METRICAL NOTES ON VEGETIUS' *EPITOMA REI MILITARIS*

I. INTRODUCTION

Vegetius wrote quantitative-accentual clausulae, the system (generally called *cursus mixtus*) usual in Late Latin prose.[1] In this the most frequent Ciceronian clausulae (cretic trochee, double trochee, and double cretic) make up the majority of sentence endings; but these clausulae simultaneously show the favoured accentual forms of medieval *cursus*, a system of sequences of accented and unaccented syllables, the *cursus planus* (′x.x′x, for example *praecepta subnectit*), *tardus* (′x.x′xx, for example *possit exercitus*) and *velox* (′xx.xx′x, for example *exercitiis imbuendi*).[2] The name *cursus mixtus* is slightly misleading. Quantitative-accentual clausulae are found far earlier (in Minucius Felix, Cyprian, and Cyprian's contemporaries) than the earliest purely accentual clausulae (Ammianus Marcellinus is regarded as the first example); and purely accentual clausulae are rarer than quantitative-accentual clausulae from the third to the sixth century. It is generally thought that the *cursus* grew out of the *cursus mixtus*, which, initially at least, was not striving towards the accent sequences of its descendant, but placing the accent at favoured positions within the feet that made up the quantitative clausulae (this is mostly described as seeking a coincidence of ictus and accent).[3] There is still some tendency to speak of the *cursus mixtus* as though it were an attempt to write both systems at once; at some point it may have become so. We shall see how far this is true for Vegetius.

The fact that quantitative-accentual clausulae conform (for whatever reason) to two systems has a fortunate 'belt and braces' effect on textual criticism; even critics who are blind to one or other aspect of the clausulae still more often than not make the right decision.[4] A less welcome effect is that believers in this or that system may be confirmed in their partial understanding, as the clausulae they look at all fit their expectations. But the sufficiency of one or other viewpoint to account for those phenomena that one is prepared to notice should not be a reason to ignore regularities in

[1] L. Laurand, 'Le "cursus" dans Végèce', *Musée Belge* 28 (1924), 99–101 briefly discusses the clausulae of the *Epitoma rei militaris* as examples of *cursus* rhythms; A. Önnerfors, 'Zu Person und Werk des Publius Flavius Vegetius Renatus', in *Vetenskapssocietetens i Lund årsbok 1991* (Lund, 1993), 142–73, at 158–61 discusses them from a largely quantitative viewpoint.

[2] Here as elsewhere in the article, I use the same symbols as J. G. F. Powell, 'Prose rhythm, Latin', 1261–2 in *OCD*[3]: accented syllables irrespective of quantity (′), unaccented syllables (x), word divisions (.). Modern discussions of the *cursus mixtus* have generally found it convenient to ignore the question of word division, so that e. g. both ′x.x′x and ′xx.′x are often described as *cursus planus*. It should be noted that the word divisions indicated in this article are 'metrical word' divisions; for metrical words and their accentuation, see Section IIA.

[3] The view is incidentally strengthened by S. Oberhelman, 'The history and development of the *cursus mixtus* in Latin literature', *CQ* 38 (1988), 228–42, in part a correction of previous investigations (cited there p. 228, n. 1).

[4] Widespread recognition of the importance of prose rhythm came earlier in the study of late Latin texts than in that of classical texts. Of course not everyone was able to use this knowledge. Paul Maas, in a 1906 review of the *Codex Theodosianus,* reprinted in *Kleine Schriften* (Munich, 1973), 618, n. 17, cites a letter of Mommsen's from 1903: 'Ich muß in dieser Hinsicht mein Unvermögen bekennen, das meine wie alle übrigen Ausgaben dieser Schriftsteller wesentlich beeinträchtigt; habe dies auch bei dem Cassiodor und dem Eugippius empfunden. Aber ich sehe wohl den Mangel, kann ihm aber nicht abhelfen.'

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other kinds of phenomena that also need explanation; and the regularities of late Latin prose can be striking. A good way to appreciate the strictness of such prose is to look at the clausulae in the way that Havet did in his study of Symmachus (see n. 14). Havet looked at the two final metrical words of a sentence as two elements that fitted together, so that the metrical form of one word demanded that of the other, like two molecules or, if you prefer, like two jigsaw puzzle pieces. This style of analysis had a few followers in France, but was never generally accepted. It does not work well for Cicero, whose clausulae often include more than two words; and the same problem occurs (more rarely) with the earliest quantitative-accentual prose. It did work well for Symmachus, though; indeed no method shows more respect for the phenomena to be found there. Turning to Vegetius, the more frequent clausulae can be found in the table in Section IIIA below (although his prose is so regular that readers can easily work out the rules for themselves simply by looking through a few pages). It will be clear that, working backwards at least, the metrical form of the final word does imply that of its neighbour. If the final metrical word is a molossus, then the previous word is almost certain to end in a trochee or resolved trochee (in about 94 per cent of cases—the exceptions, some the result of editorial decisions, are discussed in Section IIIB). In the prologue of Book 3, for instance, we find *loquuntur annales*, *cura bellorum*, *esse non possunt*, *deesset in parvis*, *omne confecit*, *esse si pugnet*. Of course we expect a trochee in Cicero too, and it is also the most likely form in purely accentual prose, but hardly with this degree of predictability.[5] To take another example, if the final metrical word is an iamb, then the previous word is very likely to be a cretic (in about 81 per cent of the cases), for example 3.1.1 *classicum sonat*. There is a strong contrast with Cicero here, for whom a final iambic word tends to combine with the preceding word to form a double cretic, for example *Off.* 1.2 *existimari velim*, 1.3 *orationis genus*, *disputandi genus*, 1.4 *auctoritati meae*; for Vegetius, whose double cretics have strict rules of word division, this form is not legitimate. Similar predictability can be found in all aspects of Vegetius' clausulae (literary historians have called them 'pedantic'). The reasons for these regularities are not always apparent; but a detailed investigation may at least show what there is that needs explaining.

The material discussed below comes from clausulae in Vegetius' *Epitoma rei militaris* (a text of the late fourth or early fifth century); it includes every instance before punctuation higher than a comma, except chapter titles and clausulae which include numbers.[6] Internal clausulae seem to follow the same rules; but although the favoured metrical forms are found at a very low syntactical level (see Section VA

[5] For an accentual text in which considerations of quantity have no predictive value, compare the sermons recently edited by F. Leroy in *RecAug* 31 (1991), 149–234, attributed to a Donatist author on the grounds of an attack on *traditores*. In a sample of 465 sentence endings I found almost exclusively the three standard *cursus* forms (ignoring word division: *planus* 40 per cent, *tardus* 20.5 per cent, *velox* 32 per cent, remainder 7.5 per cent). Although standard metrical forms were common (cretic trochee 34 per cent, double cretic 4.5 per cent, double trochee 15.5 per cent, remainder 45 per cent), a final molossus word was preceded by a trochee in only 85 of the 128 instances (66.5 per cent).

[6] Both of these generally follow the same rules; but the demands of the material cause a far higher proportion of non-metrical closes. Doubtless clausulae should be considered by an editor in the chapter headings too (at 2.20 *sequestrare servandum ipsis*, the metrically unwelcome *ipsis* is missing in one branch of the tradition in the index of chapters, in two branches in the chapter heading within the text); but other questions may need settling first. On the general problem of the chapter headings, see B.-J. Schröder, *Titel und Text* (Berlin and New York, 1999), 144–5; M. D. Reeve, 'The transmission of Vegetius's *Epitoma rei militaris*', *Aevum* 74 (2000), 243–354 at 276–7.

