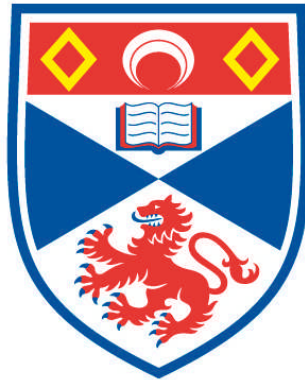


**STUDIES IN THE CAREER OF PLINY THE ELDER AND
THE COMPOSITION OF HIS 'NATURALIS HISTORIA'**

PETER G. MAXWELL-STUART

**A Thesis Submitted for the Degree of PhD
at the
University of St Andrews**



1995

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STUDIES IN THE CAREER OF PLINY THE ELDER
AND THE COMPOSITION OF HIS
NATURALIS HISTORIA


THESIS SUBMITTED FOR THE DEGREE OF PHD
BY
PETER GEORGE MAXWELL-STUART
ST ANDREWS 1995



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ABSTRACT

This thesis reviews Pliny's career and the composition of his last work, the *Naturalis Historia*. In the first chapter, the hypotheses of Münzer and Syme relating to Pliny's career are examined and an alternative suggested, according to which Pliny's military career may be dated a decade later than is usually envisaged. Chapter two dates the composition of the *NH* to either 72-78 or 76-78. Chapter three examines Pliny's working time-table and offers comparison with Cicero's time-table in 45 B.C. Chapter four reviews the various resources available to Pliny for research. Chapter five examines his working-methods and suggests a possible format for his *commentarii*. There are thirteen appendices, seventeen figures, and eight maps.

ACKNOWLEDGEMENTS

I should like to record here my gratitude to Professor H. M. Hine, my supervisor, whose meticulous scholarship has guided this thesis throughout its many stages of evolution; to Dr. W. G. Naphy, who undertook the often frustrating task of typing a complicated manuscript; and to Herrn M. Huehn and R. Trapp who came to my assistance whenever a German text proved impenetrable.

P. G. Maxwell-Stuart

St Andrews, 1995.

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ABBREVIATIONS

For the most part, I have used the system of *L'Année Philologique*. Other abbreviations are as follows:

CIL	<i>Corpus Inscriptionum Latinarum</i>
OLD	<i>Oxford Latin Dictionary</i>
PL	Migne, <i>Patrologia Latina</i>
PME	Devijver: <i>Prosopographia Militiarum Equestrium</i> .
POx	<i>Papyri Oxyrhynchi</i> .
PW	Pauly-Wissowa: <i>Real-Encyclopædie</i> .
RP	Syme: <i>Roman Papers</i> .
SB	Shackleton Bailey: <i>Letters to Atticus, Epistulæ ad Familiares, Epistulæ ad Quintum</i> .
TLL	<i>Thesaurus Linguae Latinae</i>

Pliny's Text

I have used the Teubner text for all quotations from the *Naturalis Historia* except for certain instances in which I have indicated the source of the different text.

Pliny's Career and its Relation to his Literary Works

The available evidence for Pliny's life and career consists of a short biographical notice usually attributed to Suetonius, his nephew's letters, and passages drawn from the *Naturalis Historia*. In view of the nature and paucity of this source-material, it is therefore not surprising that many details of both life and career have been much debated.

(i) Early Life

We are told by the biographical notice, (hereinafter referred to as the *Vita*), that Pliny was born in Comum Novum, a Cæsarean colony in the Cisalpine region of North Italy. Attempts to make him a native of Verona have not been successful.¹ Pliny the Younger allows us to fix the year by saying that his uncle had died 'anno sexto et quinquagesimo' (*Ep.* 3.5.7), which gives us 23 or 24 AD. It is difficult to gauge with any exactitude the social standing of Pliny's family. According to Chilver, the Plinii were not particularly distinguished; but the marriage of the elder Pliny's sister to one of the Cæciliii who certainly did have money and a public position, and his ability to follow an equestrian army career, imply that his immediate family, at least, was comfortably-off and socially respectable.²

One may guess that he began his schooling with a *ludi magister* at about the age of seven (30/31 AD), and continued with a *grammaticus* in 34/35. It was in the latter year that Marcus Servilius Nonianus was consul, as Pliny records (*NH* 37.81), and if his 'vidimus' is to be understood as including himself, we should infer that he had by then left Comum

¹ See Ziegler in *PW* 21. 271-2 for a summary of the relevant material. Smith (*Dictionary*, 414) gives more detail.

² L. Cæcilius C. f. Secundus, who may have been Pliny's father, was a *IVvir*, pontifex and *præfectus fabrum*. He also began building a temple to Æternitas Romæ et Augusti which Chilver thinks was completed by Secundus. The *gens Plinia* warranted eleven inscriptions at Comum and the surrounding area, but other Plinii were freedmen. *Cisalpine Gaul*, 106-7. Sherwin-White: *Letters*, 69-70. Ziegler, *op. cit.*, *supra*. Chilver and Sherwin-White do not agree on the identity of Pliny's father; Ziegler records both possibilities. On the Plinii see also Syme: *RP* 7.510.

Novum to take up residence in Rome.¹ Presumably he also adopted the *toga virilis* at about the usual age, which brings us to 38/39.²

Both were years full of incident. Pliny tells us that he saw Lollia Paulina, briefly Caligula's wife, dripping with jewels at a betrothal banquet. As she was married to the Emperor in 38 and divorced in 39, (probably during the especially hot summer of that year), Pliny may have seen her on one of his early appearances in Roman society as a man rather than as a boy.³ If so, his patron is likely to have been Pomponius Secundus. Several things linked Pliny and Secundus, and Secundus with Caligula. For a start, Caligula had Secundus released from gaol after Tiberius's death and made him *consul suffectus* in 41. Secundus showed his gratitude in various ways: by throwing a dinner-party for the Emperor, for example, at which particularly expensive wine was served; and by lolling below the Emperor's chair in the amphitheatre on the day of his assassination and fervently kissing his feet in between mouthfuls of food.⁴ Another connection: Milonia Cæsonia, who became the Emperor's fourth wife, was Secundus's half-sister.

Secundus himself was particularly fond of Pliny, ('singulariter amatus', says Pliny the Younger of his uncle);⁵ so it seems probable that, with such an apparently high-placed friend, Pliny would have been able to move in important company and to make useful contacts soon after arriving in Rome. Domitius Corbulo, for example, was a notable military commander throughout the reigns of Claudius and Nero, and was also half-brother to Secundus.⁶ Speculation has linked Pliny's military career with both men, and it is possible that in later years Corbulo answered Pliny's questions about the geography of Armenia and the conduct of the military campaign which he had waged there. If so, it suggests that Pliny

¹ For the ages, see Bonner: *Education in Ancient Rome*, 137. Pliny may have been obliged to leave home at this time because there was no suitable teacher in Comum. Seventy years or so later, his nephew wrote to Tacitus about his proposals for setting up private provision for grammatical studies there, *Ep.* 4.13 and Sherwin-White's note *ad* 4.13.3.

² Bonner: *Education*, 84. Marquardt: *Das Privatleben der Römer*², 128-33.

³ *NH* 9.117. Dio Cassius: 59.23.7-9.

⁴ *NH* 14.56. Dio Cassius: 59.29.5.

⁵ *NH* 7.39. Pliny: *Ep.* 3.5.3.

⁶ See Syme: *RP* 2.811-12. Details about Secundus's never belching (*NH* 7.80) or Caligula's tree-house banquet (*NH* 12.10) may also derive from Pliny's friendship with Secundus, but one cannot take this as certain.

was collecting material for some kind of literary work, (not necessarily the *NH*), before 66/67, the date of Corbulo's death.¹

(ii) Career (i): General Remarks

Conjectural reconstruction of Pliny's career has tended to assign him the following sequence of posts.

(a) After campaigning in both Lower and Upper Germany, he took up civilian life as a lawyer in Rome, retiring into private concerns and occupying himself with *belles lettres* during the reign of Nero when, as Pliny the Younger puts it, 'omne studiorum genus paulo liberius et erectius periculosum servitus fecisset'.²

(b) With the accession of Vespasian, Pliny emerged to enjoy a glittering career of more than one procuratorship.³ A maximum of four is usually given by commentators—Gallia Narbonensis, Africa, Hispania Tarraconensis, and Gallia Belgica—but here, more than anywhere else in studies of his career, there is disagreement.

(c) Finally, he was given command of that part of the Imperial fleet which was based at Misenum, combining this with the honour of being one of the *amici principis*—indeed, an *amicus* of more than one Emperor, according to Pliny the Younger.⁴

Thus Münzer, Nailis, Pflaum, and Syme, who are the principal secondary sources for any discussion of Pliny's career, along with many reference books and commentaries. One or two notes of caution or dissent have been sounded, but so far they have been in a minority.⁵

¹ 'anxia perquisitis cura rebus nuper in eo situ gestis a Domitio Corbulone regibusque inde missis supplicibus aut regum liberis obsidibus', *NH* 6.23. 'Perquirere' suggests that Pliny contacted Corbulo personally.

² *Ep.* 3.5.5. On Germany, *Ep.* 3.5.4 and inferences based on *NH* 12.98; 16.2-4, etc.

³ *Vita* = Reifferscheid, *Suetoni Reliquiæ*, p. 92.

⁴ 'Principum', *Ep.* 3.5.7.

⁵ Commonly accepted view: Münzer: *Bonner Jahrbücher* 104 (1899), 67-111. This article is the starting-point for anyone who wishes to discuss Pliny's career. Nailis: *Philologische Studien te Leuven* 13-14 (1942-3), 1-23 and 65-77. Pflaum: *Les fastes de la province de Narbonnaise*, 112-15 and *Les carrières procuratoriennes équestres sous le haut-empire romain*, 1.106-111. Syme: *RP* 2.745-66; 7.496-9; Frederiksen in *Como* (1980), 93. *Encyclopædia Britannica* 11 ed. s.v.v. 'Pliny the Elder'. The Italian, French, Spanish, and Soviet encyclopædias follow the same line. So do the *Oxford Classical Dictionary* (repeating the *DSB*), Grant: *Greek and Latin Authors*,

(iii) Sources

What is unsatisfactory about this résumé of the various posts Pliny is said to have held from the early forties onwards? It is a question partly of how much reliance one can put on the source-material, and partly of how the available information is to be interpreted. Let us start with the former.

Pliny the Younger's biographical material about his uncle is to be found almost entirely in three of his letters; one to Bæbius Macer (3.5), a fellow-Transpadane from Comum or, more likely Mediolanum,¹ who appears to have asked for a complete list of Pliny the Elder's books; the others to Cornelius Tacitus (6.16 and 6.20) in answer to a request for details about Pliny's death, details which were to be recorded in a continuation of the historian's account of the Emperors Titus and Domitian. Unfortunately, however, none of these letters describes his uncle's posts in any detail. The first refers to Pliny's military career only *en passant*—'cum praefectus alae militaret' (3.5.3), 'cum in Germania militaret' (3.5.4)—and makes reference to only one procuratorship, that which Pliny held in Hispania Tarraconensis (3.5.17). Is this brevity significant? Not really. The two military allusions appear in connection with his first and third books *De iaculatione equestri* and *Bella Germaniæ*, and are clearly meant to help explain how he came to write these particular works, rather than build any kind of picture of his experience in the army.

The same may be said of the reference to the procuratorship. Pliny the Younger's 'cum procuraret in Hispania' is not offered to the reader as a major piece of information. It occurs simply as a subordinate clause in a sentence whose main interest lies in the fact that Pliny the Elder turned

the introduction to Volume I of the Budé edition of *NH*, pp. 6-12, and Devijver: *PME* 2.647-8. A recent survey of Classical literature not only repeats dates and details of Pliny's military career as though these were established facts rather than conjectures based largely on Münzer's work, but offers dates of his early literary works, similarly based on nothing but Münzer's conjectures: Dihle, *Greek and Latin Literature of the Roman Empire*, 180-2. Cautionary notices, in one way or another: Reynolds in *Science and the Early Roman Empire*, 8. Sherwin-White: *Letters*, 219-221, earning the disagreement of C. P. Jones in his review-article, *Phoenix* 22 (1968), 126. Ziegler in *PW* 21.277.

