A. (1903) Die Buchführung einer aegyptischen Legionsabteilung. **Klio**, 3**:** 1-46

Vossing, K. (1998) Schreiben Lernen, ohne Lesen zu Konnen? Zur Methode des Antiken Elementarunterrichts. **ZPE**, 123**:** 121-125

Watson, G. R. (1965) 'Immunis Librarius' in Jarrett, M. G. & Dobson, B. (Eds.) **Britain and Rome: Essays Presented to Eric Birley**. Kendal: Wilson. pp. 45-55

Watson, G. R. (1969) **The Roman Soldier.** London: Thames & Hudson.

Watson, G. R. (1974) Documentation in the Roman Army **ANRW 2.1**. pp. 493-507

Welles, C. B. (1941) The Epitaph of Julius Terentius. **Harvard Theological Review** 34**:** 99–102

Welles, C. B. (1951) The Population of Roman Dura in Coleman-Norton, P. R. (Ed.) **Studies in Roman Economic and Social History in Honour of Alan Chester Johnson**. Princeton: Princeton University Press. pp. 251-274

Werner, S. (2008) Literacy Studies in Classics: The Last Twenty Years in Johnson, W. A. & Parker, H. N. (Eds.) **Ancient Literacies: The Culture of Reading in Greece and Rome**. Oxford: Oxford University Press. pp. 333-387

Wessely, C. (1898) **Schrifttafeln zur älteren lateinischen Palaeographie.** Leipzig: Avenarius.

Westerman, W. L. (1914) Vocational Training in Antiquity. **The School Review**, 22**:** 601-610

Whalley, J. (1975) **Writing Instruments and Accessories.** Newton Abbott: David & Charles.

Wharton, A. J. (1995) **Refiguring the Post Classical City: Dura Europos, Jerash, Jerusalem and Ravenna.** Cambridge: Cambridge University Press.

Wheeler, E. L. (1996) The Laxity of Syrian Legions <u>in</u> Kennedy, D. L. (Ed.) **The Roman Army in the East**. Michigan: Ann Arbor. pp. 229-276

White, K. D. (1984) **Greek and Roman Technology.** London: Thames and Hudson Ltd.

Wilcken, U. (1901) Zur Paläographie. **Archiv für Papyrusforschung**. I: 370-374

Wilcken, U. (1912) Die Schrift: Die Prinzipien der Schriftentwicklung <u>in</u> Mitteis, I. & Wilcken, U. (Eds.) **Grundzüge und Chrestomathie der Papyruskunde**. Leipzig: B.G. Teubner. xxxiii-xxxvii

Wilcken, U. (1936) Über den Nutzen der lateinischen Papyri <u>in</u> **Atti del IV Congresso Internazionale di Papirologia.** Milan: Società editrice "Vita e Pensiero". pp. 101-22.

Will, E. (1988) La population de Doura-Europos: Une évaluation. **Syria**, 65**:** 315-321

Williamson, C. (1987) Monuments of Bronze: Roman Legal Documents on Bronze Tablets. **Classical Antiquity**, 6**:** 160-183

Williamson, C. (1995) The Display of Law and Archival Practice in Rome <u>in</u> Solin, H., Salomies, O. & Liertz, U.-M. (Eds.) **Acta Colloquii Epigraphici Latini**. Helsinki: Societas Scientiarum Fennica. pp. 239-251

Williamson, C. (2004) **The Laws of the Roman People.** Ann Arbor: University of Michigan Press.

Willis, S. (2005) The Context of Writing and Written Records in Ink: the Archaeology of Samian Inkwells in Roman Britain. **Archaeological Journal**, 162**:** 96-145

Wing, A. M. (1979) The Variability of Handwritten Characters. **Visible Language**, 13**:** 283-298

Wing, A. M., Nimmo-Smith, I. & Eldridge, M. (1983) The Consistency of Cursive Letter Formation as a Function of Position in the Word. **Acta Psychologica**, 54**:** 197-204

Woodworth, R. S. (1979) Facility of Using Different Handwriting Movements. **Visible Language**, 13**:** 209-217

Woolf, G. (1996) Monumental Writing and the Expansion of Roman Society in the Early Empire. **Journal of Roman Studies**, 86**:** 22-39

Woolf, G. (2000) Literacy in Bowman, A. K., Garnsey, P. & Rathbone, D. W. (Eds.) **The Cambridge Ancient History XI[2]: The High Empire, A.D. 70-192**. Cambridge: Cambridge University Press. pp. 875-896

Woolf, G. (2002) Afterword: How the Latin West was won in Cooley, A. (Ed.) **Becoming Roman, writing latin? : literacy and epigraphy in the Roman west**. Portsmouth, R.I.: Journal of Roman Archaeology. pp. 181-188

Woolf, G. (2009) Literacy or Literacies in Rome? in Johnson, W. A. & Parker, H. N. (Eds.) **Ancient Literacies: The Culture of Reading in Greece and Rome**. Oxford: Oxford University Press. pp. 46-68

Wright, R. P. (1942) Roman Inscriptions on Leather. **The Antiquaries Journal**, 22**:** 218-219

Wunsch, R. (1909) Feder in Wissowa, G., Kroll, W. & Mittelhaus, K. (Eds.) **Paulys Real-Encyclopädie der classischen Altertumswissenschaft. Neue Bearbeitung, Vol. 6**. Stuttgart: K. Ziegler. pp. 2098-2100

Yates, J. A. (1989) **Control Through Communication: The Rise of System in American Management.** London: John Hopkins Press.