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below), they are often missing at points where a modern editor would punctuate. Since it is difficult to judge objectively here, it is better to stay with identifiable sentence endings; the 1265 clausulae that the material provides are sufficient for most questions. It is now generally accepted that the author of the *Epitoma* is also the author of a *Mulomedicina*, which puts into more elegant Latin material from the *Ars veterinaria* of Pelagonius and the *Mulomedicina Chironis*. In general the clausulae of this work are very similar; but there are many sentence endings which reflect more the prescription style of the originals than the polish of the *Epitoma*. Mostly one finds that anything that Vegetius avoids in the *Epitoma* is avoided less strictly in the *Mulomedicina*. For this reason I cite examples of usage in the *Mulomedicina* only as supplementary evidence.[7] The edition used is that of Önnerfors;[8] and the figures given are for his text, not for the text that I think he should have chosen. Önnerfors's view of the tradition is criticised by Reeve:[9] Önnerfors sees the stemma as bipartite, with the subgroups ϵ and π on one side, β (essentially one manuscript, *T*) on the other; Reeve thinks the stemma more probably tripartite, with three families ϵ, δ (a part of Önnerfors's π, whose other manuscripts he regards as contaminated), and β (*T*, to which he adds a further manuscript, *Z*) for the text up to 4.39.1, at which point δ breaks off and is replaced for the remaining chapters by a fourth family ϕ, which descends from a member of δ (*R*) up to 4.39.1, and then makes use of a different manuscript, which is independent of both ϵ and β, to supply the missing ending.[10]

II. PROSODY

A. Metrical words

Monosyllabic words within the clausula (in the *Epitoma*) are always long;[11] they attach as enclitics (parts of *esse*)[12] or proclitics (prepositions, conjunctions, *non*, *vix*, *quam*, etc.) to one of their neighbours to form a 'metrical word'. But there are limitations that apply here. Since *est* and *sunt*, unlike a true enclitic such as *-que*, do not affect the accentuation of the word to which they are attached, they are only used to form the end of 'metrical words' such as 1.8.11 *constitutionibus cauta sunt* or 1.12.2 *adacta mortalis est* (where accentuation is unaffected). There are two exceptions: 1.8.4 *repudiandi . . . minus utiles et . . . strenuissimi subrogandi sunt*, where deletion of *sunt* gives the standard double trochee pattern (see Section III below); 3.3.1 *saevior fames est* (also suspect on account of its third trochee) where the variant *famis* gives a resolved cretic trochee (see *TLL* VI 1, 228, 44–61). The placing of a monosyllable at

[7] The clausulae of the two works are compared by Önnerfors (n. 1), 158–61.

[8] A. Önnerfors (ed.), *Vegetius, Epitoma rei militaris* (Stuttgart and Leipzig, 1995). Other late Latin texts cited in the article, if unfamiliar, may be found be consulting the index to the *TLL*.

[9] M. D. Reeve, 'Editorial opportunities and obligations' (review of Önnerfors), *RFIC* 123 (1995), 479–99; id., 'Notes on Vegetius', *PCPhS* 44 (1998), 182–218; id. (n. 6).

[10] Arguments in Reeve (n. 9, 1995), summary in Reeve (n. 9, 1998), 183. Details of ϕ are given in Reeve (n. 6), 304–13, 345–6.

[11] The only exceptions I have noticed are the series of Latin glosses of wind names in 4.38, e.g. 4.38.9 *notus, id est auster*; none of these glosses gives a preferred clausula and they are also accentually unusual (see Section IVA).

[12] Vegetius very occasionally inverts the normal word order where this gives a favoured clausula (e.g. 1.23.2 *partem . . ., ad quam est profecturus exercitus*); but he seems to have no clausulae like Ps. Rufin. *Ios. bell. Iud.* 1.30 p. 595 *capitula sunt digesta*, and few like *Mil.* 4.10.5 *in obsidione sunt usi*. Is there some non-metrical reason why Vegetius wrote *murus est ordinandus* at 4.4.2, rather than *ordinandus est murus*?

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the beginning of a cretic word is also rare, but less so. In the three favoured clausulae, there are eight instances;[13] presumably the proclitic words were felt to retain some accent.[14]

Monosyllables that do not behave as enclitics or proclitics are not found in the clausulae of the *Epitoma*; some authors are less restrictive.[15] Vegetius seems to use pyrrhic proclitics such as *sine* only very rarely in clausulae: 3.9.8 *saepius sine ferro*; 3.20.22 *porrige quasi veru*; 3.26.17 *vincitur sine ferro*. Words of more than two *morae* do not attach themselves to their neighbours, but function as independent words with their own accentuation; *atque* (discussed in Section VA below) and *esse* give the most instances of a subordinate word retaining its own accentuation.[16] Here too other authors sometimes allowed such words to form part of a larger metrical word.[17] Such differences in the idea of what constitutes a metrical word are liable to cause confusion in the comparison of the accentual patterns of different authors.

Having established the character of metrical words in Vegetius, we can see two patterns in his usage: the final metrical word is almost always of two, three, or four syllables; favoured clausulae are almost always made up of two metrical words (not one or three), an aspect that brings the system close to accentual *cursus*.

B. Avoidance of vowel contact and other phenomena of prosodic embarrassment

Within the metrical close of a sentence (the last two metrical feet), hiatus[18] and elision are both avoided, except that at the end of a sentence prodelision of *est* is not unusual; other exceptions are discussed below. This restriction surely reflects prosodic uncertainty, as perhaps do two other restrictions that may be suspected: a short, open final vowel in the penultimate word does not precede a final word beginning with a consonant combination that includes *s*, although it can appear before *muta cum liquida* consonant combinations (where it remains short);[19] the genitive of fifth-

[13] None is in the final foot of the clausula; but since penultimate cretic words are about ten times as frequent as final cretic words, this need not be significant. Cases where a cretic metrical word is part of a clausula other than the three most favoured are discussed below (see Section IVA).

[14] The more readily accented *non* accounts for six instances (cf. Reeve [n. 9, 1998], 195–6, where internal clausulae are also given): 1.4.9, 1.9.4, 1.20.6, 1.20.25, 3.5.11, 3.19.7. The other two are 2.17.2 *post eos stabant* and 3.22.10 *et minor cura est*. L. Havet, *La prose métrique de Symmaque* (Paris, 1892), 36, gives examples for Symmachus (again with more readily accented words such as *non, par* and *ius*).

[15] Hist. Aug. *Hadr.* 8.5 *saepe ius dixit*; Ennod. *Dict.* 2.6 p. 432, 11 *splendore nox fugerit*; *Opusc.* 1, 32 p. 270, 15 *gessero, gens triumphat*; 1.87 p. 285, 12 *ingenia lex coercet*. Some examples might be claimed in Vegetius' internal clausulae, e.g. 3.18.7 *esse dux debet*.

[16] For this reason the word order of *esse* with participles (unlike *est* and *sunt*) is frequently inverted for the sake of the clausula, as at 1.7.4 *esse laudatum*.

[17] H. Hagendahl, *La prose métrique d'Arnobe* (Göteborg, 1937), 198–201 shows that Arnobius used *atque* both subordinately within the double trochee, e.g. *tristissimis atque laetis*, and independently within the cretic trochee or double cretic, e.g. *atque vinetis*.

[18] In the following discussion, I use the term hiatus only for vowel contact where elision does not take place.

[19] In poetry, cf. e.g. M. Platnauer, *Latin Elegiac Verse* (Cambridge, 1951), 62–3; in Ciceronian prose *s impura* 'makes position' according to T. Zielinski, *Das Clauselgesetz in Ciceros Reden* (Leipzig, 1904), 174–5, although R. G. M. Nisbet, 'Cola and clausulae in Cicero's speeches', in E. M. Craik (ed.), *Owls to Athens: Essays on Classical Subjects Presented to Sir Kenneth Dover* (Oxford, 1990), 359 (= *Collected Papers* [Oxford, 1995], 324) suggests that this needs further investigation.