¹ Syme: *RP* 5.462 and *ibid.* note 108.

down the offer of a large sum of money for his *commentarii*, made by Larcus Licinus who, as we know from elsewhere, also served in a political office in Spain. The context, in other words, merely creates an opportunity to mention Spain with no further implication required or desirable. All we can learn from this is that Pliny did indeed serve as procurator in Spain, but that is that.

Two more passages from the same letter are of biographical interest. In the first (3.5.7), Pliny says that his uncle spent much of his time in important offices ('*officiis maximis*') and in the friendship of the Emperors ('*amicitia principum*'), a reference partly to the personal relationship he had with Titus and, through him, with Vespasian, and partly to his membership of the *consilium principis* as an official *amicus*.¹ In the second, however, (3.5.18) he refers to the friendship of only one ruler ('*amicitia principis*'). Are we to regard this as a difference of particular consequence? Once again, I think not. The context of the first passage shows that the younger Pliny was making general remarks about his uncle's career between his ceasing to practise as a lawyer and dying on 24th August 79, two months to the day after Titus had succeeded as Emperor. In other words, it could truly be said that he was occupied with the 'friendship' of both Vespasian and Titus, and one may have to infer from 'principum' that Pliny continued to play a political advisory role under the son as he had under the father. The context of the second passage is equally general.

Nonne videtur tibi recordanti, quantum legerit quantum scripserit, nec in officiis ullis nec in amicitia principis fuisse; rursus cum audis quid studiis laboris impenderit, nec scripsisse satis nec legisse?²

In view of all his uncle had written, says Pliny, one must think either that he had neglected his duties in public office and as *amicus principis* in order to produce so much scholarly work; or that he had fulfilled his public duties so conscientiously that he had not actually produced as much

¹ 'Magis miraberis si scieris illum aliquamdiu causas actitasse, decessisse anno sexto et quinquagesimo, medium tempus distentum impeditumque qua officiis maximis qua amicitia principum egisse', (3.5.7). 'Nonne videtur tibi recordanti, quantum legerit quantum scripserit, nec in officiis ullis nec in amicitia principis fuisse', (3.5.18).

² 'Ce passage a été discuté, on a même supposé qu'il présentait des lacunes', Budé note *ad locum*.

scholarship as he might have done. Here, obviously, the singular 'principis' is appropriate, although two manuscripts do have 'principum'.¹ It makes little difference to the point Pliny the Younger wishes to convey.

From the letter to Bæbius Macer, then, we learn very little about Pliny's career, largely because it was not the intention of that particular letter to go into any such details. We discover incidentally that Pliny served in the army in Germania; that he filled the office of procurator in Hispania; and that he was an *amicus* to Vespasian and perhaps to Titus as well. Otherwise, the letter devotes itself to a bibliography of his works, published and unpublished, and information about his working-practices. We are not meant to receive anything more than this, except *en passant*.

What, then, of the biographical notice ascribed to Suetonius? Attribution of authorship depends on a note attached to codices of Books 11-15 of the *NH*. The note is very brief—'vita Plinii ex catalogo seu libro virorum illustrium Tranquilli'²—and the notice itself consists of only these sentences:

Plinius Secundus Novocomensis equestribus militiis industrie functus procuraciones quoque splendidissimas et continuas summa integritate administravit, et tamen liberalibus studiis tantam operam dedit ut non temere quis plura in otio scripserit.

Itaque bella omnia quæ umquam cum Germania gesta sunt XX voluminibus comprehendit, itemque Naturalis Historiæ XXXVII libros absolvit.

Periit clade* Campaniæ; cum enim Misenensi classi præesset et flagrante Vesuvio ad explorandas propius causas liburnica pertendisset, nec adversantibus ventis remeare posset, vi pulveris ac favillæ oppressus est, vel ut quidam existimant a servo suo occisus, quem æstu deficiens ut necem sibi maturaret oraverat.

[* 'clade, Hermolaus Barbarus; gades (gadis, V) or grades, mss:' Loeb footnote]

¹ *a* = editio Aldina, and Codex Monacensis 11301. These are recorded by the Budé edition but not by the Teubner nor by OCT. The Munich ms. consists of *excerpta* whose respectability in terms of ms. tradition is hard to judge. But Aldo's 1508 edition was based on a lost ms., the *Parisinus*, which has certainly been judged sound. See Johnson: *CPh* 7 (1912), 66 and Mynors (OCT editor), Introduction, xxi.

² See Reifferscheid: *G. Suetoni Reliquiæ*, p. 92, note on extract 80 = Plinian *Vita*.

Baldwin, the most recent commentator to take a critical interest in the question of authorship of this passage, has a number of points to make, not only about the note's provenance but also its worth as evidence.¹

He queries Suetonian authorship as follows: (i) a comparison between the first sentence of the *Vita* notice and Pliny, *Ep.* 3.5.7 reveals that the former is a close, but highly selective, paraphrase of the latter, (401); (ii) the account given by *Vita* of Pliny's career is remarkably brief, and makes no mention of Pliny's *amicitia principum*, (401); (iii) only two of Pliny's books, the *Bella Germanorum* and the *Naturalis Historia* are mentioned by *Vita*, (402); (iv) there are three significant differences between the *Vita* version of Pliny's death and the account of his nephew, (403-4). Baldwin argues that points (ii) and (iii) sit uneasily with the proposition that Suetonius wrote the notice, and concludes that either Suetonius was the actual author with the help (or perhaps not) of Pliny's letters; or that someone other than Suetonius wrote some of the note and someone else the rest, (404-5). Baldwin concludes that the *Vita* is more or less useless—'at best incompetent, at worst inane, in terms of both content and omissions', (405).

Now, since the only direct statement that Pliny held more than one procuratorship comes from this biographical notice, it is important that one try to assess the worth of its evidence. Baldwin's first point is demonstrably mistaken: *Vita* does not 'paraphrase' Pliny's letter at all. Pliny makes no mention here of his uncle's birthplace; 'cum praefectus alae militaret' appears in 3.5.3 and is the only mention of his career in the cavalry; 'cum procuraret in Hispania' (3.5.17) is the only reference to a procuratorship; and that leaves *Vita*'s 'liberalibus studiis tantam operam dedit, ut non temere quis plura in otio scripserit' to serve as a possible précis of Pliny 'miraris quod tot volumina multaque in his tam scrupulosa homo occupatus absolverit?' (3.5.7), followed by mentions of the Elder's time as a lawyer, age at death, very important jobs, and *amicitia principum*. Clearly there is no paraphrase of this.

Since, then, the *Vita* does not begin with a paraphrase of Pliny the Younger, its 'selectiveness' cannot be held against it unless one knows (a) whether it actually does represent a selection of facts from a longer work,

¹ Suetonius, 400-5. Bracketed numbers in the following text will refer to this work.

and (b) what that longer work was. Baldwin considers the former point and comes to the conclusion that 'there is no warrant for . . . seeking abridgement and epitome' pointing to the equally short notices to be found in the *Vitae Sophistarum* of Philostratus and Eunapius as illustrations of his point (*Suetonius*, 384). This is true, up to a point. Philostratus's very short notices can consist of no more than a few words—Carneades (*VS* 1.4 = 24 words), Theomnetus (*VS* 1.6 = 15 words)—but these do not purport to be biographical pieces. Rather, they consist of one or two remarks about the sophist's particular trait. When Philostratus does record biographical detail, his notices tend to be longer; for example, Dio Cassius (*VS* 1.7) = 431 words. Compare this with the 'Suetonian' *Vita* of Pliny = 92 words. Eunapius, on the other hand, does give brief biographical summaries in the manner of the *Vita*: for example, Epiphanius (493) = 90 words and Himerius (494) = 88 words. Moreover, Suetonius himself wrote short notices on several authors—Tibullus, for example, (50 words) and Passienus Crispus (115), as well as the rhetoricians Lucius Plotus (59) and Marcus Epidius (69). It is therefore possible to see the *Vita* as a complete, though brief, notice.

Secondly, Baldwin is uneasy about the lack of a full bibliography in the *Vita*. Now, Pliny's brief notes on the javelin and on Pomponius Secundus were slight; *Studiosus*, perhaps better done by Cicero and Quintilian; and *Dubii Sermonis Octo*, which Pliny the Younger seems to hint was not particularly inspired,¹ may not have been regarded as a major work: and *A fine Aufidi Bassi triginta unus*, as Pliny himself points out, was not made public during his own life-time and perhaps never did become available to more than a select few.² So it may be that Pliny's public reputation as a scholar actually rested upon the two works mentioned here, the *Bella Germanorum* and the *Naturalis Historia*. Again, there is no reason to suppose, as Baldwin wishes, that the *Vita* text is copying Pliny's letter. The wording is quite different, not 'almost identical' (402), although it is true that 'libros absolvit' (*Vita*) may owe something to 'volumina absolvit' (Pliny), because the other examples of its usage in *TLL* and *OLD*, with the exception of Cicero, *Ad Atticum* 15.21.2 = SB 398, are not concerned with literature.

¹ 'Scripsit sub Nerone novissimis annis, cum omne studiorum genus paulo liberius et erectius periculosum servitus fecisset', *Ep.* 3.5.5.

² See Townend, *Hermes*, 108 (1980), 241.

Still, it may be significant that the works on oratory are omitted. Even St Jerome, who put Pliny under the Emperor Trajan, called him 'orator et historicus insignis', although his other references are all to the *NH* and especially to Book 37. It is difficult to tell whether St Jerome had actually read Pliny or not, but even if he picked up his knowledge of Pliny from elsewhere, it is interesting that 'orator' should still be one of Pliny's attributed titles.¹ One might argue, however, that the *Vita's* mention of Pliny's 'liberalia studia' covers the topic, and that his inclusion as an historian removes the necessity to mention his works on public speaking. Once again, therefore, there is no real evidence that the *Vita* is an epitome, although there is no real evidence that it is not. In consequence, we cannot adduce arguments which will lean upon one side or the other.

So now we come to Baldwin's final point, differences between the two accounts of Pliny's death. These, as I have said, boil down to three:

<i>Vita</i>	Pliny the Younger
1) 'Pliny set out in a <i>liburnica</i> '. (403)	1) 'According to the nephew, it was a quadrireme', (403).

¹ The full biographical notice runs, 'Plinius Secundus Novocomensis orator et historicus insignis habetur, cuius plurima ingenii opera exstant. Perit dum visit Vesuvium', *Chronologia* 2 = Migne, PL 28.464. Jerome's other references are (a) *Adversus Jovinianum* 2 = Migne, PL 23.306 wherein Pliny is linked with Dioscorides as a *physicus* and *medicus*; (b) *Commentarius in Isaiam* = Migne, PL 25.543 wherein he is called an *orator* and *philosophus*; (c) *Commentarius in Ezechielem* = Migne, PL 29.284 which refers particularly to the *NH*. The word 'plurima' is striking. Seven works can hardly be so described. One must suppose that either Jerome was confounding Pliny the Elder and the Younger and adding together the works of both, (although this would still be hardly sufficient to warrant 'plurima'), or that he was thinking of the 102 individual volumes of Pliny the Elder's corpus. 'Orator', too, is an odd word to apply to Pliny the Elder, who was not famous as a public speaker. Once again, it is possible that Jerome has confused him with the nephew, (although even he does not merit the word 'insignis' as an orator), or—perhaps more likely—Jerome was aware of Pliny's *Studiosi tres*, (he does, after all, say that Pliny's numerous works were still extant) and assumed that someone who had written on the subject must also have been an outstanding practitioner. If this were the case, one can see why Jerome calls him 'orator et historicus'. Between them, the *Studiosus* and the *Histories* account for over half of Pliny's total production.