SAMOSATA

EDESSA

TARSUS

ANTIOCH

BARBALISSOS

River Orontes

River Euphrates

River Khabur

River Tigris

HATRA

DURA
EUROPOS

PALMYRA

DAMASCUS

HIT

TYRE

Sea of
Galilee

BAGHDAD
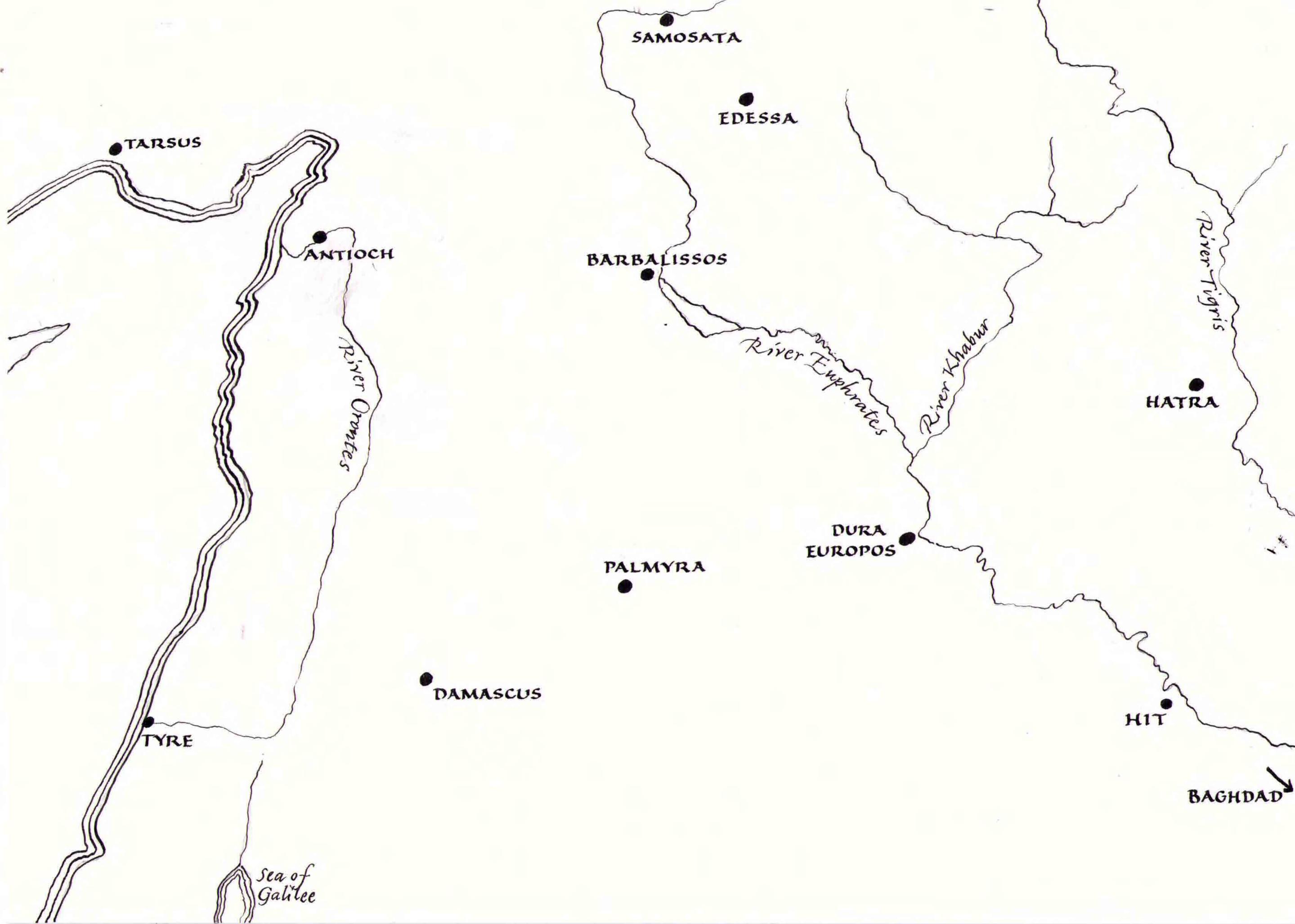
A Temple of Jupiter Dolichenus
B Baths
C Principia ('praetorium')
D T. of Artemis Azzanathkona
E T. of Bel ('Palmyrene gods')
F Mithraeum
G Amphitheatre
H Baths
I Military T.
J T. of Zeus Theos

K Baths
L T. of Zeus Megistos
M House of Lysias
N H. of the Large Atrium
O T. of Atargatis
P T. of Artemis Nanaia
Q T. of the Gaddé
R H. of the Frescoes
S H. of Nebuchelus
T T. of Adonis
U Synagogue
V H. of the Roman Scribes
W Baths
X Christian Building
Y T. of Zeus Kyrios
Z T. of Aphlad

Palace of the dux ripae

NORTH WALL

Citadel

Citadel Palace

Roman military base

Approximate position of River Gate

Southern boundary of Roman Camp

Agora

Redoubt (strategeion)