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declension nouns such as *res* does not occur in clausulae.[20] Phenomena of 'prosodic embarrassment' might well repay more study in the whole of Latin prose.

To return to the question of vowel contact, in the accentual 'run up' that precedes some metrical clausulae, there are (oddly) fewer anomalies, if one assumes that hiatus is the rule:

′xx.⏑⏑-x	2.5.3 *diligenda est et colenda*; 2.6.5 *acie ordinatur*
	3.3.9 *vitanda est difficultas*; 3.13.1 *dimicandum est, possidere*[21]
′xx.⏑⏑⏑-x	2.2.2 *milia armatorum*; 3.5.6 *directa est appellatur*
	2.14.7 *tergere et curare*[22]

On the other side elision would give a more usual accentual sequence only at 2.1.7 *in auxilia et legiones*; but either way this instance is unusual (′x.-⏑⏑⏑-x instead of ′xx.⏑⏑⏑-x), especially when a good clausula was available in *atque legiones*.

There are nine exceptions to the rule that vowel contact (except with *est*) is avoided in the last two feet. Only three of these could give a preferred clausula: with elision 3.15.2 (= 3.26.8) *militem exspargere*, where the variant *spargere* should be preferred;[23] with hiatus 3.20.19 *dextrum adgreditur*. This and the remaining six might be corrupt, although there are no other evident grounds for suspicion against them.[24] The moral for editors is that variants involving vowel contact (other than final prodelided *est* or hiatus in the accentual run up) should be avoided unless there are compelling reasons to prefer them[25] (and obviously conjectures that introduce vowel contact are not permissible). If Vegetius let his attention wander enough to allow vowel contact, would it be with hiatus or elision? Hiatus, probably, since the 'accentual run up' surely corresponds better to spoken usage than the quantitative part of the clausula. If so, *dextrum adgreditur* may be retained. So may internal clausulae;[26] but here one should also consider the likelihood that no clausula is intended.

To give some context to these remarks, while in classical clausulae elision is the usual practice, in the quantitative-accentual system it is very rare,[27] except for prodelision of final *est*, which seems to be universal (classical poetry similarly allows elision with *est* in positions where other forms of elision would be forbidden). Avoidance of vowel contact (with more or less infrequent hiatus) can be found in many texts. In the first two books of letters of Ennodius (in Hartel's edition) there are six instances of vowel

[20] In poetry, cf. e.g. B. Axelson, *Unpoetische Wörter* (Lund, 1945), 21–2.

[21] An instance from within the sentence may be cited for its word order, 3.3.6 *quicquid . . . poterit occupare . . . ad tutissimas conferendum est civitates*.

[22] If Vegetius wrote *tergĕre*, the clausula is good with hiatus; *tergēre* would only be acceptable with the variant *tergere curare* (cretic trochee).

[23] Reeve (n. 9, 1998), 203.

[24] The examples are: 3.2.1 *medicina exercitio* (which could be transposed, but as part of a list may be simply unmetrical); 3.4.6 *optare quam otium* (*pacem*?); 3.9.12 *quae ignavae sint*; 3.22.5 *et statim inruant* (*inruatur*?); 3.24.4 *quarto infestum est*, which could be made into a cretic trochee by accepting correption of long vowels in hiatus, cf. Hagendahl (n. 17), 98–9 (in Vegetius this would only be possible if such hiatus with correption corresponded to the normal usage of the language, so that he could write it without actively seeking it); 4.46.4 *pro vice arietis vi impellunt* (delete *vi*, which is also unusual as a monosyllabic noun within the clausula?).

[25] A doubtful instance at 3.14.4 is discussed below (Section IVA).

[26] Some are given by Reeve (n. 9, 1998), 204, along with three examples of possible elision.

[27] The usage of third-century writers is not clear to me; and it may be that some of these regularly elided (Gargilius Martialis sometimes gives this impression, e.g. *Med.* 24 *animalia interficit*, 30 *consuetudine inmutat*, *animalia extinguit*). Otherwise Sidonius Apollinaris is the only writer I have noticed who seems to make frequent use of elision.

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contact in 606 sentence endings, four giving a clausula with hiatus, two unmetrical either way.[28] In Firm. *Math.* 1, the only instance of vowel contact I could find (in 340 sentence closes) was 1.7.35 *divinitate impugnatur*, where the Budé editor Monat had preferred a different variant to that chosen by Kroll and Skutsch, *divinitatis impugnat*; in Firm. *Err.* I found three instances in 656 clausulae.[29] Symmachus' usage is discussed by Havet, who is in principle in favour of elision; but his evidence seems rather to show an avoidance of vowel contact, with occasional hiatus, mostly outside the metrical part of the clausula.[30] In Arnobius, vowel contact is more frequent; in a sample of 279 clausulae I found ten examples, of which six gave a favoured clausula with hiatus and four were unmetrical either way.[31]

C. Final -o and dare

Final *-o* is short in adverbs (and in the adverbial use of gerunds in the ablative), nominative nouns, and first-person verbs. Hall and Oberhelman believe that the clausulae of the *Codex Theodosianus* and the *Novellae* show that nouns ending in *-io* retained a long *-o*.[32] I have found no evidence for this in Vegetius. The nature of the favoured clausulae (see Section IIIA below) makes it almost impossible for *-iŏ* to show itself (any word that ends in a dactyl will give more favoured clausulae if one supposes that it ends in a cretic);[33] but with *-iō̆* we should expect to find clausulae of the form *promissio laeta*, which do not occur.[34] The early and frequent occurrence of *-iŏ* in Latin poetry[35] makes it difficult to believe that long *-o* was retained. Among late Latin poets, note that Avienus uses *regio* seven times in dactylic poetry, always before a vowel (for example *Orb. terr.* 115 *Ausonis hic regio est*), a limitation that suggests that *-iō̆* did not seem possible to him.

Hall and Oberhelman also believe that the short *a* of *dare* forms is long in the *Codex Theodosianus* and *Novellae*. Again I find no evidence for this in Vegetius. Instances such as 1.11.2 *tironibus dabant* need not be regarded as the cretic trochee of an incompetent prosodist, since the clausula -⏑-.-x is also legitimate (see Section IIIA

[28] Ennod. *Epist.* 1.1.4 p. 2, 15 *ornamenta aemulari* (in view of *Epist*. 1.5.9 p. 11, 27 *patris aemulator*, *Opusc.* 3.14 p. 334, 10 *pictor aemulari* and *Dict.* 1.19 p. 428, 18 *meliora aemulari*, one might speculate that Ennodius had a false quantity, *ĕmulari,* or that triple trochees had become part of the system, by substitution for *esse videatur*); 1.3.9 p. 7, 4 *vobiscum mihi alia res est* (the sort of short sentence that is often unmetrical).

[29] Excluding *Err.* 13, 5, where Turcan punctuates *dicant . . . perditi homines: qui potior est . . . ?* On the indicative in indirect questions, see F. Groehl, *De syntaxi Firmiana* (Breslau, 1919), 42–3.

[30] Havet (n. 14), 75–6, 78–94.

[31] For detailed discussion, see Hagendahl (n. 17), 96–9.

[32] R. G. Hall and S. M. Oberhelman, 'Rhythmical clausulae in the *Codex Theodosianus* and the *Leges novellae ad Theodosium pertinentes*', *CQ* 35 (1985), 201–14, at 208; Hagendahl (n. 17), 101, M. E. Mann, *The Clausulae of St Hilary of Poitiers* (Washington, 1936), 121, and A. Fougnies, *Een Studie over de Clauseln bij Ennodius* (Brussels, 1951), 116–17, have the same opinion on *-io* in Arnobius, Hilary, and Ennodius respectively, without good reason.