2) 'Pliny's sole motive for embarking on his fatal mission was scientific curiosity', (403).	2) 'The nephew . . . writes pointedly, "vertit ille consilium et quod studioso animo incohaverat obit maximo" [Ep. 6.16.9]', (403).
3) [<i>Vita</i> revives] the theory that Pliny may have ordered one of his slaves to kill him', (403).	3) 'The nephew . . . implicitly denies the story, "corpus inventum integrum inlaesum opertumque ut fuerat indutus" [Ep. 6.16.20]', (403-4).
Figure 1	

On the first point, Baldwin is being unnecessarily critical. Pliny the Younger says that at first his uncle 'iubet liburnicam aptari' (Ep. 6.16.7), but then in answer to the fears of a local woman, 'vertit ille consilium et . . . deducit quadriremes [et] ascendit ipse' (*Ibid.* 9). Now, it is true, of course, that the *Vita* does not give as many details as the nephew's account but its brevity should not cause us to conclude that the author must have set out to mislead his readers. There is not really any significant difference between the two accounts here.¹ Nor is Baldwin's second point any more valid even though, once more, the *Vita* is less complete than Pliny's letter: 'ad explorandas propius causas liburnica pertendisset', (*Vita*); 'magnum propiusque noscendum ut eruditissimo viro visum' (Ep. 6.16.7). It was only the fears of the woman Rectina which made him change his plan and set out in a quadrireme with a view to launching a rescue operation. Hence his nephew's observation, 'quod studioso animo incohaverat obit maximo'.²

So far, then, the two accounts actually agree in general terms. But when we come to their version of Pliny's death, an interesting addition makes its appearance. Pliny the Younger suggests that his uncle died of natural causes. The *Vita*, too, records this, but adds, 'vel ut quidam existimant a servo suo occisus, quem aestu deficiens ut necem sibi maturaret oraverat'. This addition prompts one or two questions. Is it

¹ On the *liburna* (= *liburnica*), see Starr: *Roman Imperial Navy*, 54.

² The reference to Rectina is actually a *locus desperatus*, and there have been attempts, not on the whole well-received, to explain it as the name of a place rather than of a person. See two reviews, (a) anonymous on Donna: 'La lettera di Plinio sulla eruzione vesuviana', *Bulletin d'Institut historique belge de Rome* 18 (1937), 263-4; (b) Syme on Spadaccini: 'Una vittima minore dell'eruzione vesuviana del 79 AD', *CR* 51 (1937), 202. See also D'Arms: *Romans on the Bay of Naples*, 222-3.

true? Does it matter? What does each account of Pliny's death lead us to think about the nature of its biographical material?

There have been many attempts to explain Pliny's death in medical terms, generally revolving around suffocation, inhalation of toxic fumes, or cardiac arrest.¹ None can be proved or disproved. Suicide, on the other hand, was not as frequent an occurrence among the Romans as people may imagine, and seems to have been limited, on the whole, to the upper classes or those in particularly desperate circumstances. Gris , who has made a study of suicide in ancient Rome, comes to the conclusion that, 'si l'on consid re l'ensemble de l'histoire romaine, on arrive   la conclusion que le suicide a  t  v cu, en d finitive, comme une solution exceptionnelle devant des probl mes "exceptionnels"'.² Seneca, who looked at the question of suicide more than once, observed that there are circumstances under which suicide is justified, and others under which it is not. Among the former, he gave (i) lack of the bare necessities of life, (ii) infirmity caused by age, (iii) incurable disease, (iv) insanity, (v) tyranny of a despot from which there is no escape. Among the latter, he included (i) boredom with life, (ii) fear of death, (iii) lust for death, (iv) curable illness, (v) whenever, in spite of sound reasons for committing suicide, the needs of friends and relatives require one's continuing to live.³ Pliny himself seems to have regarded suicide as a most honourable gift, denied to the gods themselves 'ne deum quidem posse omnia—namque nec sibi potest mortem consciscere, si velit, quod homini dedit optimum in tantis vit e

1 The literature is quite large, but see the following which are adequate representatives of the whole. Lipscomb, *CW* 47 (1954), 74 = suffocation. Starkenstein, *Archiv f r Geschichte der Medizin* 22 (1929), 208 = toxic gas. Cf., *Encyclop dia Britannica* 11th ed. s.v. 'Vesuvius'. Bigelow, *Memoirs of the American Academy of Arts and Sciences* 6 (1858), 223-7 = heart attack. Cf., Zirkle, *Isis* 58 (1967), 553-9 which gives a very useful survey of earlier explanations. The latest account, Grmek: *Helmantica* 37 (1986), 27-43, comes down also in favour of cardiac arrest. Attempts to show that a skull or skeleton from the neighbourhood of Stabi  belong to Pliny have met with no acceptance. See two reviews of Cannizzaro: *Il cranio di Plinio*, in (a) *Revue d'histoire et de la litt rature* 52 (1901), 402-4, and (b) *English Historical Review* 17 (1902), 191. On the skeleton, see H ron de Villefosse, *Bulletin Monumental* 66 (1902), 82-4.

2 *La suicide dans la Rome antique*, 53-7. The quotation comes from p. 57.

3 This is taken from Motto: *Guide to the Thought of L. A. Seneca*, 207 s.v. 'Suicide', where full references are also given. See also Griffin: *Seneca*, Chapter 11.

poenis' (*NH* 2.27), and his nephew, too, clearly, did not object to suicide as a means of dying, since on more than one occasion he praises those who have taken their own lives.¹

All the suicides mentioned by Pliny the Younger fall pretty well into the categories mapped by Seneca, so how would Pliny the Elder's suicide—assuming for the moment that that story was true—fit those motives? We can dismiss lack of the bare necessities of life, insanity, tyranny, boredom, and lust for death. There is no indication that he was suffering from incurable illness—Pliny the Younger's examples refer to tumours which would be self-evident—and he does not seem to have been afraid of death, either, since 'properat illuc unde alii fugiunt', (*Ep.* 6.16.10) and 'rectum cursum recta gubernacula in periculum tenet adeo solutus metu', (*Ibid.*).² Was he infirm through age? Apparently not. Did he suffer from curable disease? Again, there seems to be no available evidence. He was overweight, which caused him to breathe heavily and audibly when asleep (*Ep.* 6.16.13) and he was frequently troubled by inflammation of the larynx (*Ibid.* 19). But neither is recorded as being in any way connected with pain or wish for death, and in consequence we must rule them out as a motive for suicide.

Whether or not Pliny did commit suicide, however, gossip to that effect began, and we must conclude that his nephew's letter is therefore doing one of two things: either it does not mention suicide because the nephew was not aware of such a story and reported his uncle's death as it was reported to him, presumably by one or other of those who accompanied him to the shore, 'duo servoli' (*Ep.* 6.16.19), in which case we must assume that he was telling the story in good faith—'verius', as he puts it himself (*Ep.* 6.16.1); or he was phrasing his letter in such a way as to make it an implicit rebuttal of that rumour which he found distasteful, or dishonourable to his uncle's memory, or just plain untrue. Should this be the case, it seems likely that Seneca's reproach against those who kill themselves even though their friends and relatives need them to live,

¹ *Ep.* 1.12 (unbearable pain of disease); 3.7 (incurable disease); 3.16 (noble example of a wife to a timid husband, escape from a despot); 6.24 (incurable disease). I owe these quotations and references to Gris , *La suicide dans la Rome antique*, 230-1. See also Pliny, 'vitam quidem non adeo expetendam censemus ut quoque modo trahenda sit', *NH* 28.9.

² Cf., 'complectitur trepidantem consolatur hortatur, utque timorem eius sua securitate leniret . . . aut hilaris aut (quod æque magnum) similis hilari', *Ep.* 6.16.12.

could qualify as the sting in the tail of the gossip, for we appear to have eliminated to a greater or lesser extent the other motives, honourable and dishonourable, which Seneca puts forward, and only lack of an overtly honourable motive on Pliny's part would have required the nephew to answer the suicide tale, however circumspectly.

Choosing between these two possibilities is difficult. Several commentators have assumed that Pliny the Younger is not telling the truth about the episode which led to his uncle's death. The most influential was Hayward who discussed what he saw as the problems and summed up his article thus: '1) we do not know why [Pliny the Elder] went to Stabiæ; 2) we do not know what became of the vessel which brought him, or of the other vessels with which he started out; 3) we do not know why he personally took no part in the rescue work, or whether there was any rescue work; 4) we do not know what killed him'.¹ So he comes to the conclusion, 'For [the letter's] success in giving a false impression without (apparently) telling any lies it deserves to be ranked with the most misleading parts of Tacitus's work . . . Pliny gives us facts, as far as we can tell, but on examination he appears to suppress other facts . . . It is a highly tendentious piece of work'.²

To this one may reply, why should Pliny the Younger have been interested in details and motives not directly relevant to his uncle's death? Points 1) and 2) may interest a twentieth century historian, but it was not for him that Pliny the Younger was writing. Point 3) implicitly reproaches the elder Pliny for apparent lack of humanitarian feelings during the eruption, but the younger Pliny makes it clear that such feelings did actuate his behaviour after the woman Rectina appealed to him for help.³ As for point 4) we know either that he died 'crassiore caligine spiritu obstructo' = Pliny, or that 'a servo suo occisus' = *Vita*. It is true that we cannot describe the former in unassailable medical terminology, but Pliny

¹ CW 46 (November 1952), 1-3. The quotation comes from p. 3. Cf., Grisé: *REL* 58 (1980), 338-40. Van Hooff: *From Autothanasia to Suicide*, 224, who mentions suicide as a possibility in Pliny's case, and puts it down to 'inpatientia'.

² *Op. cit.*, 3. Cf., CW 68 (1974-5), 259. Cf., Traub: *TAPhA* 86 (1955): 229-31.

³ 'Vertit ille consilium et quod studiosi animo incohaverat obit maximo . . . ascendit ipse non Rectinæ modo sed multis . . . laturus auxilium', *Ep.* 6.16.9.

was writing as an historian, not as a doctor, and why should he supply details irrelevant to his purpose?

What was that purpose? Grisé expresses the general opinion when she says, 'dans ces pages historiques, Pline le Jeune brosse le portrait idéalisé d'un homme qui, exempt de panique au sein de l'impulsion collective, a su triompher des circonstances extérieures'.¹ Praise of the dead is not incompatible with telling the truth. The fact of the matter is, we have two versions of Pliny's death and have no reason to suppose that either source was not telling the truth as he knew and believed it: and, frankly, the *Vita's* mention of suicide, carefully honest though it may be, has the unfortunate result of raising problems rather than solving them. If Pliny knew about the story, does that mean he constructed his letter in such a way as to offer an implicit denial of it, as Sherwin-White seems to suggest in his note *ad Ep.* 6.16.20? If he did not know about it, how did it come that the author of the *Vita* apparently knew something unknown to Pliny's heir and nearest relative? Is Pliny suppressing the truth, or is the *Vita* adding an untruth? If the latter, what would be its motive? None of these questions is answerable.

Thus, we are left with what we have—two accounts of aspects of Pliny's life, both short, both full of *lacunae*, both seemingly reliable. It is possible that the nephew may have doctored his account of the Elder's death a little but there is no reason to suppose that this, if it happened, affected his account of the earlier details of his uncle's life. It is possible that the *Vita* has recorded malicious gossip about the same event, but again, if that is the case, there is no reason to suppose that its earlier details are affected or rendered untrustworthy.

Conclusions

As far as one can tell, then, both the *Letters* and the *Vita* are in broad agreement about Pliny's life and career as far as their separate intentions go, and provide reliable information as the basis for some sort of biographical notice. In view of the brevity of the *Vita* one must bear in mind the possibility that it has been abridged from a fuller, longer account; but as it is also possible that the *Vita* as we have it is actually complete, no

1

REL 58 (1980), 341-2.

worthwhile speculation can be predicated on supposed omissions or contractions.

(iv) Civilian Life Before Military Service

We know from Pliny the Younger (*Ep.* 3.5.4 and 17) that Pliny had a military career and then went on to procuratorial office. Is there any evidence to suggest that he had, or may have had, a civilian career before entering the army; or are we to suppose that he joined up soon after obtaining his *toga virilis* in c. 38/39?

In 1976-77, H. Devijver published *Prosopographia Militiarum Equestrium quæ fuerunt ab Augusto ad Gallienum*, (henceforth *PME*). This records the pre-military civil, the military, and the post-military civil careers of such equestrians whose names and details have survived. The information is by no means complete for every individual, but one could hardly expect it to be so. Apart from the ravages committed by time, the nature of the various inscriptions is different. Some are intended to be memorial monuments and these can be expected to set out biographical details which may well cover the man's civil and military career more or less in full. Others are incidental, set up perhaps as a votive tablet when a man held the post of *præfectus cohortis* or *præfectus alæ* which is duly recorded, but without any need to record any further details, or any intention of doing so. Some information comes from a passing reference in literature and the amount of detail is thus governed by the context and the author's intention in referring to the post or posts, such, indeed, being the nature of our information about Pliny the Elder's military and civil career. In consequence, the evidence of *PME* must be treated with caution, but so treated it can yield material pertinent to the question, was it customary for a man to hold either one public office in civil life or a number of such offices before entering upon his military career?