Wall Street

Tower 19

Palmyrene Gate

Tower 14

Siege ramp

Tower 15

Wall Street
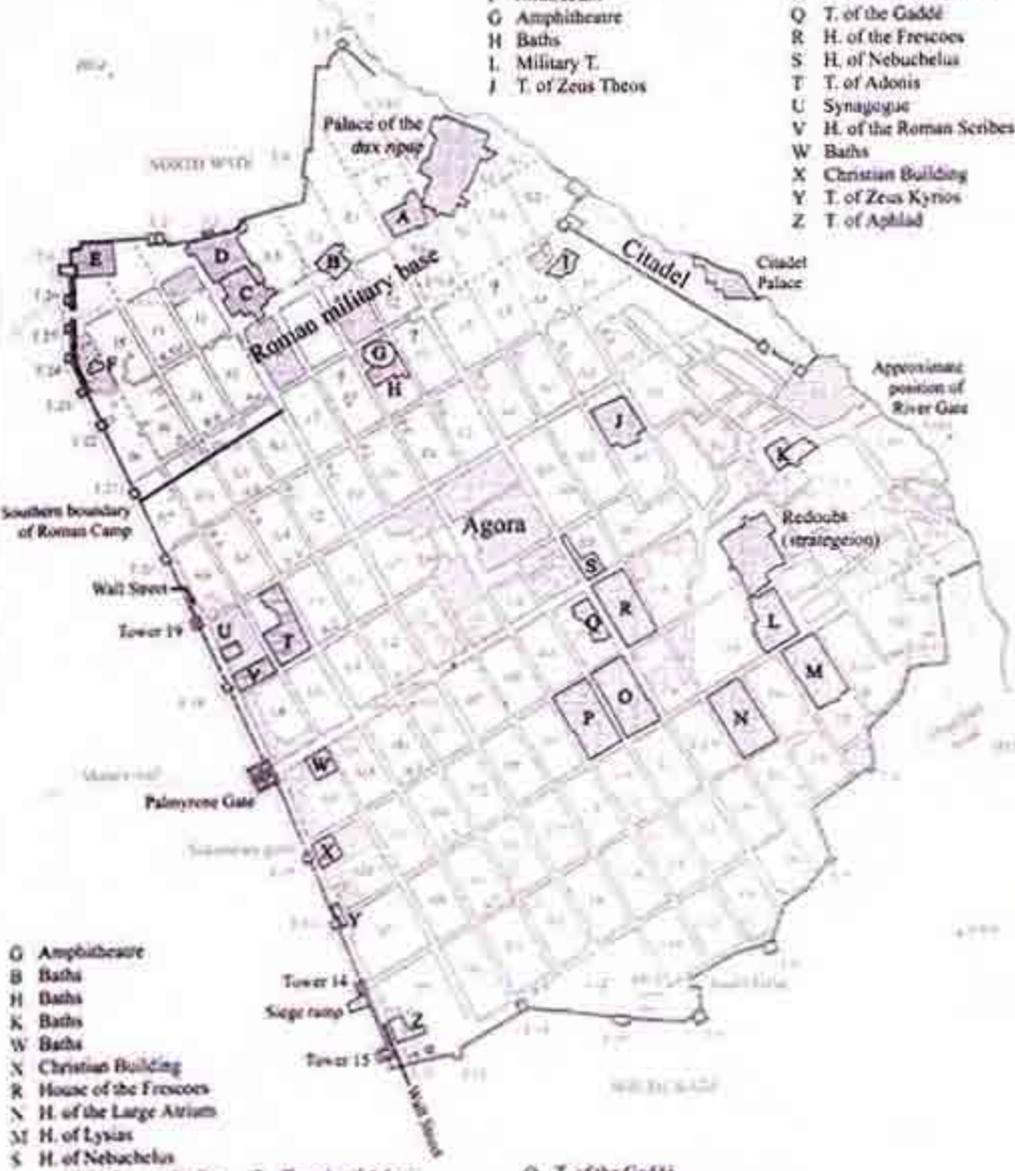
G Amphitheatre
B Baths
H Baths
K Baths
W Baths
X Christian Building
R House of the Frescoes
N H. of the Large Atrium
M H. of Lysias
S H. of Nebuchelus
V H. of the Roman Scribes
I Military Temple
F Mithraeum
C Principia ('praetorium')
U Synagogue

T Temple of Adonis
Z T. of Aphlad
D T. of Artemis Azzanathkona
O T. of Atargatis
E T. of Bel ('Palmyrene gods')