[33] The only possibility is in words with a short antepenultimate syllable, which can then make part of a resolved cretic trochee or double cretic. Although this resolution is not common, examples can be found: *Mil.* 2.5.1 *legio formatur*; 4.7.7 *ratio persuadet*; *Mulom.* 1.56.34 *ratio servanda est*. Of the four instances of *ratio* in Diocletian's price edict, three are of the type *ratio frenaret* (praef. 6, 12 and 14 L.).

[34] The examples in Hall and Oberhelman also do not include this form; but since -⏑-.-x is rare in their sample, this is hardly significant. On the other hand, three of their four examples differ from standard clausulae only by including the resolution of a long syllable, while the fourth is a 'favoured' clausula (-⏑-.-⏑x) which by their figures (p. 206) occurs only once in 1489 sentences.

[35] See e.g. Austin on Verg. *Aen.* 2.735.

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below). Better evidence would be the use of *dare* forms as the first trochee of a cretic trochee or double cretic. There is (I think) only one instance of this in Vegetius (3.26.16 *dare victoriam*, where one might consider *praestare,* as at 1.1.1 and 3.2.11); in view of the frequency of clausulae using a trochee, we should expect more than this.[36] Vegetius' use of *circumdătum* also shows regular prosody (4.28.4 and 4.45.4).

D. remedium and -que

Two points of doubtful scansion are *remedium* and *-que*. We would expect the former to scan as *rĕmedium*; and this scansion doubtless accounts for its absence from both classical and late Latin poetry. Vegetius, however, often places it at the end of a sentence after a trochee;[37] and, more significantly, it twice follows *atque*, usually a sign of an intended clausula.[38] This strongly suggests that he scanned the word *rēmedium* (*remmedium*?).[39] I lacked the nerve to scan it in this way while collecting examples, in the absence of good evidence outside Vegetius. Some other writers use it in a way consistent with this scansion; others seem not to.[40]

The behaviour of *-que* after short open vowels seems unusual. Vegetius, like many authors, avoids *-ĕque* (in the *Mulomedicina* as well as in the *Epitome*); but he also has very few clausulae with *-ăque* or *-ŏque*.[41] I have found only one at the end of a sentence, 4.16.2 *itineraque praemuniunt*, and three internal clausulae, 3.22.6 *retroque revocabant*, 3.26.17 *necessariaque non praeparat*, 4.9.1 *ceteraque tormenta* (*citharaeque*, *var. l.*). In the *Mulomedicina* we find 2.8.1 *labiaque turgebant*, 2.129.12 *expertaque remedia*, and 4.2.8 *nauseaque discutitur* (*nauseamque discutiunt*, *var. l.*), along with three internal clausulae, 1.40.1 *potioque miscetur* (*potusque*, *var. l.*), 2.123.2 *tunsaque cribrabis*, 3.13.4 *cribrataque servabis*. Why is *-ăque* / *-ŏque* added to fewer than one in a thousand penultimate words, when *-que* in this position is a well-known resource of the *cursus mixtus* where a trochee is needed?[42] Why is the same resource not suitable for providing the proparoxytone that precedes a double trochee (never, for instance, *castraque muniuntur*)? A possible explanation might be that *-que* could be regarded as lengthening the previous syllable. Hagendahl and Mueller give some evidence for this in Arnobius and

[36] Hall and Oberhelman's examples include several such initial trochees; this should be decisive, providing that the *Codex Theodosianus* does not, as Ennodius does, employ a pyrrhic word as a legitimate replacement for the initial trochee (e. g. *Opusc.* 1.27, p. 269, 3 *fera suggessit*, 1.28 p. 269, 5 *libet adtingere*).

[37] *Mulom.* 1.34.2 and 4.2.14 *salutare remedium*; 1.42.3 *adhibenda r.*; 1.56.1 *praestare r.*; 2.108.2 *affere r.*; 2.109.6 and 4.4.5 *ista r.*; 2.130.5 *vile r.*; 2.149.3 *sudore r.*; *Mil.* 3.15.8 *esse r.*; 4.20.2 *tale r.*; 4.23.1 *plura r.*

[38] *Mulom.* 1.21.3 and 2.88.11. On *atque*, see Section VA below.

[39] The behaviour of *re(d)-* compounds in general may be of interest, although I have noticed nothing more in Vegetius, unless passages like *Mulom.* 2.39.1 *plena reperies* indicate a scansion of *repperio*; on poetry, see L. Mueller, *De re metrica poetarum Latinorum*[2] (Petropolis and Leipzig, 1894), 448–51, particularly 450–1 (unusual lengthenings in late Latin poets).

[40] Anon. *De mach. bell.* 18.10 *facilitate remedium* and 21.1 *serenitate remedium* support the Vegetian scansion. On the other hand, Symmachus, who has the word several times, only uses it in clausulae to provide a proparoxytone, e.g. *Rel.* 29.2 *remedium deferatur*; such arguments from silence are unfortunately the only kind possible here.

[41] Symmachus shows the same tendency more strongly and never has *-que* after a short vowel within a clausula. Hilary may be another instance: Mann (n. 32), 121, found only one instance of a short vowel before *-que* in his clausulae.

[42] In Book 1 of the *Epitoma* I noticed fifteen examples that gave a favoured clausula, e.g. 1.1.2 *usuque militiae*, and twenty that were either in a metrically unmarked position or did not give a frequent clausula.

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in late Latin poetry.[43] If some authors did let *-que* cause lengthening, this might explain *Mulom.* 2.123.2 and 2.129.12 (cited above), which are otherwise inferior clausulae; and it would give a reason (prosodic embarrassment again) why Vegetius might be shy of such clausulae, particularly of one like *castraque muniuntur*, which some readers would scan as a triple trochee. One might even speculate that prosodic uncertainty has caused not only the rarity of these clausulae, but also the restriction, in the more polished *Epitoma*, to forms like *ceteraque*, which can be scanned either as a tribrach or (with lengthening) as a trochee. That Vegetius avoids *-ĕque* might suggest that his preferred scansion was without lengthening, unless here too he is hedging his bet.

A point of interest for clausulae (though not for their prosody) is that Vegetius, like Cicero,[44] avoids ending a sentence with *-que.* This restriction seems to apply also to internal clausulae; a glance at the relevant pages of Blackman and Betts will show columns of *-que* in which scarcely any instances are followed by a comma, except occasionally before a relative clause (a point often not marked by a metrical clausula). At *Mulom.* 1.42.5 *afronito miscebis ovoque* (*ovoque miscebis*, *var. l.*) and 2.17.5 *impones fasciabisque*, the text may not be sound, while *Mulom.* 4.12.2 *cum ab opere redierint boves adhuc aestuantes anhelantesque, vino aspergantur* is evidently mispunctuated.

III. FAVOURED CLAUSULAE

A. Statistics

The three most favoured metrical forms make up 78 per cent of Vegetius' clausulae; and all but a handful of these follow strict rules for word division and accentuation.

1 cretic trochee

-⏑.--x	*videntur exponit*	340
-⏑.-⏑-x	*defenduntur enumerant*	76
-⏑.⏑⏑-x	*Romana valuisset*	35
⏑⏑.--x	*numerus adscribi*	14
⏑⏑.⏑⏑-x	*ratio variatur*	4
-⏑-.-x	*strenuos nasci*	76
-⏑-.⏑-x	*impares fuimus*	27
⏑⏑-.-x	*aquilifer portat*	1
′xx.⏑--x	*cohortibus probarentur*	23
other forms		10

2 double cretic

-⏑.--x	*possit exercitus*	150
-⏑.⏑⏑-x	*castra facienda sunt*	1

[43] Hagendahl (n. 17), 95; Mueller (n. 39), 382 and 443 (referring to the belief of ancient grammarians, e.g. Serv. *Gramm.* 4.427, 6–10, that words with *-que* attached were paroxytone), cf. E. Courtney, *Musa lapidaria* (Atlanta, 1995), 24, with examples from inscriptions and further literature. The phenomenon seems peculiar to *-que*; even in Arnobius *q* normally does not affect the quantity of the previous syllable.