The careers of 1666 men are given in *PME*.¹ If we collect those whose careers fell between the reigns of Augustus and Nero (both inclusive), we find there are 299 not including Pliny. Details of these can be found in Appendix 1.

¹ These do not include careers listed under 'Ignoti-Incerti'. I have excluded all such from subsequent discussion as well.

Preliminary observations suggest two things. First, if we add (pre-military) 74 to (both) 32 = 106, and (post-military) 89 to (both) 32 = 121, we can discern a very slight suggestion that doing military service before embarking upon a civilian career was slightly less common than doing it after; but since the margin of difference is so small, one cannot insist upon it. Rather, one should say that there appears to be no strong evidence either way. Secondly, the number of mutilated inscriptions being very slightly larger in the 'post' category, any such bias we may have noticed towards that category is thereby rendered the more uncertain. In consequence, the evidence so far will not really let us say whether it was more common during this period for a man to fill civil office before or after his military service.

That being said, we should note that a large number of records mention only the man's military career. Of these, 26 are taken from literature and have no cause to go into further detail, although as it happens we do know more about two (M80 and N25) from elsewhere; and three *diplomata militaria* necessarily deal only with an ex-soldier's career. Mutilated inscriptions (depending, of course, on how and when they were mutilated) may not be giving the whole picture. The details of honorary, sepulchral, votive and dedicatory monuments depend upon the view of the person making the dedication. In the majority of the honorary and sepulchral cases, there is the possibility that the man died, whether in battle or from wounds or of natural causes, before his military service was necessarily over, and his family or freedmen or, in one or two cases, the army itself, decided to commemorate the military achievement rather than any previous civil office.¹ But, of course, we must also take into account the possibility that no previous civilian office was recorded because there was none to record, as the man had gone straight into the army, intending to embark upon a civilian career later on. However, as there are so many unresolvable questions in connection with this category, which make it unusable to support either a suggestion relating to pre-military office or one relating to post-military career, it can and will be discounted in the following discussion.

Let us now ask two questions suggested by the observation that there appears to be a balance, more or less even, between those who fill

¹ A172 (son), 199 (widow), F93 (son and grandson), G16 (*liberti*), I139 (mother), I74 (widow and son), L38 (*liberti*), M56 (sister), P83 (wife and *libertus*), S39 (*libertus*), V109 (sons). A185, F62, R17 (army).

offices in civilian life before entering the army, and those who fill them afterwards: (a) do sons of 'military families' tend to join the army at once and then take up a civilian career? (b) do sons of civil officials go in for a civilian career first and then join the army to get a necessary 'qualification' before proceeding to higher civilian office?¹ Since the antecedents of most equestrian officers are not actually known, it will be difficult to provide answers to these questions; but one or two details may suggest that the questions are pointing in the right sort of direction. We know of eight men, for example, whose careers begin *primus pilus* and then work their way through various military promotions until civilian offices are recorded. Interestingly enough, in six out of the eight cases, the subsequent offices begin with precisely those civilian appointments (*duovir*, *IVvir*) most common to men who have reached the apex of their civilian career for the moment, and then proceed into the army.² These eight, then, were professional soldiers (who may or may not have come from a 'military family') who had decided at what could have been quite an early age³ to make the army their principal career and take up civilian appointments only after they had retired from it. Such men, however, are hardly in the same case as Pliny, who was in a position to postpone,

1 Birley: 'Promotion from one grade [in the army] to another was influenced by the confidential reports submitted to *ab epistulis* in Rome, who would be guided by them in picking officers for further employment in the upper grades of the administrative service, and in general those men who distinguished themselves most in military appointments had the best chance of winning distinction and promotion in that [i.e., the administrative] service', *The Roman Army*, 162. Cf., *Ibid.*, 104.

2 A201: 'duovir, flamen Augustalis'. F24: 'IVvir iure dicundo'. I13: 'duovir bis, flamen'. M38: 'pontifex'. M76: 'duovir quinquennalis'. P8: 'augur, flamen'. P116: 'IVvir quinquennalis'. V66: 'duovir iterum, pontifex'.

3 Recruiting figures for Hispanic legions during the first century AD show that a total of 36 recruits yields an average age of just over 21. I have omitted three figures which are dubious. The lowest age given is 14 and the highest 29. See Le Roux: *L'armée romaine*, 259-61. If most of these had received the *toga virilis* at c. 16, it raises the question, what did they do for the next five years? The answer is, we do not know; but five years is long enough to decide that one does not like, or one is not successful at, the civilian job one is holding and that the army offers better prospects. Those eight professional soldiers who went forward to civilian office afterwards were, then, probably in their late thirties or early forties. There is, however, disagreement about the average recruiting age. Sixteen has been urged, as well as twenty. See Harmand: *L'armée et le soldat à Rome*, 258-9.

should he wish, entry upon *militiæ* which, for him, would be desirable qualifications for further civilian office rather than a career in themselves.

Secondly, we may note the kind of civilian posts most commonly filled before and after military experience. Numbers filling the various offices are as follows:

Civilian offices before a military career

<i>duovir</i>	31	<i>ædile</i>	9
<i>IVvir</i>	24	<i>pontifex</i>	8
<i>præfectus fabrum</i>	16	<i>quæstor</i>	4
<i>flamen</i>	12	<i>augur</i>	3
<i>sacerdos, iudex, decurio, censor,</i> <i>præfectus sacrorum</i>	2		

Figure 2

Civilian offices after a military career¹

<i>duovir</i>	23	<i>pontifex</i>	7
<i>ædile</i>	17	<i>curator</i>	4
<i>IVvir</i>	14	<i>præfectus</i>	3
<i>quæstor</i>	13	<i>sevir</i>	3
<i>flamen</i>	10	<i>trevir</i>	2
<i>augur</i>	7		

Figure 3

¹ This does not include *præfectus fabrum* which could be a military as well as a civilian post. The former was a senior army post (see Holder: *Auxilia*, 73) and therefore I have assumed that if it occurs in *PME* before a man's military details, it probably refers to a civilian post, but if it appears after them, one cannot be sure it is not a military appointment. Since, in the above examples, it always occurs at the end of the army list and before the civilian list begins with recognisably civilian offices, I have assumed it is a military post and therefore omitted it. Nor have I included any reference to procuratorships, since these were too exalted to be held before military service. The range of post-military offices is greater than that of pre-military, but one need hardly be surprised. Mature men who have finished a military career may well have somewhat more to offer than those younger men who have known little beyond civilian office, although I suppose it could always be argued that that would depend on what one wanted them to do.

By and large, it does seem as though one is looking at a situation in which a man could exercise choice of holding civilian posts (particularly *duovir* or *IVvir*) first and then going into the army, or of going into the army and afterwards seeking to fill pretty well the same general range of civilian offices. The minimum age at which one might become *duovir* or *ædile* was thirty, although by the end of the first century it had dropped to twenty-five.¹ In Pliny's time, however, it is more likely to have been still at the upper range of the age-requirement.²

Now Pliny the Younger gives us reason to think that his uncle did indeed practise law in his early life. 'Magis miraberis', he says, 'si scieris illum aliquamdiu causas actitasse', (*Ep.* 3.5.7). 'Aliquamdiu' implies that Pliny the Elder did this for quite a long time. It should also be noted that the nephew's chronological account of his uncle's literary works comes to an end in section 6 and that section 7 is composed of general comments about his career. There is therefore no call to assume that the period at the bar must have come in the later years of Pliny's life.³

¹ Liebenam in *PW* 5.1807-8. Holder: *Auxilia*, 72. See also Birley: *Army*, 151-2. Webster, *The Roman Imperial Army*, 147. See also Kübler on *decurio* in *PW* 4. 2328. On the ages, see further Levick: *Government of the Roman Empire*, source 26, paragraph 54. 'Quattuorviri', in *municipia* at least, referred to a four-man board, consisting of two *ædiles* and two *IIviri iure dicundo*. See *CIL* 12. 590 = Lewis-Reinhold, *Roman Civilisation* 1.447. In consequence, we must infer that the age-limit of thirty or twenty-five should be taken into account here, as well, in at least some cases if not in all.

² The younger Pliny had been *decemvir stlitibus iudicandis* and had practised at law before going on to fulfil purely administrative posts in the army at about the age of twenty or twenty-one. His case is thus somewhat unusual—but then, he was able to benefit from his uncle's acquisition of powerful friends—and so does not help in assessing the elder Pliny's genuinely military career a generation earlier.

³ Sherwin-White, for example, notes the implication that the legal activity took place in Pliny's youth (*Letters*, p. 219). Kroll says that we cannot be sure whether it was early or Neronian (*PW* 21. 273). Syme (*RP* 2) makes no comment. Pliny the Younger also seems to imply that his uncle was very busy at that time. 'Actito', rather than the more usual 'oro' or 'ago', is an uncommon verb, found here and in Cicero: *Brutus* 246, Martial 1.171, and in Suetonius: *Galba* 3, (references taken from the *TLL*). One presumes Pliny chose it to add to his over-all portrait of a man who worked extremely hard all his life. Later examples are (i) Paulus in *Digest* 22.4.3; (ii) Ammianus 28.1.17; (iii) Sidonius: *Ep.* 1.9.1; (iv) Cassiodorus 6.23.4; (v) Cassiodorus 7.41.2; (vi) *Codex Iustiniani* 6.4.3 (*praef.*).

Conclusions

(a) The evidence about pre- and post- military civilian careers between Augustus and Nero does not allow us to say that one was a more common course of action than the other. Figures supporting both are more or less in balance.

(b) The evidence does allow us to suggest, however, that it may have been as acceptable to start pursuing a civilian career after military service as before it. But doing so, of course, is likely to have entailed certain consequences. A man who gained a certain level of civilian administrative experience before the army was in a somewhat better position to hope for rapid promotion after it than a man who was either expected or felt he had to gain that type of experience after his military career was over.

(c) It is also possible that previous family history influenced a young man's decision about what career to follow first.

(d) Since the extant evidence about Pliny's military (and, to a certain extent, civilian) career is fairly slight, one cannot be sure which path he chose first.

(e) Nevertheless, since the available evidence from *PME* does let us propose two options, neither of which seems definitely to take precedence over the other, one must allow that Pliny could as well have had a civilian career before going into the army as after his retirement therefrom. This possibility has been largely ignored by all attempts so far made to reconstruct Pliny's biography.

(v) Career (ii): Military Service

The traditional assumption, based upon Münzer's key article of 1899,¹ is that (a) in 47 Pliny was in Germania Inferior; (b) in 50-51 he was in Germania Superior and (c) in 57 he was back in Germania Inferior. Thus Münzer concluded that Pliny was part of Domitius Corbulo's expedition against the Chauci (pp. 73 and 107), and that he was *contubernalis* with Titus in Germania Inferior as an officer in the Rhine army (pp. 82-3 and 106-7). If, however, he had a pre-military career and if he filled the most commonly held post of *duovir*—two conditionals, certainly, but one must

¹ 'Die Quelle des Tacitus für die Germanienkriege', *Bonner Jahrbücher* 104 (1899), 67-111. The pages in the text here are Münzer's.

make allowance for the possibilities—then he would not have entered upon his military career until the age of twenty-eight at the earliest or, as I think more likely, until he was thirty-one. In such a case, the traditional dating will not stand and we should be looking at a military experience beginning somewhere between 49/50 and 54/55, depending on his age. This in turn, of course, would mean that Pliny could not have been associated with certain events traditionally ascribed to his biography. Clearly, then, it is worthwhile taking a closer look at the widely accepted sequence of dates and events, to see how firmly based is this version of his military life, and whether there is any evidence to suggest (or, at least, not to contradict) an alternative suggestion.

I shall set out my discussion under the following headings: (i) a review of Münzer's evidence, (ii) guide-lines for further discussion of the evidence, (iii) *Germania Inferior*, (iv) the German campaigns of c. 47 and 58, (v) *Germania Superior*, (vi) Pomponius Secundus, (vii) *contubernium*, (viii) the regular military *cursus*, (ix) conclusions.