Q T. of the Gaddé
A T. of Jupiter Dolichenus
Y T. of Zeus Kyrios
L T. of Zeus Megistos
J T. of Zeus Theos
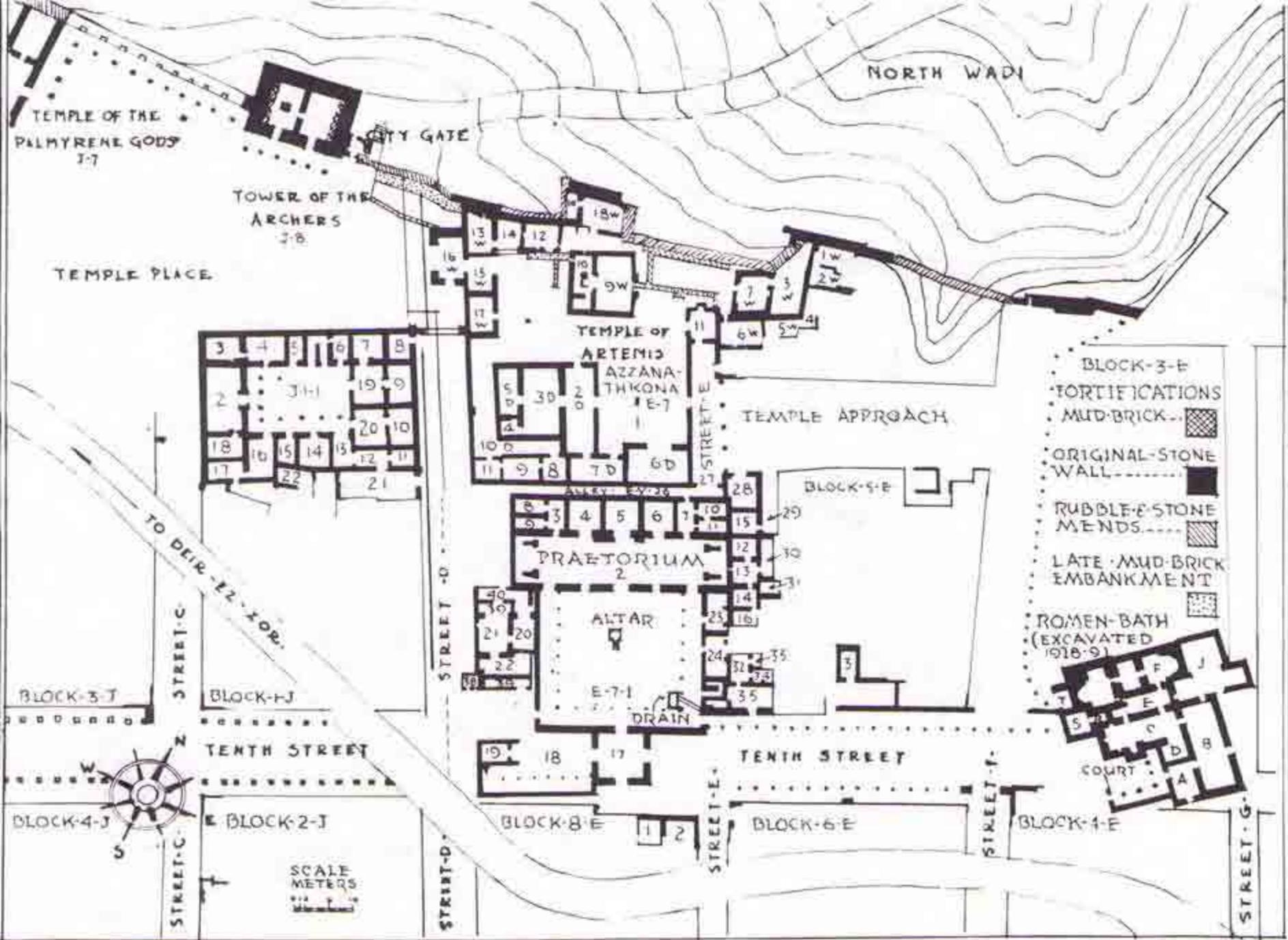
PLAN OF THE PRAETORIUM AND THE TEMPLE OF AZZANATHKONA (DRAWN BY H. PEARSON)
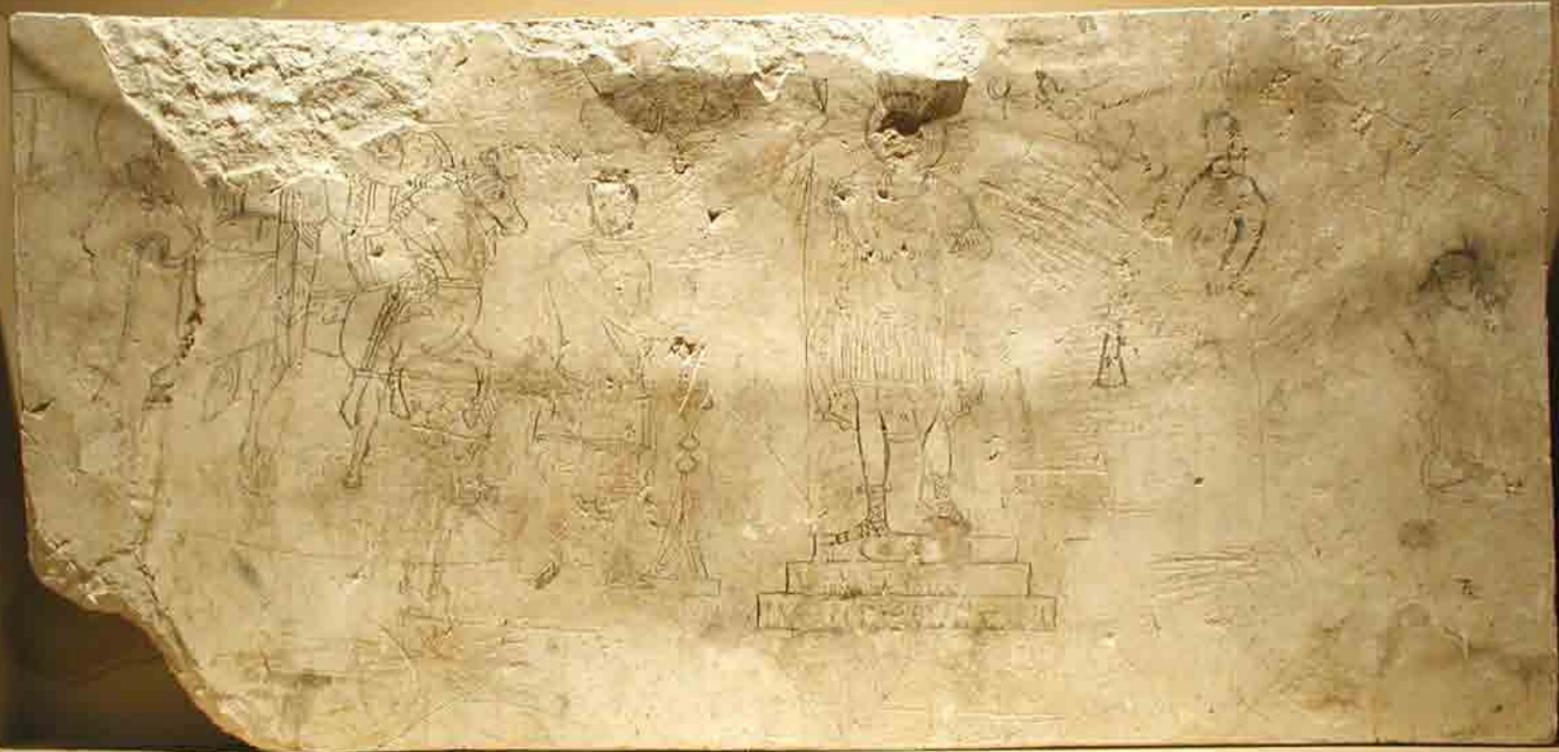
1932.1208

Southern End - Bird's Eye View
of Desk and Doorway
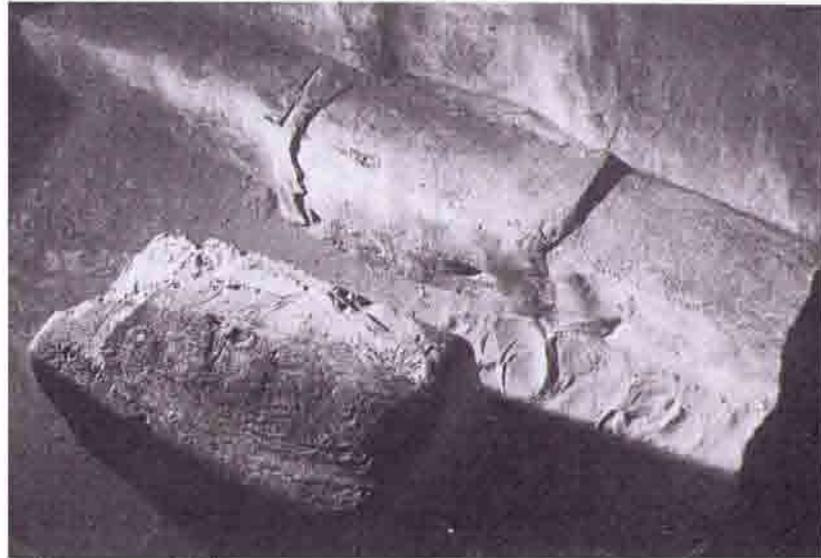
Eastern Side