[44] C. S. Kraus, 'How (not?) to end a sentence: the problem of *-que*', *HSCP* 94 (1992), 321–30 gives figures for avoidance of *-que* at sentence end in classical Latin (she notes that it is a common feature of Sallust, Livy, and Tacitus to allow this more readily than other writers do).

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⏑⏑⏑.--x	*itineraque praemuniunt*	1 (but see IID)
-⏑-.-⏑-x	*constitutionibus cauta sunt*	31
-⏑⏑⏑.-⏑-x	*nec fugere nec sequi*	1
other forms		3

3 double trochee

′xx.-⏑-x	*exercitiis imbuendi*	163
--.⏑-x	*inceptum revertor*	12
⏑⏑-.⏑-x	*homines regebat*	3
other forms		24 (but see sections IIB, IVA, and IVC)

4 also ran

′xx.---x	*efficit bellatorem*	50
′xx.⏑⏑-x	*fuerat superavit*	33
-⏑-.⏑x	*plurimum valet*	42
remainder		145

B. Some general observations

In all types the unresolved form is the most frequent; and resolved forms follow the same word divisions as the unresolved forms. The more frequent word division for both cretic trochee and double cretic is that after the first trochee; this preference is normal for *cursus mixtus*, and more marked in other authors.[45] Since Vegetius seems to avoid resolutions in the double trochee and double cretic, discussion can concentrate on the cretic trochee.[46] There are more instances of resolutions for the more frequent unresolved form (-⏑.--x) than for the less frequent one (-⏑-.-x). Vegetius' resolutions seem to observe two restrictions: resolutions of more than one syllable are very rare (⏑⏑⏑.⏑⏑-x perhaps owes its limited acceptance to the fact that it gives a clausula both as cretic trochee and as *cursus velox*); only those resolutions are favoured which leave the accent on the first syllable of the foot, that is, not ⏑⏑⏑-.-x (*aquilifer portat*) or -⏑⏑⏑.-x (*perspicere possit*).[47] Since those resolutions which do not give a *cursus* form (-⏑.⏑⏑-x and ⏑⏑⏑.--x) are not avoided, it does not seem that Vegetius' main interest was to write clausulae that were simultaneously quantitative and *cursus*; rather the frequency of *cursus* forms in Vegetius' cretic trochees is largely an accident of the pursuit of a particular position for the accent within the foot. But comparison with the distribution of cretic-trochee resolutions in a sample of Cyprian's prose does give some support for those who think writers like Vegetius were seeking *cursus* sequences. My sample (from Cyprian's letters 1–7, 9–20, 25–29, 32–35, 37) had: -⏑.--x

[45] Compare Hall and Oberhelman (n. 32), 206.

[46] Resolutions of the double trochee are very rare in the quantitative-accentual system; resolutions of the double cretic are rare in some authors (e.g. Firmicus Maternus), reasonably common in others (e.g. Cyprian, Ausonius).

[47] At 2.13.1 *aquilifer portat* and 2.17.5 *nec fugere nec sequi*, the accent is displaced; could Vegetius not have noticed that he had created a resolved cretic trochee and double cretic? In other texts that I have looked at, including those that allow more frequent resolutions of the double cretic, resolutions that involve displacement of the accent are, as in Vegetius, avoided.

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66; -⏑.⏑⏑-x 24; -⏑.-⏑⏑x 18; ⏑⏑⏑.--x 17; ⏑⏑⏑.-⏑⏑x 2; -⏑⏑.-x 17; -⏑⏑.⏑⏑x 7. Every change of frequency in Vegetius favours the more common *cursus* forms.

While the two favoured forms of the double trochee both have an accent on the first syllable of the last foot (inevitably), neither has one on the first syllable of the first foot. If coincidence of ictus and accent is sought in the cretic trochee and double cretic, why is it avoided here? It may be that while a standard position of the accent within the foot is favoured (the one occurring most frequently in classical clausulae), it is only chance that this falls on the ictus in most clausulae. Double trochees of the form -⏑.-x do occur in Cicero (for example Cic. *Cato* 50 *esse maior*, 58 *atque cursus*); but more frequent are the two forms favoured by Vegetius. Vegetius shows a strong dislike for clausulae with accents separated by only one syllable (see Section IVA below), which may also be reflected in the rarity of the clausula -⏑.-⏑x (compared with -⏑⏑.⏑x).

The accentuation of the word before the quadrisyllabic form of the double trochee is the same as that expected for all other final paroxytone quadrisyllables, except that ⏑⏑-x often follows -⏑ (resolved cretic trochee above).[48] It might seem simpler to consider them all as various examples of the *cursus velox*. They are, of course; but to do so ignores the strong preference for the double trochee. Several earlier writers (for example Minucius Felix, Cyprian, the majority of the Latin panegyrics,[49] Diocletian's price edict,[50] Arnobius, and Firmicus Maternus) of quantitative-accentual clausulae avoid the double spondee and ⏑⏑-x (which gives an hexameter ending), whether the penultimate word is a proparoxytone or not. Symmachus appears to represent a middle stage in this development (not necessarily chronologically);[51] hexameter endings are avoided and double spondees are extremely rare, but when they occur, they follow a proparoxytone.[52]

The various forms of proparoxytone penultimate word are given below:

	final word			
penultimate word	-⏑-x	⏑--x	---x	⏑⏑-x
-⏑-	85	12	18	11
-⏑⏑	31	2	11	6
⏑⏑-	38	8	16	14
⏑⏑⏑	7	1	5	4
′-.x (for example *coniuncti sunt*)	2	0	0	2

The cretic is evidently far more frequent than other forms in the double trochee, though not so much so as to give it much value in deciding between *praeceperint edocere* and *praeciperent edocere* at 3 prol. 2 (where Önnerfors cites rhythm as an argument). In the cretic trochee, anapaests and cretics are doubtless preferred as the unresolved form.

The proparoxytone before paroxytone quadrisyllabic words can be put in context by comparing the frequency of words before a final molossus. Obviously the most

[48] The few exceptions are discussed in Section IVC below.

[49] All but *Paneg.* 3 and 4 date from the late third or early fourth century. Only *Paneg.* 3 (A.D. 362) makes any use of ′xx.---x (8 in 308 sentences). None has ′xx.⏑⏑-x as part of its system.

[50] The only double spondee is at praef. 16 L., *cui maxime providetur, cum praefinita avaritia compescetur*, where one of the two witnesses has *compescitor* (i.e. -*tur*), which gives a typical resolved double cretic, cf. praef. 6 L., *avaritia desaeviens*.

[51] The discussion of prose rhythm in Sacerdos, *Gramm.* 6.492, 25–495, 26, both recommends and uses clausulae like *decipere contendebant* or *contagia doluerunt*. Sacerdos is generally dated around the end of the third century; he would certainly have been untypical at this period.

[52] Havet (n. 14), 32.