(i) Münzer's evidence

Münzer based his conclusions largely on twenty-four passages of the *NH*. These I shall now set out in numerical order.¹

- | | |
|----------|--|
| 4.99 | [Geography of the Danube] |
| 4.99-101 | [There are five Germanic races (named): rivers: mountains: the Rhine and its islands]. |
| | 'In Rheno autem ipso, prope \bar{C} in longitudinem, nobilissima Batavorum insula et Cannenefatium et aliæ Frisiorum, Chaucorum, Frisiavonum, Sturiorum, Marsaciorum, quæ sternuntur inter Helinium ac Flevum. Ita appellantur ostia in quæ effusus Rhenus a septentrione in lacus, ab occidente in amnem Mosam se spargit, medio inter hæc ore modicum nomini suo custodiens alveum.' |
| 4.122 | [Alps—NW through Legions' Camp in Germania—mouth of the Rhine = 1243 miles.] |
| 8.38 | [Germania produces few wild animals except wild oxen, bison, and aurochs.] |

¹ Where the Latin is too long to quote in full I summarise in English. Otherwise, I give Pliny's text with certain significant words in capitals.

- 10.53-4 [Plumage/down from Germanic geese: bird, German name, price: officers commanding *auxilia* sometimes send whole cohorts to capture these birds.]
- 10.72 'In Germania hieme maxime turdi cernuntur'.¹
- 10.132 In Hercynio Germaniæ saltu invisitata genera alitum ACCEPIMUS quarum plumæ ignium modo conluceant noctibus'.
- 11.33 'aliubi enim favi cera spectabiles gignuntur, ut in Sicilia ... aliubi magnitudine, ut in septentrionalibus, VISO iam in Germania octo pedum longitudinis FAVO in cava parte nigro'.²
- 11.55 '[Apes] sedere in castris Drusi imperatoris cum prosperrime pugnatum apud Arbalonem est'.³
- 12.98 '[Daphnis casia]. Quin et in nostro orbe seritur, extremoque in margine imperii, qua Rhenus adluit, VIDI in alvariis apium satam; color abest ille torridus sole, et ob id simul idem odor'.
- 16.2-4 'Sunt vero et in septentrione [gentes] VISÆ NOBIS Chaucorum qui maiores minoresque appellantur. Vasto ibi meatu bis dierum noctiumque singularum intervallis effusus in inensum agitur oceanus, operiens æternam rerum naturæ controversiam dubiamque terræ [sit] an partem maris. Illic, misera gens, tumulos optinent altos aut tribunalia exstructa manibus ad experimenta altissimi æstus, casis ita inpositis navigantibus similes, cum integant aquæ circumdata, naufragis vero, cum recesserint, fugientesque cum mari pisces circa tuguria venantur, non pecudem his habere, non lacte ali, ut finitimis, ne cum feris quidem dimicare contingit omni procul abacto frutice. Ulva et palustri iunco funes nectunt ad prætexenda piscibus retia captumque manibus lutum ventis magis quam sole siccantes terra cibos et rigentia septentrione viscera sua urunt. Potus non nisi ex imbre servato scrobibus in vestibulo domus'.
- 16.203 'Germaniæ prædones singulis arboribus cavatis navigant, quarum quædam et XXX homines ferunt.
- 17.47 'Ubios gentium solos NOVIMUS qui ...' [There follows a short description of the top-soil practice which they employed. The Ubii were to be found on the left bank of the Rhine in Germania Inferior.]
- 18.149 'Quippe cum Germaniæ populi serant eam [i.e., oats] neque alia pulte vivant'.

1 Münzer claims that this is an example of Pliny's autopsy, BJ 78 note

3.

2 Again Münzer says this was autopsy, *loc. cit., supra*.

3 As the Budé note *ad locum* says, the exact location is not known. Dio Cassius (54.33.2), however, who also reports the incident, gives us sufficient detail to be able to suggest that it was in Cheruscan territory, not far from the River Weser. See further Gutenbrunner in PW 9A¹.366.

- 19.8-9 [All the Gallic provinces weave sail-cloth.] 'Iam quidem et transrhenani hostes, nec pulchriorem aliam vestem eorum feminæ novere ...' [A piece of information attributed to Varro.] ... 'In Germania autem defossæ atque sub terra id opus agunt'.
- 19.90 [re *siser*] 'Gedulba appellatur castellum Rheno inpositum ubi generositas præcipua, ex quo apparet frigidis locis convenire'.
- 19.145 [Asparagus] 'Refertis superioris Germaniæ campis, non inficeto Ti. Cæsaris dicto herbam ibi quandam nasci simillimam asparago'.
- 22.8 [In olden times, the conquered used to present grass to their conquerors,] 'quem morem etiam nunc durare apud Germanos SCIO'.
- 25.21 [The plant britannica] 'Frisi gens tum fida, in qua castra erant, monstravere illam. Mirorque nominis causam, nisi forte confines oceano Britanniae veluti propinqua dicavere'.
- 28.191 [Soap is of two kinds, thick and liquid,] 'uterque apud Germanos maiore in usu viris quam feminis'.
- 31.20 'Sunt et Mattiaci in Germania fontes calidi trans Rhenum, quorum haustus triduo fervet, circa margines vero pumicem faciunt aquæ'.
- 34.2 'FERUNT nuper etiam in Germania provincia repertum', [i.e., copper].
- 37.42-3 [Amber is called *glæsum* by the Germani ... They convey it mainly into Pannonia].
- 37.45 'DC M.p. fere a Carnunto Pannoniæ abesse litus id Germaniæ, ex quo invehitur, percognitum nuper'.

(ii) Guide-lines

Now, it is clear that some kind of distinction must be made between these pieces of information. We may think we detect both hearsay and visual evidence among them, but there are questions to be asked before anything can be accepted as undoubted proof of Pliny's personal acquaintance with Germania or any specific locality therein. For example, *accepimus* (10.132): is that an editorial 'we', meaning 'I', or a general 'we', meaning 'other people and I', or does it stand for 'we, the Roman people in general'? *Vidi* (12.98) certainly refers to Pliny, but what of *visæ nobis* (16.2)? Is *scio* (22.8) to be regarded as implying *vidi*, as some commentators have done? Does *ferunt* (34.2) indicate information derived from listening or from reading?

Guide-lines, then, are needed for interpretation, and I propose to make use of the following:

- (i) Claims of autopsy, the surest way of knowing where Pliny was, and perhaps also when he was there;

- (ii) personal statement, formulæ other than *vidi/vidimus*, such as that in 25.18, 'in eadem provincia cognovi, etc', when *provincia* can clearly be identified as here = *Lacetania*;
- (iii) claims of personal knowledge introduced by such words as *scio*, *scimus*, *novi*, *novimus*;¹
- (iv) others mention Pliny's presence;
- (v) inference.

If we now apply these guide-lines to the evidence on Germania, the strength or weakness of Münzer's interpretation should start to become clear; for the sake of clarity, the map of the relevant area (Map 1) should be consulted herewith.

- (i) Claims of autopsy. There are only two examples of this, 12.98 (*vidi*) and 16.2 (*gentes ... visæ nobis*). The latter almost certainly refers to Pliny himself, as it follows an editorial *diximus* in the first part of the sentence, and it would be asking too much of the hearer/reader to switch from we = I to we = we in the space of fewer than twenty words. The first passage must refer to Germania Inferior, to an area not far away from the territory of the Batavi, since Pliny describes it as being 'extremo in margine imperii, qua Rhenus adluit'. The second, as the Budé note *ad locum* points out, can refer only to those Chauca living in the far north, on the edge of the sea-coast.
- (ii) Personal statement. Nowhere does Pliny use a formula other than part of *videre* to indicate that he was in a particular area of Germania on a particular occasion.
- (iii) Claim of personal knowledge. There are two possible examples in the *NH*, 17.47 and 22.8. In the first, Pliny says that the Ubii are the only people 'we know' (*novimus*) who enrich already fertile land by digging up earth from three feet under the ground and spreading that as topsoil one foot thick. The context is not very helpful. He has been discussing the use of

¹ This, as I have indicated, raises problems. What does Pliny mean or wish to imply by 'novi' or 'scio'? That he was present and is therefore imparting information gained by first-hand experience: or that he has found out the information at second-hand, from a book or conversation, and is writing to pass it on as true because he has no reason to think it may not be true?

marls as manure, and between sections 45 and 49 mentions Britannia, Gallia, the Ubii, Ædui, Pictones, Transpadani, and Gallia Narbonensis. In other words, he is drawing examples of usage from areas coming progressively southwards, and the Ubii are included because of their peculiar practice.

Pliny's use of *novimus* here raises the question of whether he is making a claim to knowledge drawn from personal experience (descriptive) or to knowledge gained from sources other than his own experience (acquisitive). His first person plural causes a small initial difficulty. In the *NH* as a whole, it means 'I' far more often than it means 'we', as can be shown by means of quite literally hundreds of examples.¹ *Novimus*, however, is different. Not only is it rare in Pliny, appearing only five times in the *NH*, the contexts of the other four examples clearly suggest that a genuine first person plural interpretation is required, 'we Romans'.² So although we must allow it is possible that Pliny had personal knowledge of the Ubii, it is also possible—and the slight weight of evidence suggests that this is the interpretation to be preferred—that he means the Romans knew about Ubian agricultural practices because someone had observed them and recorded them in a book, the 'we' of *novimus* referring to the plurality of Roman readers of whom Pliny here may count himself one. In consequence, I am loath to take 17.47 as firm evidence of Pliny's presence at any time in or near Ubian territory.³

¹ A glance at Appendix 2 is sufficient to illustrate the point. Of the 389 examples listed therein, each clearly referring to Pliny himself, 332 use the first person plural = 85% of the total.

² The other examples of *novimus* are: (a), 10.6 'ex his [avibus] quas novimus aquilæ maximus honos, maxima et vis'; (b) 21.86, 'In Italia paucissimas [herbas sponte nascentes] novimus'; (c) 27.121, '[Pelecinos semen fert] quale git novimus'; (d) 32.143, 'Neque enim omnis Indiæ Æthiopiæque aut Scythiæ desertorumve novimus feras aut volucres'.

³ Nor is Pliny's use of the name 'Ubii' necessarily significant. We are told by Tacitus that 'Ubii... quamquam Romana colonia esse meruerint ac libentius Agrippinenses conditoris sui nomine vocentur, origine erubescunt', *Germania* 28. Now, since the date of the town's becoming a colony for veterans can be dated to 50 (Tacitus: *Annales* 12.27), should we assume that Pliny's reference to 'Ubii' rather than to 'Agrippinenses' indicates a knowledge of the settlement in 50 or beforehand? Almost certainly not. Tacitus, it is true, refers to the Ubii by their new name in *Historiæ* 4.79, but he also uses 'Ubii' in historical contexts referring to 15AD (*Annales* 1.57), 50 and 58 (*Annales* 13.57), and then 'Agrippinenses' again in 70. As late as 98, the approximate publication date of the *Germania*, he has to explain to his readers that the Ubii prefer to be called

The second passage, 22.8, presents a somewhat different problem. The custom of a defeated tribe's offering grass to its conquerors is one which Pliny says he himself knows (*scio*) still exists among the Germani in his own day (*nunc*). There can be no ambiguity about the person of *scio*, which Pliny uses fourteen times altogether in the *NH*,¹ but the usages are not so helpful.² Apart from *Præf.* 11 in which Pliny tells us that he knows Titus is approached with awe even by those who are paying their duty-calls in the morning—and his known association with Titus must suggest that here Pliny is likely to be speaking from personal experience—none of the other examples can be taken as *unequivocal* autopsy. Two, for instance, 10.35 and 10.84, almost certainly mean 'I know of'; two more, 14.38 and 27.67, can easily be translated as 'I am aware that', and *Preface* 20 as 'I am confident that'. Four passages, 18.160; 20.215; 21.152; 27.69, could derive as well from oral evidence as from Pliny's direct experience, and *Preface* 30 purports to be a quotation from Cato's *De re militari*.