The Southern End
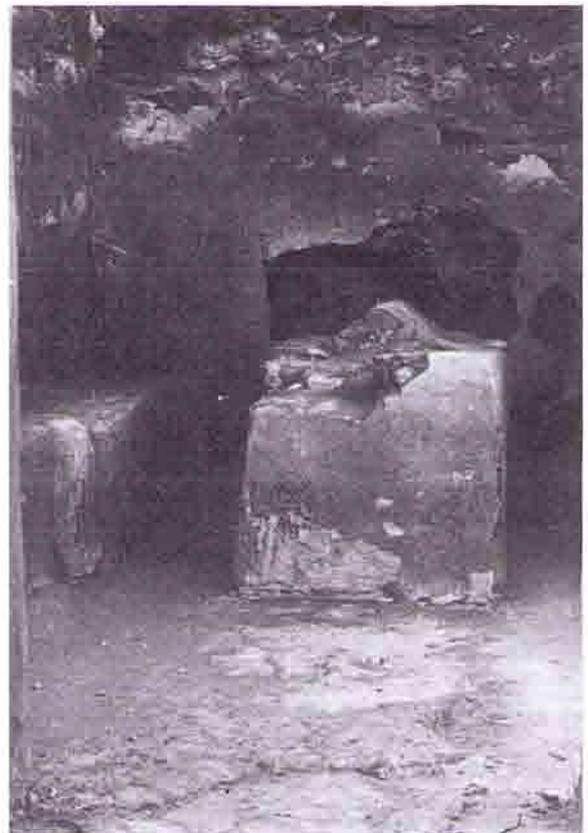
Southern End: View from the Door

THE MILITARY CLERICAL HAND
A SELECTION OF PAPYRI

P.Berlin 6870r - Pridianum 156 CE

P.Mich 2761r - Military Unit Report
First half third century CE
Apis record: Michigan.apis.1625
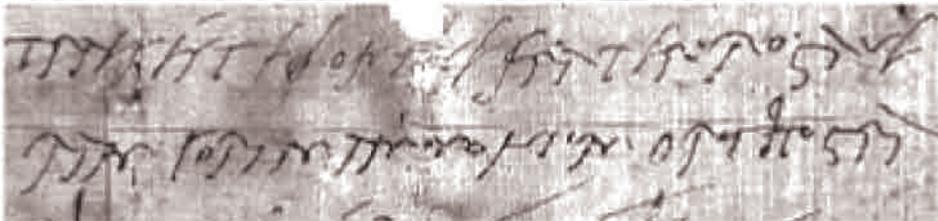
P. Hibeh 276r - Letter of Recommendation
Late Second/Early Third Century CE
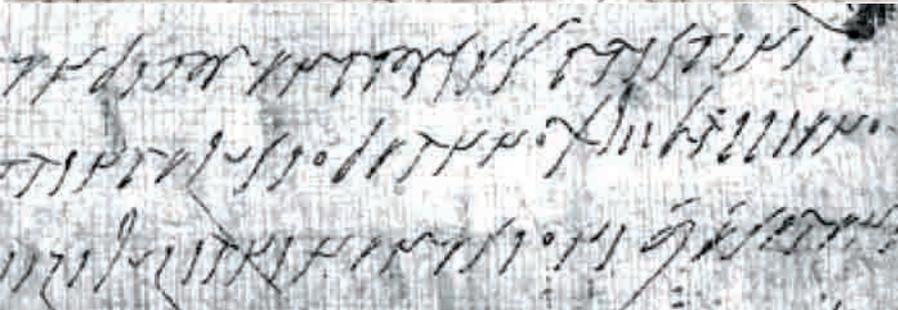
P.Oxy. XLI, 2951 - Sale of a Slave, 26 May 267 CE.
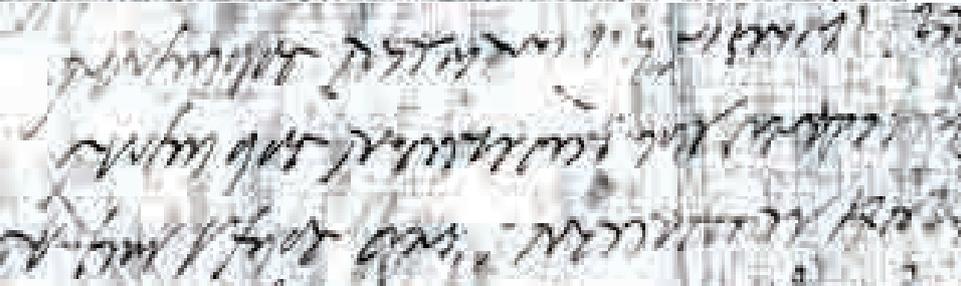
P. Dura 82 - Morning Report, ca. 238 CE
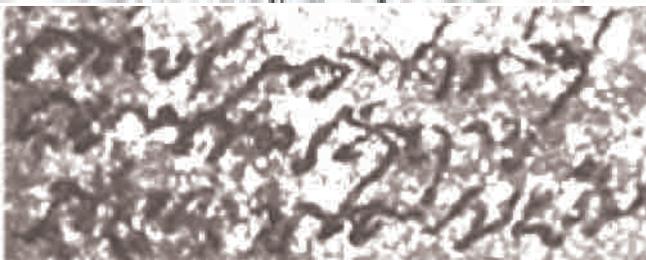
O.Bu Njem 26 Morning Report c.255 CE

P.Oslo 656r - List of Soldiers
238 - 242 CE Apis record: Oslo.apis.20

ILLO CIVITATE DONATOS E
C AVGVSTO GERMANICO IMP
NO TAVRO STATILIO CORC
ISCHITE METROPOL HECCCC
NE ET STRATONE STATFIC
FINES ISCHYRANTHION
MEN SELEVCIL
A ITEM OXYRINCHITE METROPOL
MVNERATIBI CVM DIS PAPOLLODTIO ET HATRION
HATRION RIONE CROIARTE III INFERD FINE
CONI ALLONE ET CESSANCTESATIS