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frequent penultimate in such cases is an unresolved trochee (-⏑.--x); one might expect iambic or pyrrhic words, or words ending in a spondee, to be the preferred alternative, since they too give the most frequent *cursus* sequence.[53] In fact, Vegetius very much prefers a proparoxytone in this position too. Even if we exclude ⏑⏑⏑.--x (fourteen instances, see Section IIIA), there are still sixteen instances of ′xx.--x (for example *duritia collectis*, *dirigat missile*) against only seven of ′x.--x (for example *pellendos a castris*).[54] One of the sixteen instances is a reading that Önnerfors should probably have rejected as a manuscript conjecture.[55] On the other hand the seven instances of ′x.--x are themselves doubtful. In three no clausula may be intended (at 1.7.1 an opposition follows, at 2.25.3 and 3.19.6 a relative clause)[56] and the punctuation could be downgraded. At 3.22.18, *a fronte et a tergo concludit* does not seem suspicious. On 3.24.4 *quarto infestum est*, see above, Section IIB. At 4.3.3, *moles obsistit*, Önnerfors mentions no variants; but perhaps on the analogy of *famis* at 3.3.1 (see Section IIA above) we could conjecture *molis* (*TLL* VIII.1338, 79–83).[57] 4.18.1 has *globus egreditur armatorum et . . . machinamentum illud ingens direptis coriis ⌊de lignis⌋ exurit* (⌊ ⌋ *vel ignis* ϵ). The variant in ϵ is at first sight unpersuasive; but, if Vegetius is thinking of simple torches, there is a contrast (admittedly not well expressed) with the more complicated incendiary devices described in the following section. The emphasis of *illud ingens* fits far better with such a reading. However we take these cases, it seems clear that Vegetius preferred a proparoxytone whenever he did not put a trochee in this position. It might be that a fear of being suspected of false quantities is responsible.[58] Whatever the reason, we have a regular preference for an accentual sequence other than that which considerations of *cursus* would lead us to expect.

IV. ANOMALIES

A. Unusual accentuation

Among the clausulae which occur more rarely than those described above, the large number of possibilities means that some forms to which Vegetius was not averse (merely indifferent) will still occur only once or twice. Can we distinguish these from clausulae that are rare because Vegetius avoided them? One possibility is to consider the expected frequency of a rare clausula; if it is much rarer than we would expect (a difficult question), then it would seem that Vegetius was avoiding it. Another

[53] Cf. Reeve (n. 9, 1998), 185.

[54] I found a similar proportion (twelve ′xx.--x to five ′x.--x) in my sample from Firmicus Maternus.

[55] 3.11.7 *marcidus adventat* in one or more late manuscripts (ϵ has *mariae eius*), for which Reeve (n. 9, 1998), 201, would substitute *anhelus adventat* of $\beta\delta$.

[56] 3.19.6 is also a naming clause; such clauses are often unmetrical (see Section IVA).

[57] One might (Professor Reeve suggests) also consider *famĕs* and *molĕs*; but the variant *famis* at 3.3.1 seems more significant than the absence of variants here, since the less usual form could so easily be lost.

[58] The molossus cretic is also relatively rare: alongside the 150 instances of -⏑.--x there are eight of --.--x; alongside the thirty instances of -⏑⏑.-⏑x, there are three of the type *levati sunt caespites* (1.24.1). Not all of these instances are certain: at 1.13.2 Önnerfors prints *pugnari quam ceteris*, although ϵT have *pugnare quam ceteros*, cf. Reeve (n. 9, 1998), 187; at 1.20.7, *quid . . . signiferi . . . in proelio facient, quorum et capita nuda constant et pectora?*, *constat* in ϵ seems to give better sense and a more likely direction of corruption; at 2.16.1 *posset sperari victoria*, the manuscripts are divided between a large number of readings and the true text is not obvious; at 3.9.2 *spes omnes intercidunt, T* has *omnis intercidit*.

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possibility is to consider clausulae that are known to be avoided in other authors (hexameter endings and triple trochees below). Thirdly we can consider features that could potentially occur in many or all clausulae, but in fact appear in very few. Some examples have been discussed above; another is the avoidance of clausulae whose accents are separated by only one syllable (′x.′x and ′x.′xx).[59] I have found twenty-seven examples (in 1265 clausulae) of this. Many of these, when inspected, give us reasons for regarding them as either exceptional or corrupt: several have other anomalies; some have variants that may be preferred; some can be improved by minimal conjectures.

Three instances come from the Latin glosses on Greek wind names in 4.38 (4.38.8 *notus, id est auster*, 4.38.9 *libonotus, id est corus*, 4.38.12 *boreas, id est aquilo*); these are evidently not intended as clausulae and are also unusual for other reasons (Section IIA above). We might compare other poor clausulae such as 2.14.1 *quemadmodum inter pedites centuria . . . appellatur, ita inter equites turma dicitur*, 2.15.5 *quod tunc vericulum, nunc verutum dicitur*, 3.19.2 *a vagantibus globis, quos dicunt drungos*, 4.37.3 *scaphae . . ., quas Britanni picatos vocant*. All these could easily have been named in conventional clausulae, since there was a variety of synonyms ready for this purpose.[60] Could it be that Vegetius, knowing that he would be able to put the expression in metrical form, occasionally noted down such sentences in provisional phrases, until the right expression should come to him? But this would raise the question (which I cannot answer) of why only these naming clauses should show such a tendency.

Three other cases may be taken together: 2.1.1 *constat et viris*, 2.16.3 *agnoscerentur a suis*, and 4.34.1 *esse quam domum*. We have seen that metrical words of the type *et viris* are rare, but that when they do occur in clausulae whose normal word divisions and accentuation are known, the accent seems to be placed on the monosyllable. Since the rarity of such cases suggests either that the accent was an uncomfortable convention or that there was some ambiguity as to the natural accent, it may be that the three instances here were allowed (or got past Vegetius' guard) with a different accentuation, *ésse quam dómum*, the normal pattern for a cretic iamb.[61]

Some instances may be places where Vegetius was not seeking a significant sense pause, and only modern punctuation conventions demand a sentence division. This may account for 2.5.2 (*iurare solent*), 2.25.4 (*esse solent*), 3.8.11 (*observari moris est*), and 3.25.5 (*perniciosa clades*).

For two passages there are very probable conjectures. At 2.15.1, *acies peditum a prima cohorte incipit ordinari in cornu dextro*, the oddity of a good clausula (*incipit ordinari*, cf. 2.6.3) followed by an unrhythmic sentence close asks us to transpose *in cornu dextro* before *incipit*.[62] Copyists needed no special encouragement to alter word order; but here there is the initial sequence *inc* shared between the exchanged parts, so that *in cornu dextro* could easily have been omitted and then put back in the wrong

[59] The table in Oberhelman (n. 3), 233–5, shows that many writers avoid this accentuation, Vegetius more than most.

[60] For example 3.14.16 *quos antiqui triarios appellabant*; 2.7.12 *munifices appellantur*; 3.14.9 *quos antea ferentarios nominabant*; 2.8.8 *qui nunc centenarii nominantur*; 3.8.22 *nuncupata castella*; 4.40.3 *graeco vocabulo nuncuparunt*, where, as Laurand (n. 1), 101, remarks, the contracted verb form (cf. Section VB) and redundant expression are there for the sake of the clausula; 3.14.5 *hastatos vocabant*; 3.8.18 *circitores vocantur*.

[61] At 3.22.4 on the other hand only the accentuation *ét statim ínruant* would be permissible; but even this gives no favoured clausula and features an unusual hiatus.

[62] In general, transposition is too powerful a resource to allow much confidence in the conjectural solutions it offers, even though the corruption does occur frequently.

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place. 4.9.1 has *intenta nihil prosunt* (*nil*, of course).[63] With less confidence, at 2.24.3 we might try *pro laude vulg<ar>i*.