'Agrippinenses', thereby leaving us to infer that they were often still called 'Ubii' instead. Pliny's use of the name, therefore, cannot be made to yield autopsy in or prior to 50, and if he took his information from a source other than autopsy, as *novimus* suggests, then he could easily have inherited and employed someone else's terminology. This is not an unknown feature of the *NH*, especially in the geographical Books.

¹ I have not included *haut scio*, *haud scio*, (or indeed, *haud scimus*) since examples of the negative sense are not necessary to establish meanings of the positive in the following discussion.

² The thirteen other examples are:

<i>Præf.</i> 11	'Te ... religiose adiri etiam a salutantibus scio'.
<i>Præf.</i> 20	'Posteris quos scio nobiscum decertaturos ...'
<i>Præf.</i> 30	'Scio ego, quæ scripta sunt si palam proferantur, multos fore qui vitilitigent', [= Cato].
10.35	'Privatorum domibus insidentem plurium scio, non fuisse feralem', [re the eagle-owl].
10.84	'Scio HS vi candidam [luscina] ... venisse quæ Agrippinæ Claudii principis coniugi dono daretur'.
14.38	'Scio e Falerno agro tralatas vocari Falernas'.
18.66	'In transpadana Italia scio vicenas quinas libras farris modios pendere'.
18.160	'Pestem ... sturnorum ... scio abigi herba cuius nomen ignotum est'.
20.215	'Prætorii viri pater est ... quem scio propter inpetibiles uvæ morbos radicem eius [<i>purslane</i>] filo suspensam e collo gerere'.
21.152	'Trifolium scio credi prævalere contra serpentium et scorpionum ictus'.
24.43	'Scio Democratem medicum', [cured a persistent illness by means of goats' milk].
27.67	'De chrysolachano nec satis dici scio nec plura reperio'.
27.69	'Curatum ea scio ... prolapsum ex arbore alta putatorem'.

Two remaining passages are also less promising than they look. 'In transpadana Italia scio vicens quinas libras farris modios pendere', (18.66) to be sure, mentions the general area in which Pliny was born, but that is hardly significant of itself, and the sentence goes on at once, 'circa Clusium et senas' which, as far as we are aware, has no bearing on Pliny's private life at all. The second mentions someone who may have been a contemporary of Pliny, the doctor Democrates who cured Considia, daughter of the ex-consul, Marcus Servilius [Nonianus], (24.43). Servilius was consul in 35 AD and died in 59¹ and Pliny tells us that 'we saw him' (*vidimus*) in the year of his consulship (37.81). If by this Pliny refers to himself, it is possible that he picked up the information about Democrates at first hand. But it is equally possible he was told about the cure by someone else—Pomponius Secundus, for example, who was highly placed in Roman society and, as we have seen, may have introduced Pliny to it at about the time of Servilius's consulship.

In view, therefore, of the uncertainty surrounding most examples of Pliny's *scio*, we cannot take for granted that 22.8 conveys a piece of Pliny's direct experience. It could as well be derived from oral evidence or reading.

(iv) Others mention Pliny's presence. Only one biographical notice says that Pliny was in Germania—his nephew's passing reference 'cum in Germania militaret', (*Ep.* 3.5.4.). The *Vita* says merely, 'militiis industrie functus'.

(v) Inference. This is the principal tool used by any of Pliny's biographers.

(iii) Germania Inferior

It is customary to write of Pliny's posting in 'Germania Superior' and 'Germania Inferior' because it is convenient to do so. But although the two districts existed *de facto* well before their formal organisation into two provinces, in Pliny's time there seems to have existed, as far as he was

¹ Consulship, Tacitus: *Annales* 6.31. Dio Cassius 58.25.2. Death, Tacitus: *Annales* 14.19. André makes him consul in 35 (Budé note *ad locum*) and in 3, (Budé note *ad* 25.87. Cf., *PW* 4.2069). Pliny's 'Democrates' is presumed by commentators to be the same as Damocrates, famous for pharmaceutical works in Greek iambic verse. Pliny acknowledges 'Democrates' as a source for Book 29 (drugs obtained from animals). On each occasion, the text has 'Dem-' and not 'Dam-'.

concerned, only a single entity 'Germania'. It is Tacitus who recognises two Germaniæ.¹

A First, then, Germania Inferior, the discussion of which will be developed in four stages, aimed at providing a picture of what the area familiar to Pliny looked like, geographically and ethnographically, in the mid first century AD.

(a) 17.47: 'Ubios gentium solos novimus qui fertilissimum agrum colentes quacumque terra infra pedes tres effossa et pedali crassitudine iniecta lætificent; sed ea non diutius annis x prodest'.

This has been taken as evidence that Pliny had been in Ubian territory,² but the evidence for this, as I have pointed out (*supra*, p. 25) depends on how one interprets *novimus*, and the way to do this is not so sufficiently clear-cut as to enable us to say confidently that Pliny had actually been there himself.

(b) 12.98: 'Quin et in nostro orbe seritur [casia Daphinidis], extremoque in margine imperii, qua Rhenus adluit, vidi in alvariis apium satam'.

Here we have one of the only two direct examples of Pliny's autopsy in Germania. The Rhine formed the northern border of the Empire and mention of its mouth allows us to situate Pliny with fair exactitude. The old Rhine and the old Meuse enclosed that area known as the *Insula Batavorum* which Pliny describes as being in the Rhine itself— 'in Rheno autem ipso, prope \bar{c} in longitudinem, nobilissima Batavorum insula et Cannenefatium' (4.101).³ His approximate position can be seen on Map 1.

(c) 16.2-6:

Sunt vero et in septentrione visæ nobis *Chaucorum*⁴ qui maiores minoresque appellantur. Vasto ibi meatu bis dierum noctiumque singularum intervallis effusus in inensum agitur oceanus, operiens æternam⁵ rerum naturæ controversiam

¹ See Raepsaet-Charlier: *Latomus* 32 (1937), 158-9. Cf., Schönberger: *JRS* 59 (1969), 154.

² E.g., Syme: *RP* 2.746.

³ See further the note *ad locum* in the König-Winkler edition.

⁴ *Chaucorum* H. Cauch- C. cauc- ll. v.

⁵ *alternam* D² D.

dubiamque¹ terræ [sit]² an partem³ maris. Illic, misera gens, tumulos optinent⁴ altos aut⁵ tribunalia exstructa manibus ad experimenta altissimi æstus, casis ita inpositis navigantibus similes, cum integant aquæ circumdata, naufragis⁶ vero, cum recesserint, fugientesque cum mari pisces circa tuguria venantur, non pecudem his habere, non lacte ali, ut finitimis, ne cum feris quidem dimicare contingit omni procul abacto⁷ frutice. Ulva et palustri iunco funes nectunt ad prætexenda piscibus retia captumque manibus lutum ventis magis quam sole siccantes terra cibos⁸ et⁹ rigentia¹⁰ septentrione viscera sua urunt. Potus¹¹ non nisi ex imbre servato scrobibus in vestibulo domus. Et hæ gentes,¹² si vincantur hodie a populo Romano, servire se dicunt! ita est profecto: multis fortuna parcit¹³ in pœnam.

(2) Aliud e silvis miraculum: totam reliquam Germaniam operiunt¹⁴ adduntque frigori umbras, altissimæ tamen haud procul supra dictis Chaucis¹⁵ circa duos præcipue lacus. litora ipsa optinent quercus maxima aviditate nascendi, suffossæque fluctibus aut propulsæ flatibus vastas complexu¹⁶ radicum insulas¹⁷ secum auferunt, atque ita libratae¹⁸ stantes navigant, ingentium ramorum armamentis sæpe territis classibus nostris, cum velut ex¹⁹ industria fluctibus agerentur in

1 dubiumque E v. a. S.

2 uncos ego [i.e., Mayhoff] posui. sitam d. situm an S. sit in *Dederich. sitne Cornelissen Mnemos. 1879 p. 298.*

3 pars *Arund. man. Dal. v.* parte in G. in parte *Müller de stilo p. 135.* parte an *Dederich.* pars an *Cornelissen.*

4 optinet D² v. a. J.

5 aut D¹GdE *Arund. v.* sub D². ut P. ceu D.

6 naufragiis dEX v. a. G.

7 abaucto DG.

8 cibo GE *Arund.* cibus d.

9 et v. set D². sed r *Arund.*

10 rigentia dv. -gantia r *Arund.*

11 potuus DGD. potuis E. potus iis G.

12 hæ gentes D²dv. accentas D¹G. -te E. accedente X. hæ terræ *Arund. man. Dal.*

13 parciore ES. partiore *Arund.* pactiore *man. Dal.*

14 operiunt D. replent B. reperiunt DGdf. referunt E *Arund. man. Dal. v. an referciunt?*

15 Chaucis H. Cauchis C. caucis dv. chausis D²GE causis D¹.

16 complexu d *Arund. v.* complexa (com- E) r.

17 insulas D²dv. in siluas D¹G. siluas EX *Arund. S.*

18 libratae Bd *Arund. v.* -ta rX.

19 ex D²D. om. rG. de v.

proras¹ stantium noctu, in opesque remedii illæ prælium navale adversus arbores inirent. 2. in eadem septentrionali plaga Hercyniæ² silvæ roborum vastitas intacta ævis³ et congenita mundo prope immortalis sorte miracula excedit. ut alia omittantur fide caritura, constat attolli colles occursantium inter se radicum repercussu aut, ubi secuta tellus non sit, arcus ad ramos usque et ipsos inter se rixantes curvari portarum patentium modo, ut turmas equitum tramittant.

According to Syme (*RP* 2.746), 'the occasion of Pliny's autopsy admits no doubt. It was the campaign of Domitius Corbulo against the Chauci in c. 47, which included naval operations (*Ann.* xi.18.1-20.1)'.¹

Doubts, however, there may be, which we shall now investigate. Syme is making two points. One is historical—Pliny's possible involvement in Corbulo's campaign, to which I shall return in section (iv), pp. 40-1; and one involves geography—Pliny's autopsy of some Chauci. Since it is essential to any understanding of theories about Pliny's German service, I shall concentrate now on the question of which Chauci Pliny saw and what territory they occupied in the two decades between the mid forties and mid sixties, the period during which any theory about Pliny's military career will put him there.

First, then, let us try to be clear about how much of 16.2-6 is autopsy. Strictly speaking, *visæ nobis* refers only to the two *gentes*, the *Maiores* and the *Minores*. (Information is lacking about the further difference between these two.) Certainly the rest of the passage reads as though it were autopsy, but one must at least maintain some small reservation about extending the autopsy beyond its grammatical place, otherwise one could argue that Pliny's description of gold-mining, for example (33.70-8) must be autopsy because it reads as though it were, whereas one is entitled only to suggest that autopsy at this point and in 16.2-6 is very likely.

Secondly, the context of the passage is important. Pliny is talking about people who live where there are no trees. He says he has already mentioned such peoples in the East, and now gives the Chauci as examples from the North. The lack of trees is stressed in section 3: 'omni procul abacto frutice'.⁴ These particular Chauci are further distinguished

1 proras G. -ra d. prospera r *Arund.* prospectu v.

2 Hercyniæ C. -ciniæ D(?). hirciniæ G. -caniæ EX. hyrcinie dv.

3 euis d. om. v. a. G.

4 Book 16, as its index on Book 1 points out, 'continentur silvestrium arborum naturæ'.

from other, neighbouring tribes by living off fish rather than milk from herds of cattle.¹ They do not hunt because there are no forests in their area. They use turf as fuel and drink only rain-water.

There are thus two, or perhaps three, groups of people here: the Greater Chauci, the Lesser Chauci, and other tribes—who may or may not belong to one or other or both of these Chaucian peoples—who inhabit a different, densely-forested area.

As far as we can tell, Pliny may have been using a mixture of autopsy and information gathered from divers sources to build his picture of the region. Among the latter may have been Agrippa's geographical commentary which provided the necessary details for a map of the Empire displayed in the Porticus Vipsania.² Pomponius Mela gives some details of the region, but although his *Chorographia* may be roughly contemporaneous with Corbulo's campaign against the Chauci in c. 47—it was published in 43 or 44—the quality of his information in general does not inspire confidence, and he says nothing specific to help us place the Chauci.³ Velleius Paterculus, publishing somewhat earlier in c. 30 AD, mentions Tiberius's subjugation of the Chauci, but gives no indication of where these were to be found, (2.106).