DILECCA HONO SEXXVITE HF CCC
TOTO E] COMMA EM SILI CVM HATIONI
IN CTONE SERSELCIF ET SVPR FAODRPT IIII
F IL DISTATS ISCHYRAN CHTONE IT
FL MVN STERRT III

	A	B	C	D	E	I	L	M	N	P	Q	R	S	T	U

P. DURA 54(ii)

| Col ii, Line 2. | Col ii, Line 7. | Col ii, Line 9. | Col ii, Line 7. | Col ii, Line 3. | Col ii, Line 4. | Col ii, Line 1. | Col ii, Line 3. | Col ii, Line 5. | Col ii, Line 3. | Col ii, Line 1. | Col ii, Line 3. | Col ii, Line 3. | Col ii, Line 15. | Col ii, Line 6. |

P. DURA 98(a)

(l)A(e) Col ii, Line 4. | B(o) Col ii, Line 2. | C Col iii, Line 7 | (b)D(i) Col ii, Line 2. | E Col iii, Line 6. | (d)I Col ii, Line 2. | (e)L Col i, Line 6. | M(a) Col i, Line 1. | (i)N(u) Col ii, Line 6. | (a)P Col ii, Line 3. | Q Col ii, Line 3. | (e)R(u) Col iv, Line 20. | (i)S(a) Col iii, Line 4. | T Col iv, Line 16 | U(m) Col i, Line 5.

(e)B Col iii, Line 8.

E(s) Col iii, Line 11. | (v)I Col iv, Line 16.

(u)S Col iv, Line 8. | (c)T(o) Col iv, Line 16

B(o) Col iii, Line 11.

E(l) Col iii, Line 8.

P. DURA 125

A Line 10. | B Line 12. | C(o) Line 9. | D(i) Line 11. | E(n) Line 12. | I Line 10. | L Line 11. | M Line 10. | N Line 9. | P Line 12. | Q Line 9. | R Line 12. | S Line 10. | T(i) Line 9 | U(m) Line 10 | Y Line 12

(l)A(r) Line 11. | (e)C(u) Line 11. | E Line 13. | L Line 12. | S Line 14

(t)A(s) Line 14.

PERSONAL HANDS - WITNESS SIGNATURES

P. DURA 26 - DEED OF SALE (227 CE)

Hand 5
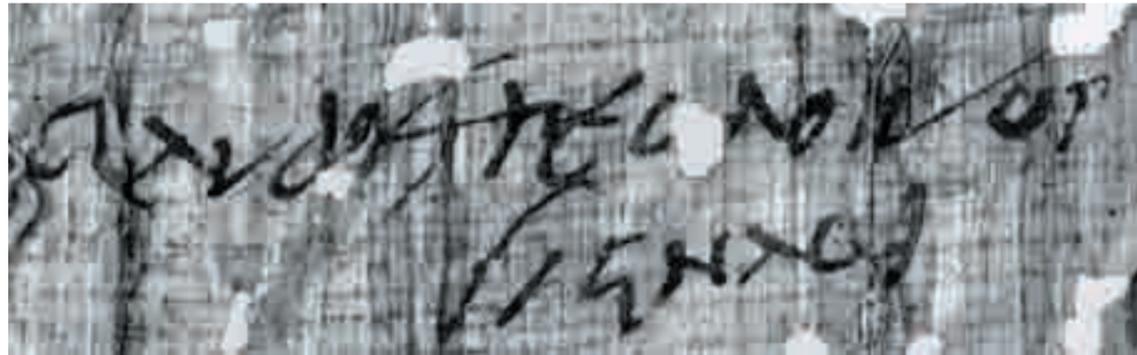
Some individual letters

C

D

E

L

U

G

N

UI

Hand 6

MO

NI

Hand 7

SIGNAVI

P. DURA 30 - MARRIAGE CONTRACT (232 CE)

EZ

OP

P. DURA 125 - SUBSCRIPTION OF LARONIUS
SECUNDIANUS TRIBUNE (235 CE)
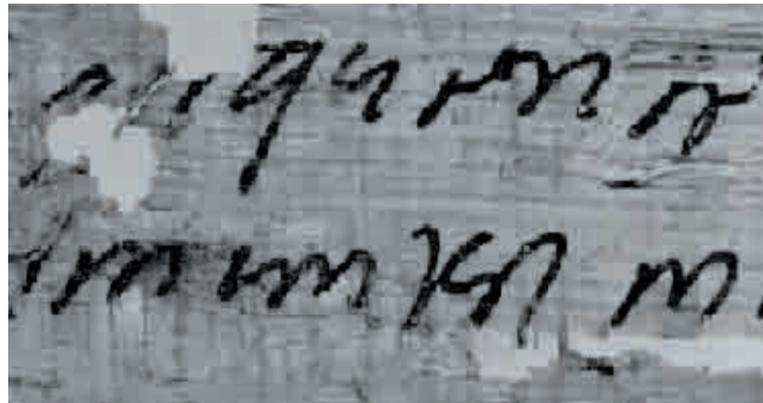
A
Line 10.

(t)A(s)
Line 14.

C(o)
Line 9.

D(i)
Line 11.

E(n)
Line 12.

I
Line 10.

M
Line 10.

P
Line 12.

R
Line 12.

S
Line 10.

T(i)
Line 9

Y
Line 12

L
Line 11.

U(m)
Line 10

(l)A(r)
Line 11.

B
Line 12.

(e)C(u)
Line 11.

E
Line 13.

L
Line 12.

N
Line 9.

Q
Line 9.