Variants need consideration in three passages. At 3.8.6 the text runs as follows: *Tribus* (*tres* $\beta\epsilon$) . . . *modis* (*modos* β, *modus* ϵ) *definiunt* ⌊*castra muniri posse*⌋ (⌊ ⌋ *fossae* $\beta\epsilon$). Reeve notes that the reading of $\beta\epsilon$ gives a good clausula;[64] but the Latin is awkward and *fossae* seems too narrow for the description that follows. Deletion of *posse* from the text of δ gives natural Latin and the most frequent Vegetian clausula (see Section IIIA1); indeed, the actual words *castra munire* also occur at sentence end at 1.25.3 (see Önnerfors's critical apparatus) and as an internal clausula at 1.25.1. Since *posse* and *fossae* look like lightly disguised versions of the same reading, one might suppose that they go back to an addition in the archetype which stood above *castra muniri* and replaced it in two branches, but was added to it in a third. If it was *posse* that stood above *castra muniri* in the archetype, then another possibility, as an anonymous reader points out, is that the intended correction was *castra posse muniri*, which likewise gives a good clausula. At 3.14.4 *adversum hostem spectat*, the reading *expectat* in πT gives a cretic trochee, but with hiatus (generally avoided). The reading of ϵ's descendants might be a result of over-correcting habits of their exemplar;[65] but the correct text is not obvious here. At 3.23.4 *saepe rumpunt*, β has *perrumpunt*, obviously correct.[66]

The remaining passages are: 1.27.1 *hoc exercitii genus nominant*, also unusual as a three-word clausula, where one might perhaps delete *exercitii* (for the accentuation of *hoc genus,* see Section IIA); 2.22.4 *admonente cessant* (see Section C below); 2.23.2 *exercebantur armis*; 3.5.8 *tufae, pinnae*, a list; 3.7.2 *impedimenta transeant* (the anonymous reader suggests *pertranseant*); 3.26.29 *potius ipse tecum* (regular, if *ipse tecum* could be regarded as a metrical word, but this does not fit Vegetius' normal usage); 4.39.4 *easdem Taurus*, a conjecture.

B. Hexameter endings

The typical hexameter endings -⏑⏑.-x (*volvere casus*) and -⏑.⏑-x (*adire labores*) are avoided in Vegetius as in Cicero; it is one of the most generally respected restrictions in Latin prose, reflected in late antique and even medieval grammarians. The only instance in Önnerfors's text 3.5.3 *semivocalia, muta* comes at the end of a list and may in any case not have been regarded by Vegetius as ending a sentence. At 3.6.33, Reeve suggests emending the internal clausula *non oportet omitti* (*comitti T*) to *amitti*;[67] this is very plausible, although an editor should probably retain *omitti*, since Vegetius may have scanned it as a molossus.[68]

C. Triple trochees and related questions

A sequence of three trochees is avoided in Cicero, even though the double trochee is a preferred clausula.[69] It is also very rare in Vegetius (nine instances in Önnerfors's text); and the few examples should doubtless be removed. At 1.6.2 *disciplina com-*

[63] The same conjecture could also help in the chapter heading at 4.20 *nocere nihil possit*.
[64] Reeve (n. 9, 1995), 493.
[65] Cf. Reeve (n. 9, 1998), 204. [66] Ibid. 206. [67] Reeve (n. 9, 1995), 493.
[68] Cf. *Mulom.* 1.17.1 *ut nihil expediat omitti* and 1.22.10 *non oportet omitti*; see also *TLL* IX.2, 581, 23–33 and on Symmachus, Havet (n. 14), 15–16.
[69] Cicero is generally described as preferring a cretic before a double trochee, doubtless rightly;

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prehendit the contracted form would give a typical cretic trochee, as at 1.9.5 *terga comprehendant*.[70] At 1.27.1 *educantur ambulatum*, β has *educantur* earlier in the sentence, leaving the expected clausula *pedites ambulatum*.[71] If the stemma is tripartite, as Reeve suspects, β is in any case only one witness against two; but it may be that the readings reflect what the manuscripts have made of an erroneous repetition in the archetype.[72] At 2.8.8 *caput contubernii vocantur* might be explained as due to the stopgap technique in naming clauses suggested above (section A). At 2.15.3 *hoc est ordinarii ceterique principales* was deleted as a confused gloss by Lang, one of the few such deletions approved by Milner.[73] At 2.22.4 *admonente cessant* (also irregular accentually), a molossus seems needed for the final word (perhaps *concessant*, although the word is not common). 3.3.1 *saevior fames est* has been discussed above (Section IIA). 3.12.7 *quae ex usu sunt <nota> non timentur* is a conjecture of Önnerfors; Eussner's *<nota> sunt*, which Önnerfors is adapting, would give an orthodox clausula, as would the transmitted text. The most difficult passage is the last, 4.33.1 *diversae . . . provinciae quibusdam temporibus mari plurimum potuerunt, et ideo diversa genera navium fuerunt. Sed Augusto dimicante Actiaco proelio . . . patuit Liburnorum naves ceteris aptiores*. The most obvious conjecture is *navium fuerant*; but what would it mean? 'Different provinces have been leaders in this field at various times, and so there had (over the years) been different kinds of ships; but Actium changed all that.' The change from perfect to pluperfect still seems hard to justify. 'Kinds of ship' are perhaps not the right sort of abstract concept for *floruerunt*; but the metaphor would perhaps suit Vegetius' ornate style.

The rarity of clausulae of the form *disciplina comprehendit* might also be influenced by the preference for the *cursus velox*. If we consider the other passages where a final paroxytone quadrisyllable is not preceded by a proparoxytone, we find that there are very few instances. Apart from cases involving hiatus (Section IIB above), there remain sixteen passages. Before the double spondee: 2.10.5 *aliquando procurabat*; 3.1.10 *maior mittebatur*; 3.3.11 *ballistisque defendantur*; 3.8.18 *quos circumitores appellabant*, a naming clause (cf. Section IVA). Before the double trochee: 3.14.8 *gravioribus armis collocantur*; 3.14.13 *fundibulatores funditores*, a list; 3.24.7 *in elephantos dirigebant*. Before ⏑---x: 1.3.1 *sit tiro requiramus* (*tiro sit* ϵT);[74] 2.9.3 *eodem petebatur*; 2.15.8 *hastati vocabantur*, a naming clause; 3.12.7 *mores adversariorum, arma, equos recognoscant*; 3.14.7 *atque recedendi* (see Section VA below). Before ⏑⏑-x (excluding resolved cretic-trochees): 3.2.9 *in campo voluerunt*; 3.6.22 *aut certe tenuetur*; 3.24.1 *Antiochus et Mithridates habuerunt*; 3.24.6 *copiosos habuerunt*. Although rare, the accent sequence does seem to be tolerated.

but the various substitutions and resolutions described as permitted, see e.g. D. Berry (ed.), *Cicero, Pro P. Sulla oratio* (Cambridge, 1996), 51, amount in fact to a rule 'no triple trochees'.

[70] We can reasonably add other cases where a contracted form improves the clausula: 1.6.5 *signa deprehenderis* (an internal clausula); 3.24.9 *posset adprehendere*; 4.30.2 *altitudo deprehenditur*, although δ here seems to have had a variant *perpenditur* alongside *deprehenditur*, see Reeve (n. 6), 346. On the other hand, the uncontracted form is better at 2.4.4 *valeant comprehendi*; 3.6.12 *adversariis comprehensus*; 3.15.2 *passuum comprehendit*.

[71] Cf. Reeve (n. 6), 278.

[72] Cf. *Paneg*. 10.12.6 *Oceanus redundavit Oceanus*, where a better rhythm (both are acceptable, of course) is given by deleting the first *Oceanus* with Castiglioni, rather than the second with some later manuscripts.

[73] N. P. Milner, *Vegetius: Epitome of Military Science* (Liverpool, 1993), 47, n. 3; cf. p. xv on Lang's deletions in general.

[74] Cf. Reeve (n. 9, 1995), 493.