Later writers, (excluding Tacitus to whom we shall return), place them in the north. Ptolemy, writing in the middle of the second century, put the Greater Chauci between the Weser and the Elbe and the Lesser Chauci to the west of the Weser.⁴ Dio Cassius, writing very much later in c. 207-19, says that in 12 BC, Drusus crossed the Ijsselmeer and invaded the territory of the Chauci having sailed down the Rhine to the sea and won

¹ Cf., Cæsar: '[Rhenus] ubi Oceano appropinquavit, in plures defluit partes multis ingentibusque insulis effectis, quarum pars magna a feris barbarisque nationibus incolitur, ex quibus sunt qui piscibus atque ovis avium vivere existimantur, multisque capitibus in Oceanum influit', *BG* 4.10. Even allowing for the possible movement of tribes between Cæsar's day and Pliny's, it is reasonably clear that Cæsar is describing the area round the Insula Batavorum.

² *NH* 3.17. Platner-Ashby: *Topographical Dictionary of Ancient Rome*, 430. See also the discussion *infra*, p. 219.

³ Grant: 'His information is often palpably obsolete ... He must have depended exclusively on literary sources, and out-of-date ones at that; he cites no one later than Nepos (died c. 24BC)', *Authors*, 277-8. For the date of his book and a similar judgement on his work, see Silbermann: *Klio* 71 (1989), 572-4. Cf., Gisinger in *PW* 21.2360-2411, s.v. 'Pomponius Mela'.

⁴ *Geographia* 2.11.7 and 9.

over the Frisii who lived in the area.¹ He thus appears to locate the Chauci in the north and may be said to agree, by and large, with Ptolemy's assessment. Three points, however, need to be borne in mind. First, whatever Dio Cassius and Ptolemy say about the position of the Chauci or the Frisii or indeed any tribes in the area may have been perfectly accurate for their period (or their source's period), but not necessarily for the period under discussion here. Secondly, it is equally possible that their information is not accurate at all, owing to the well-known migratory disposition of the Germanic tribes as a whole;² and in any case, the Romans' mental picture of the relative positions of the region will not have been the same as ours. A glance at Maps 2 and 3 which represent the world according to Mela and Ptolemy will illustrate this. Thirdly, the picture of the region drawn by Tacitus makes certain possible modifications to what has been said here: for which, see *infra*, p. 38.

Summary A

- (i) Both the Greater and Lesser Chauci live in the north.
- (ii) There also (*ibi*) is Ocean with its twice daily tides.
- (iii) The tribes Pliny has seen live on *tumuli* or raised platforms which are regularly surrounded by the sea.
- (iv) There are marshes nearby.³
- (v) Peat is used as fuel.
- (vi) The tribes are principally fisher-folk.
- (vii) They drink only rain-water.

B Now, it is interesting that the whole western area of the Insula Batavorum, as well as extensive tracts to the north-west of the Rhine and south-west of the Meuse, consisted of peat lands, possibly dotted with lakes. Bloemers describes the region thus:

Only a small section of this area was suitable for habitation in Roman times: the dunes, the parts of the moor that were drained by streams and rivulets (especially the westland), and

¹ Ἐς τε τὸν ὠκεανὸν διὰ τοῦ Ῥήνου καταπλεύσας τοὺς τε Φρισίους ὠκειώσατο, καὶ ἐς τὴν Χαυκίδα διὰ τῆς λίμνης ἐμβαλὼν ἐκινδύνευσε, (54.32.2). For the dates, see Millar: *A Study of Cassius Dio*, 30.

² Tacitus: *Germania* 28, 33.1.

³ Cf., Mela: 'paludum Suesia, Metia et Melsyagum maximæ', *Chorographia* 3.29. Unfortunately, the names cannot be identified with any degree of certainty. See the Budé note *ad locum*.

the banks of the Rhine. The total inhabitable area amounted to c. 430km., of which c. 70km. was situated along the Rhine ... There were [relatively few] settlements in the region of the mouth of the Rhine. It is certainly conceivable that the development of native habitation came to a halt in this area due to the construction, early on, of a series of Roman forts.¹

High marshes, reed swamps, and tidal channels continue to be found further north in the area of the Assendelver Polders, north-west of Amsterdam. (See Map 4). Here were two Roman forts, Velsen I and Velsen II, the latter founded in c. 40.² Again, very similar geography could be found in what is now North Holland and Friesland, west and north of the IJsselmeer.³ Thus, the conditions under which Pliny saw the wretched fisher people existed over a very wide area, including the region about the mouth of the Rhine where there occurred the other example of Pliny's autopsy. The two episodes are not necessarily connected, of course, but it should be noted that they could be. The conventional labelling of maps which show the Greater and Lesser Chauci where Ptolemy put them is therefore right, but only up to a point. It is possible, as we shall see in a moment, to show that some Chauci were to be found elsewhere in that region between the mouth of the Rhine and the Elbe; so it cannot be stated for certain that Pliny must have made his autopsy as far north as Friesland.

It is also uncertain whether *NH* 12.98 which puts Pliny at the mouth of the Rhine and 16.2sq., which give him sight of some Chauci should be regarded as passages referring to two separate areas or one. We therefore need to examine further what Pliny has to tell us.

In 16.5-6, (quoted *supra*, p. 29), Pliny goes on from his autopsy and account of the fisher people to say that 'haut procul supra dictis Chaucis' there are to be found particularly tall forests 'circa duos præcipue lacus'. This landscape stands in contrast with the treeless region he has been describing and therefore the two lakes round whose shores grow oak-trees cannot be the area in which he saw his Chauci. The lakes to which Pliny refers form what is now called the IJsselmeer, formerly the Zuyder Zee. What he means by 'haut procul' is difficult to gauge. In 20.207, for

1 Bloemers in Brandt-Slofstra: *Roman and Native in the Low Countries*, 170-1 and figure 8.8.

2 Brandt in Brandt-Slofstra: *op. cit.*, *supra*, 130, 132 and figure 6.2.

3 Byvanck: *Nederland in den Romeinischen Tijd*, 13 figure 1.

example, he says of the plant *heraclium* that 'si procul intuearis' its leaves are sparrow-shaped. 'Procul' here can mean no more than a few feet away. But in 2.227 he informs us that 'Aquis calidis innascuntur ad Vetulonios in Eretria non procul a mari pisces' and "not far" here means approximately ten miles as the crow flies, further therefore on the ground. 'In eadem septentrionali plaga Hercyniæ silvæ roborum [sunt]', (16.6).¹ The spread of this forest, according to Julius Cæsar, was at least nine days' journey wide and sixty long, but Mela points out that the name 'Hercynia' was applied to several forests;² so when we read the name, we must simply envisage densely forested lands stretching from the Danube to the North Sea, all known generally by this catch-all title.³

Summary B

- (i) Pliny saw certain Chauci in the North.
- (ii) The environment and way of life of tribes who may or may not have been Chauci is described. This may or may not have been part of Pliny's autopsy.⁴
- (iii) The environment he describes covers a wide coastal area of the Netherlands between the mouth of the Rhine and modern Friesland.
- (iv) Pliny saw beehives near the mouth of the Rhine. This may or may not be connected with the autopsy and information involving the Chauci.
- (v) It is customary, largely owing to the evidence of Ptolemy to locate the Greater and Lesser Chauci north and north-east of the Ijsselmeer. This may or may not describe their position in Pliny's day.
- (vi) At some unspecifiable distance from the fisher people was oak forestation stretching as far as the shores of the Ijsselmeer where it

¹ Cf., Diodorus Siculus: Κατὰ γὰρ τὴν Γαλατίαν τὴν παρωκεανῆτιν κατ' ἀντικρὺ τῶν Ἑρκυνίων ὀνομαζομένων δρυμῶν ... νῆσοι πολλὰ κατὰ τὸν ὠκεανὸν ὑπάρχουσιν, 5.21.1. Diodorus's implication is that the forest comes very near, if not right up to, the coast-line.

² Cæsar: *BG* 6.25. Mela: *Chorographia* 3.29.

³ See further Holder: *Alt-Celtischer Sprachschatz* 1.1458-63 for a collection of ancient texts on the subject, and a discussion of etymology.

⁴ Pliny says (16.2) that he saw the Greater and Lesser Chauci in the North. *Ibi*, he says, the ocean has twice daily tides and *illic* (16.3) the wretched people live on *tumuli*. These two adverbs make it reasonably certain that, in linking his undoubted autopsy with these descriptions, Pliny intends us to understand the whole passage as continuous autopsy.

occasionally posed a threat to Roman shipping. It is not clear whether the north, east, or south shores of the Ijsselmeer are involved.

One's conclusions so far are that the Chauci and fisher people whom Pliny saw were perhaps located somewhere along the west coast of Holland, starting at the mouth of the Rhine and going as far north as the Elbe. On the other side of the Ijsselmeer, part of the land at least was heavily forested with oaks. Pliny himself was, at some point, not far from the mouth of the Rhine.

C Now let us see what else he has to tell us about the region. *NH* 4.101 runs as follows:

in Rheno autem ipso, prope \bar{c} in longitudinem, nobilissima Batavorum insula et Cannenefatium¹ et aliæ Frisiorum, Chaucorum,² Frisiavonum,³ Sturiorum,⁴ Marsaciorum, quæ sternuntur inter Helinium⁵ ac Flevum. ita appellantur⁶ ostia, in quæ effusus Rhenus a septentrione in lacus, ab occidente in amnem Mosam se spargit,⁷ medio inter hæc ore⁸ modicum nomini suo custodiens alveum.

Pliny cites Agrippa as one of his Latin sources for Book 4, but there is no indication in the passage about whence Pliny derived these details. The salient points are:

- (i) In the Rhine is the island of the Batavi and Cannenefantes, one hundred miles long. (This we have met already).
- (ii) Other islands, lying between the rivers Helinius and Flevus, are those of the Frisii, Chauci, Frisiavones, Sturii and Marsacii.
- (iii) The Rhine divides into two and what Pliny calls the *Helvinius* is the modern River Waal, and his *Flevus* is the River Ijssel. (See Map 1).

Now, there are at the present day, but were not in Roman times, islands north-west and north of the Ijsselmeer—Texel, Vlieland,

1 cannenefatium *AJ*. -tum *v*. -enufatum *C*. -inefatium *S*. cannenf-*D*. canenf- *E*. cannef- *a*. canenfaci- *F*. annenf- *R*.

2 chaucorum *AF²H*. cauc- *rv*. cauch- *C*.

3 frisiabonum *AF²va.H(S)*.

4 sturiorum *AF²v(S)*. turi- *DF¹R*. tusi- *EaH*.

5 hellinium *F²*. eli- *a*. helinum (-lium *G*) *Rva.S*.

6 appellatur *DF¹*.

7 spargit *AF²R² e corr. E²v*. -ruit *r*.

8 chore *A*.

Terschelling, Ameland, Schiermonnikoog, Borkum¹—but these lie nowhere near the mouth of the IJssel and the Waal between which are the islands of those tribes whom Pliny names. In consequence, we must now place some Chauci south-east or south of the IJsselmeer. It may be objected that there is no evidence of islands in this area, but that depends, a little, on how one understands *insula*. It may be a piece of land surrounded entirely by water, such as Cæsar's 'oppidum Parisiorum, quod positum est in insula fluminis Sequanæ' (BG 7.57.1) or enormous platforms of earth torn away from the shoreline during a storm fierce enough to uproot trees and cast them into the IJsselmeer, (NH 16.5).² Thus, the elevated patches of ground or man-made platforms³ on which the fisher people lived could equally well be thought of as 'islands', since Pliny says that when the tide comes in the people resemble sailors in ships.⁴ In Roman times, this region too consisted of mud-flats and peat-bogs as described by Pliny.⁵ During the period between the reigns of Augustus and Nero, the left bank of the Rhine was gradually inhabited by tribes who had come from elsewhere.⁶

Summary C

(i) In addition to the areas north and west of the IJsselmeer which could have provided those conditions which Pliny describes in relation to the fisher people, we must consider the region between the Rivers IJssel and Waal in which similar conditions existed and wherein Pliny says numbers of Chauci and other tribes were living.