S
Line 14

DURA PAPYRI IN
THE CLERICAL HAND:
A SELECTION

P DURA 98 Fragment a
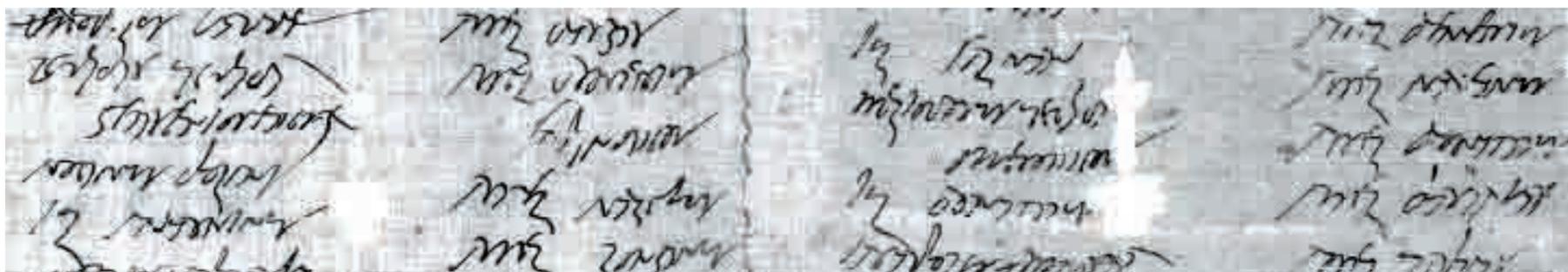
P DURA 82
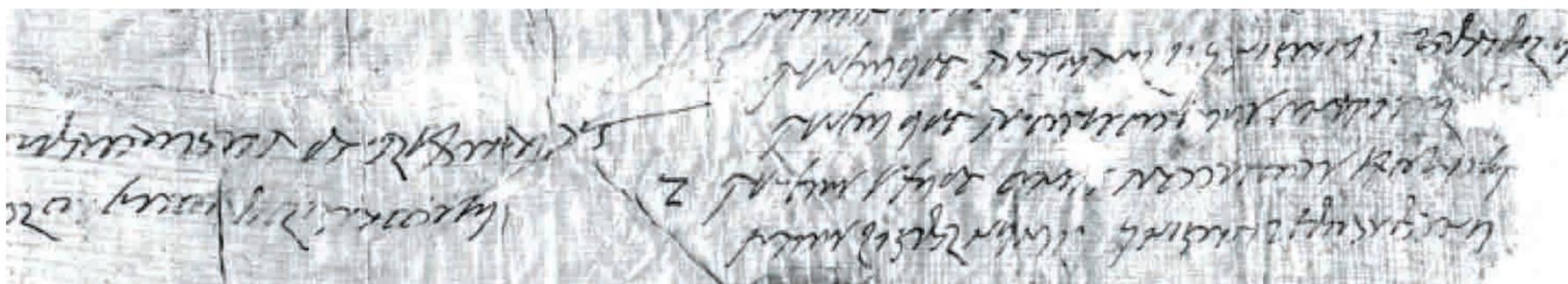
P DURA 83 -Two details
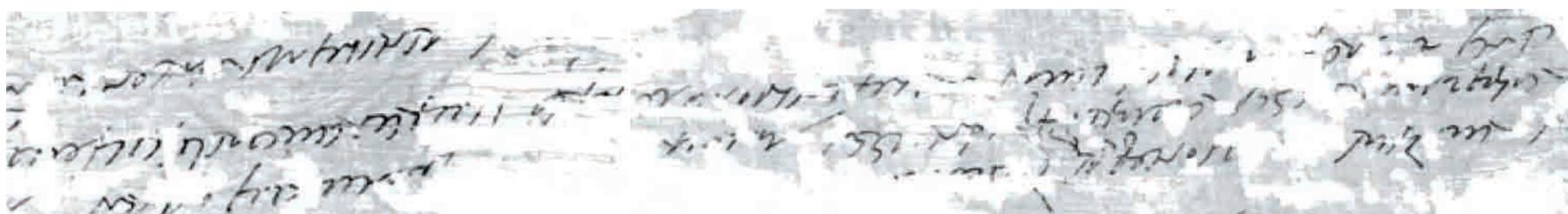
P DURA 89 -Hand 1

P DURA 95
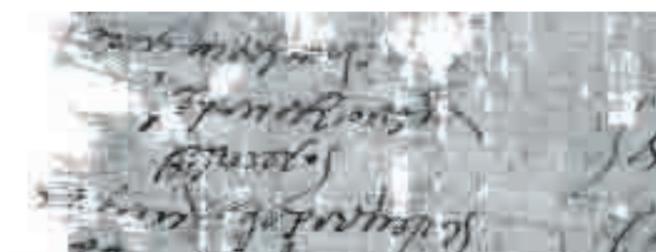
P DURA 97
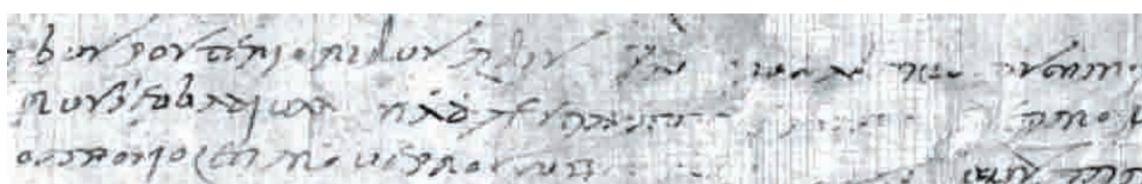
P DURA 115
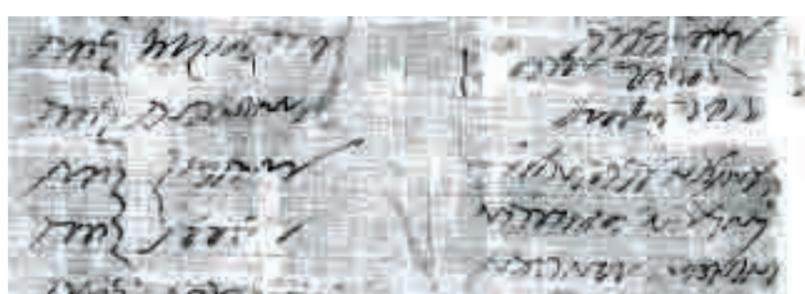
P DURA 105 Fragment b.
Two details