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V. MEANS OF FLEXIBILITY

A. Preconsonantal atque

That preconsonantal *atque* could mark a clausula has long been recognized in the study of late Latin prose.[75] Its particular value as an indicator of internal clausulae (noted by Nisbet on Cicero) allows us to see at how low a syntactical level we can expect a pause to be marked, sometimes even the combination of two adjectives or participles (for example *Mulom.* 2.88.3 *quae omnia diligenter tunsa atque cribrata redigantur in pulverem*), though not of course when the noun directly follows. The examples in the concordance of Blackman and Betts (67–8) show overwhelmingly the same tendency. In the *Mulomedicina*, forty-seven (perhaps forty-nine, cf. Section IID above) of the fifty-eight examples of preconsonantal *atque* come from evident clausulae; in the *Epitoma,* twenty-nine out of thirty-eight.[76] The exceptions are at least in need of investigation. At *Mil.* 2.1.9 *desiderat fidem atque diligentiam*, although the clausula is unusual, the text is not in doubt, since *atque diligentia* recurs at *Mulom.* 1 pr. 16. If there is not a false quantity in *diligentia*, we may be dealing with a formulaic expression; *atque diligentia* is Ciceronian.[77] At *Mil.* 2 pr. 5 *tanti imperatoris non oboedire mandatis plenum sacrilegii videbatur atque periculi* is puzzling, since normal word order gives the satisfactory clausula *periculi videbatur*. One might consider *atque discriminis* (compare *Mil.* 3.8.1 *incautum est plenumque discriminis*); on the other hand the eight remaining instances of final ⏑–⏑x all follow a trochee,[78] as do the internal clausulae 2.7.4 *atque vicarii*, 3.13.3 *atque patentia*, and 4.38.4 *atque vocabula*. A similar uncertainty occurs with 4.19.1 *atque lapidibus* and 4.31.5 *atque Siciliam*; there are only seven instances of final ⏑⏑⏑x,[79] but they too follow a trochee. Is it easier to see coincidence here or a regularity which is effective in such homeopathic quantities? Disregarding quantity, pursuit of the *cursus tardus* might be the explanation (proparoxytone quadrisyllables almost always follow a paroxytone in Vegetius' clausulae); it would still be odd that Vegetius, who seems relatively indifferent to clausulae at the end of lists, should have sought out so weak a clausula at 4.31.5. At 3.14.7 *ut haberent pugnantes spatium accedendi atque recedendi*, an original *cedendi* would easily be corrupted. At 3.20.7 *ut . . . sinistram partem illius* (sc. *alae*) . . . *adgrediaris atque circumeas et detrudendo atque supercurrendo ad hostium terga pervenias*, no solution is obvious; *superando* would give the desired clausula, but the origin of the corruption would be hard to explain. Possibly *atque* serves here simply to provide the *cursus velox* sequence *átque supercurréndo*, although the word division

[75] Havet (n. 14), 90, n. 2; for Cicero, see Nisbet (n. 19), 356 (= 319). Of course, some authors use *atque* for other reasons (and Vegetius himself only twice has *ac* before *c* or *g*: *Mulom.* 3.12.1, 3.28.1, the latter apparently in an interpolated chapter); on the various possibilities, see G. O. Hutchinson, 'Rhythm, style and meaning in Cicero's prose', *CQ* 45 (1995), 485–99, at 485, n. 2.

[76] At *Mil.* 1.1.6 the variant *atque in proeliis* should be preferred to *atque proeliis*, cf. Reeve (n. 9, 1995), 493–4; at *Mil.* 3.16.7 Önnerfors has rightly on metrical grounds preferred the variant *missilibus* to Lang's *missibilibus*.

[77] Hutchinson (n. 75), 485. The word order of *Mil.* 1.17.1 *est tradenda iunioribus* might support belief in a preference for the clausula -⏑.-⏑⏑-x, if we could be sure that Vegetius did not write *tironibus* (double cretic).

[78] But this figure includes five instances with the phrase *ab hostibus* (3.7.9 *opprimantur ab hostibus*, 3.18.8, 3.20.23, 3.22.1, 4.10.3) and 1.12.2 *defendantur et ossibus*; Vegetian clausulae do not normally include short monosyllables (see Section IIA).

[79] Three times with *remedium* (see Section IID) and twice with a metrical word that includes a short monosyllable, 1.3.3 *accedat et animis* and 3.5.3 *referuntur ad oculos*.

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would be unusual (of the six clausulae at sentence end with final xxx′x, four have a penultimate paroxytone word, two a proparoxytone).

B. Verb forms

Hartke gives examples of Vegetius' preference for *-ēre*, where this gives a better clausula than *-ērunt*.[80] I have no explanation for the exceptional *clausere urbes* at 4.2.1; certainly no accentual clausula is to be found there, as Hartke imagines. He also notes that Vegetius only used contracted forms of the perfect infinitive and the pluperfect subjunctive; for this reason (among others) he regards as interpolated a sentence with the uncontracted form at 1.19.2 *quam rem antiquos milites factitavisse Vergilio ipso teste cognovimus, eqs.* Less violently we might write *factitasse*, which gives a typical double trochee. Önnerfors rightly uses rhythm to justify his preference for the contracted perfect indicative *militare consuerunt* at 2.2.3 (*consueverunt* π); he also notes its superiority at 4.19.2, where it is the reading of *T*, but in that case prints the inferior *adhibere consueverunt* of $\epsilon\delta$.

Reeve considers the genitive plural of present participles in a discussion of 3.6.5, *sub periculo eligentium* (δ, *-ntum* Z, *-ndum* ϵT); he concludes: 'An editor could do worse than toss a coin.'[81] The needs of clausulae may be relevant here. In the seven passages mentioned by Reeve where only *-ntium* is transmitted, there is either no clausula or one that uses *-ntium*: 1.26.3 *ad dimicantium terga*; 4.12.1 *oppugnantium sanguine*. In four of the seven passages where there is some evidence for *-ntum*, there is a better clausula with this form: 1.7.9 *per gratiam aut dissimulationem probantium* ($\epsilon\delta$, *probantur* β); 2.3.9 *dissimulatio praecedentium* (VWX, *-ntum* ϵRb);[82] 3.4.7 *pro invidia suggerentum* (Bβ, *-endum* M, *-ntium* δ); 3.6.5 (given above).[83] In three passages there is no clausula. Two have only weak support for *-ntum*: 2.3.3 *in recedentium locum iuniorum* (δ, *recidendum* ϵ, *secedentium* β); 4.8.7 *oppugnantium machinis* ($\epsilon\delta$, *oppugnandum* β). More puzzling is 4.30.6, *in obsidentum potestate consistere*, where the contracted form is found in all branches of the transmission. Vegetius does not elsewhere seek to avoid the danger of an unintended clausula such as *obsidentium potestate* (cf. for example 1.7.2 *convenit sociare militiae*, 1.9.9 *exercitiis praeparasset ad proelia*); but perhaps he saw a greater risk of misreading here. Despite this last example, if we choose *-ntum* where it is both supported by variants and metrically superior, and otherwise remain with the transmitted reading or (at 2.3.3 and 4.8.7) the variant *-ntium*, we may do as well as the evidence allows.[84]

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[80] W. Hartke, *De saeculi quarti exeuntis historiarum scriptoribus quaestiones* (Leipzig, 1932), 6–7.

[81] Reeve (n. 9, 1998), 197–9.

[82] Önnerfors seems to prefer *praecedentium* on the grounds that this gives a resolved molossus-cretic; but the molossus cretic is far rarer in Vegetius than a proparoxytone word followed by a quadrisyllabic double spondee. The five-syllable final word is also rare in Vegetius.

[83] The hiatus is acceptable here, see Section IIB.

[84] I owe thanks for suggestions to *CQ*'s anonymous reader and particularly to Professor M. D. Reeve, who kindly criticized an early draft of this article. Changes and additions make it important to stress that any errors are my own.

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