P DURA 107

Illustrations not to scale.
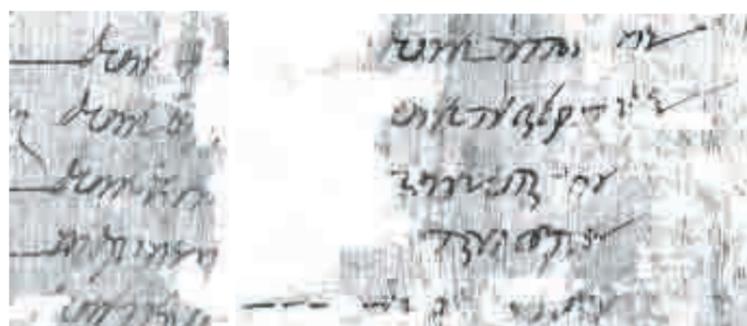
STROKE RESEMBLANCES IN THE LETTERS OF THE CLERICAL HAND
Examples taken from P. Dura 98

1. Downward left diagonal.
   This stroke varies in length but commonly descends below the baseline of writing. It may have a more or less pro-
   nounced left hook at base. It does not join with a following stroke (although sometimes does so in M and N). It occurs
   notably in the letters A, F, I, M, N, one form of P, Q, R, S, one form of T, X and the dowstroke of B.
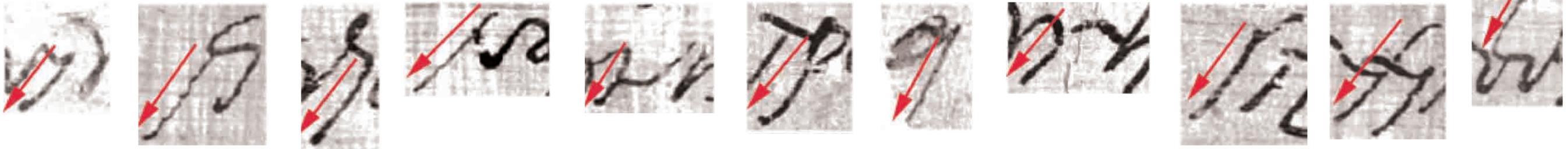
2. Possibly often a development of 1. above, this stroke occurs at the base of a downward left diagonal stroke in which, instead of the terminal ending, the
   writer forms an anti-clockwise loop, more or less tight, so as to move into a following upstroke which may lead into an arch. It occurs notably in some forms
   of E, one form of H, M, N, P, R and S. It also occurs commonly with the letter C in the abbreviation 'cos'.

3. The cursive form of O is an accentua-
   tion and rounding of the same clockwise
   movement.

4. An alternative possibility which some-
   times occurs, particularly on E, is to re-
   place the loop with a flicked or sidled pen
   upwards in a right diagonal direction.

5. B has a small (more or less) rounded bowl. This shape, or something very like it, is also used in D and U.
   Its orientation altered towards the horizontal axis, it forms the bowl of E, F and the loop on Z.

6. A smaller curve at the base of the left-
   side of the bowl makes the base of the
   letters C, T and some forms of E.
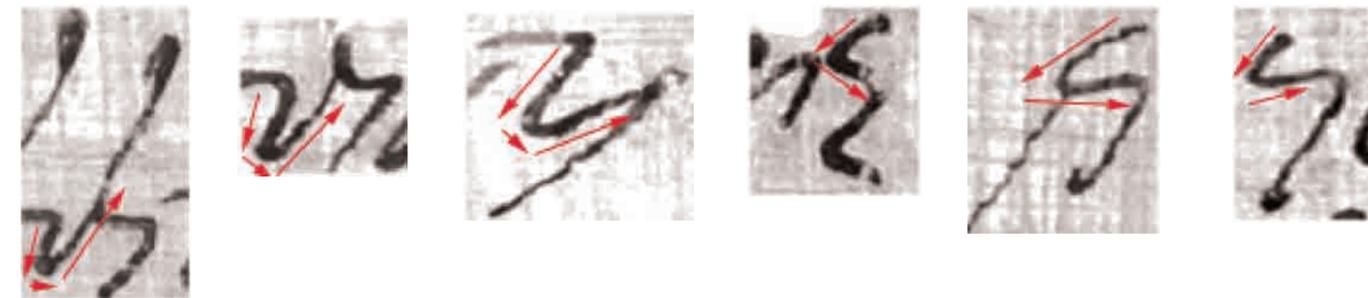
7. G and L share a descending tail
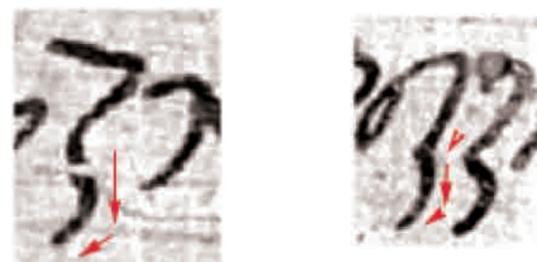
8. A short stroke slanted more or less off the horizontal axis
   forms the top stroke of C (and G) and the joining stroke
   for most other letters (see text 10.3).
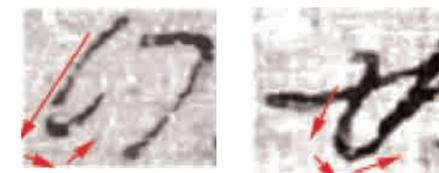
9. The right-hand stroke of the bowl of P in one
   form is complementary to the stroke in 6. This
   also forms half of O in less fluent writers.

...N ERVA[...]
[...]SQVE DIS IN MON[...]
[...]VS PR SALVTEM ET VI[...]
TORI DN IMP L SEP SEVE[...]
INVCT[...]
[...]ERVAE SANCTE SACRVM FETI[...]
[...]VS MODCIVI ACTVAR N PER[...]
[...]NE MVNTR P COTINVT[...]
[...]NTI LIBENS[...]
[...]VIT[...]