(ii) There seems to have been movement among the various tribes during the time Pliny was stationed in Germania. It is therefore

1 See Byvanck: *Nederland*, 13 figure 1. Demangeon: *Belgique-Pays Bas-Luxembourg*, 174.

2 Notice that Pliny calls these 'islands': *vastas insulas*.

3 'Tumulos ... altos aut tribunalia exstructa manibus', 16.3.

4 Cf., Demangeon: 'l'alternance du flux et du reflux fait que deux fois par jour le Zélande semble sortir de l'eau, puis s'y enfoncer. A marée basse, on voit les eaux sortir des chenaux et se déverser dans la mer "comme dans les rues d'une ville après un violent orage", des terres ruisselantes, émergeant du fond, s'agrandissent à vue d'œil', *Belgique-Pays Bas-Luxembourg*, 196.

5 Byvanck: *op. cit.*, *supra*, 16. Gechter in Blagg-Millett: *The Early Roman Empire in the West*, 97. Trimpe-Burger: *BROB* 23 (1973), 138. Blok: *History of the People of the Netherlands* 1.19.

6 Mrozewicz: *Eos* 75 (1987), 107-28. Cf., Tacitus: *Germania* 29.

important not to become too reliant on the placing of tribes made by authors of a much later period, such as Ptolemy and Dio Cassius.

D One's conclusions at this point are that the Chauci in the north whom Pliny saw are likely to have been on the west or south-west of the IJsselmeer rather than in the far north. Since, however, we know that an oak forest came right up to the shores of the IJsselmeer at some point, that this was 'haut procul' from the fisher people he had described, and that uprooted oaks in the lake interfered with Roman shipping, one's inclination is to suggest that the south and south-east coasts of the IJsselmeer are where the forests were to be found. One suggests this for the following reasons: (a) Florus remarks, about Drusus during his campaign in the area, 'invisum atque inaccessum in id tempus Hercynium saltum patefecit'.¹ This refers to the general area in which Drusus constructed his *fossa Drusiana* which we are fairly sure stretched from Vechten to the southern shore of the IJsselmeer. (See Map 1). If Florus is to be trusted—and he is not known for his accuracy, either historical or geographical²—then he confirms Pliny's observation that the forest came right down to the shore-line; (b) this forest would plausibly be described as 'haut procul supra dictis Chaucis', (i.e., the fisher folk?), if these Chauci were on the west coast rather than far away in the north-east where Ptolemy places his Chauci; (c) Roman camps and Roman shipping imply a ready source of wood. Roman settlement and activity in Pliny's day seems to have concentrated south of the IJsselmeer rather than west, east or north. Presumably, therefore, they had wood in abundance near at hand.³

Two further considerations flow from these points. First, if the region between the Rivers IJssel and Waal encompassed land which was both heavily forested and marshy, and if tribes of Chauci as well as others were to be found there, it is possible that the contrast between treeless and forested land which Pliny noted can be located here. Secondly, if the fisher folk lived in the west, the contrast between their territory and the possible forestation of part of the south shore of the IJsselmeer would still provide

1 *Epitome* 2.30.27.

2 See Grant: *Authors*, 168.

3 This does not mean to say, of course, that there was no forest elsewhere round the IJsselmeer. It merely suggests that there was forest to be found somewhere round its southern shore.

the contrast Pliny makes. In this second case, of course, the Chauci of the south-east may not have been the same as the fisher people described by Pliny.¹

One should now add what Tacitus has to say about the region, however, for although he was writing some fifty—or, as I shall suggest, some forty—years after Pliny was there, he has several useful points to add to the picture. The relevant passages come from his *Germania* 29, 34, and 35.

- 29.1 Omnium harum gentium virtute præcipui Batavi non multum ex ripa. Sed insulam Rheni amnis colunt, Chattorum quondam populus et seditione domestica in eas sedes transgressus, in quibus pars Romani imperii fierent.
- 34.1 A fronte Frisii excipiunt. Maioribus minoribusque Frisiis vocabulum est ex modo virium, utræque nationes usque ad Oceanum Rheno prætexuntur ambiuntque immensos insuper lacus et Romanis classibus navigatos.
- 35.1 Hactenus in occidentem Germaniam novimus; in septentrionem ingenti flexu redit, ac primo statim Chaucorum gens, quamquam incipiat a Frisiis ac partem litoris occupet, omnium quas exposui gentium lateribus obtenditur, donec in Chattos usque sinuetur. Tam immensum terrarum spatium non tenent tantum Chauci, sed et implent.

This takes us on more or less a circular route clock-wise round the Ijsselmeer. It starts with the Batavi on the bank of the Rhine and the Frisii who occupy presumably other parts of the bank, but also the fringe of Ijsselmeer itself. By *navigatos*, Tacitus seems to direct our attention to specific occasions in the past—12 BC under Drusus, 5AD under Tiberius, 15-16 under Germanicus—as the Loeb note *ad locum* points out. We also learn that the *fossa Drusiana* is in this region.² Roman knowledge of Western Germania extends to this point.³ The country now falls away (*recedit*) with a great bend to the north and here we meet the Chauci who

¹ Whether west or south-west of the Ijsselmeer, Chauci in this area would still be described as living in the north as Pliny says (16.2), since north of the Roman boundary they certainly were and the impression of 'north' would be accentuated if Pliny had had a conception of the situation of the area similar to those of Mela or Ptolemy. See Maps 2 and 3.

² For a clear discussion of the *fossa*, as well as the *agger* and *moles* with which it has sometimes been confused, see Wells: *The German Policy of Augustus*, 111-16. Wells is clear (p. 111) that the *fossa* followed the River Vecht, running from the old Rhine near Vechten into the Ijsselmeer. See my Map 1.

³ It is more clearly 'western' on a map such as that referring to Mela's geography than on one of our own. See Map 2.

start next to the Frisii and occupy part of the coast of the Ijsselmeer.¹ Finally, Chaucian territory bends as far as the Chatti. These were to be found towards the south in what is now more or less Hesse;² so Tacitus completes his circle.

Conclusions

The geographical picture which emerges from this investigation, then, informs us of the following:

(i) Large stretches of land around the Ijsselmeer were subject to flooding, contained swamps and peat-bogs, and provided the kind of living conditions Pliny describes in 16.2-4.

(ii) Chauci, both Greater and Lesser, inhabited areas more or less right the way round the Ijsselmeer in the first century AD. There is reason to think that at least one part of the Ijsselmeer shore was forested by oaks. The fisher folk described by Pliny lived not far from here, although their region was treeless and swampy.

(iii) Tribes, including Chauci and Frisii, were to be found particularly to the west, south and east of the Ijsselmeer. A certain fluidity in their movements can be detected during the first century. An historical picture involving Pliny also emerges with the following points:

- (i) Pliny was present at the mouth of the Rhine.
- (ii) He saw some of the Chauci 'in septentrione'.
- (iii) He describes the way of life of fisher folk who may well have been Chauci or Frisii and whom he may have seen for himself. The likelihood of autopsy is strong. It is also quite possible that those fisher people he saw were inhabiting an area somewhere west of the Ijsselmeer, although this must not be taken as fact.

¹ Dio Cassius, writing of Drusus's expedition of 12BC, says that Drusus sailed down the Rhine as far as Ocean, won over the Frisii, crossed the Ijsselmeer, and invaded the territory of the Chauci, 54.32.2. As we have seen, there were Chauci in the north-east and in the south-east, so it is difficult to tell in which particular direction Drusus made his crossing.

² Dio Cassius located them near the Rhine (54.33.4) but then had them move (54.36.3). Ptolemy placed them somewhat east of Hesse (*Geographia* 2.11.22). Tacitus, however, indicates that they occupied a wide spread of land including Hesse and part of Bavaria, *Annales* 1.55; 12.27.8.

- (iv) Had Pliny been in the area, he would perhaps have seen the *fossa Drusiana*. This, as I shall suggest later, may have stimulated him to begin his *Bella Germaniæ*. (See *infra*, pp. 89-90).

(iv) German Campaigns

We are now in a position to look at the military campaigns of c. 47 and 58/59. The standard account of Pliny's military career, based on Münzer, attaches him to the former which was led by Domitius Corbulo against the Chauci. Since I am investigating the possibility that Pliny may have had a civilian career before he entered upon his military *cursus*, I must account for his being in Germania Inferior and for his being acquainted with the Chauci during the fifties since, according to my suggestion, he would not have joined the army until he was about thirty-one, i.e., in c. 54/55.

Corbulo, c. 47

The following outline of Corbulo's campaign is based upon Tacitus: *Annales* 11.18 - 19.

- | | | |
|---|--|--|
| 1 | The Chauci invaded Germania Inferior. Their leader was Gannascus, of the Cannenefantes (<i>natione</i>). | I.e., this was an invasion through the insula Batavorum near where both Chauci and Cannenefantes were to be found. See Map 1. |
| 2 | With light vessels, he was plundering principally the coast of Gaul. | So the threat and nuisance to Roman troops were in the west of the region, not the east. Could one make a connection between this and Pliny's 'Germaniæ prædones singulis arboribus cavatis navigant', (16.203)? |
| 3 | Corbulo brought triremes up the Rhine channel | I.e., the old Rhine. See Map 1. Presumably these were ships from the <i>classis Germanica</i> . There had been a regular <i>classis</i> in the area since Drusus's day. In the forties and fifties it was stationed at the <i>ara Ubiorum</i> (Köln). ¹ |
| 4 | and the rest of his vessels via estuaries and canals (<i>fossas</i>). | This sounds like the complex of waterways in and near the <i>insula Batavorum</i> . See Map 1. |

¹ Starr: *Navy*, 141-4.

- 5 He sank the enemy's boats. I.e., there was a naval engagement here in the west, perhaps near the mouth of the old Rhine. This was the general area of Gennascus's plundering expeditions and the sources of his support.
- 6 The Frisii gave hostages and settled in territory (*agros*) designated by Corbulo. As we have seen from Tacitus's *Germania*, Frisii were to be found on the southern and south-eastern shores of the Ijsselmeer. It is possible that one of these places was the territory assigned to them by Corbulo.
- 7 He built a fortified post there. According to Byvanck, a string of fortifications from Utrecht to Valkenburg date from about this period, but one cannot say which, if any, can be identified with the post referred to here. It may not have survived at all for archaeologists.¹ Is such a posting the source of Pliny's information about the flower of Frisian territory, (25.21)? Could one also add to this the detail about a conquered tribe's offering grass to those who had defeated it, (22.8)?
- 8 He sent people to persuade the Greater Chauci to surrender and kill Gennascus. If the Frisii had moved into land on the southern or south-eastern borders of the Ijsselmeer, representatives of Roman policy—whether Romans or Chauci/Frisii allies—might go in several directions since, as we have seen, Chauci were probably to be found in several areas round the whole of the Ijsselmeer as well as north-east where Ptolemy later located them. Since Gennascus had been defeated in the west, it would have made sense for him to go east or north-east. This would have taken him away from Roman territory and at the same time into areas he might consider friendly towards himself.

Had Pliny taken part in Corbulo's campaign, therefore, or in the subsequent mopping-up operations, his activity is likely to have been concentrated in the first instance to the west of the Ijsselmeer, and in the second somewhere perhaps to the east or the north-east. The first region is consistent with one possible location for the fisher-folk he described; the second could have brought him into a forested area and afforded him a sight of the Ijsselmeer shore such as he describes in 16.5.

¹ Byvanck: *Nederland*, 1.150. Johnson: *Roman Forts*, 81 and 167. Johnson gives information about Valkenburg not far from the mouth of the Rhine, which was a Claudian fort of c. 40.

Frisii 58

Tacitus's account of the 58 campaign, (*Annales* 13.53-6), provides the following main points:

- 1 The Frisii moved to the river-bank. I.e., the old Rhine.
- 2 Their young men went through woodlands/valleys (*saltibus*) and marshlands (*paludibus*). Tacitus refers to the *Hercynian* 'saltus', so presumably he means here the forested area.
- 3 Those not of military age went via the lakes. I.e., the Ijsselmeer. The various areas in which we have already found Frisii and Chauci (Map 1) were full of marshlands, as I have pointed out.¹
- 4 They settled in vacant land set aside for the use of troops. They put up houses and sowed the fields.
- 5 Duvius Avitus threatened them with military force unless they withdrew to their former territory or got a new site from Nero. Diplomacy by threat. Avitus had recently taken over command of the province.
- 6 Nero instructed the Frisii to leave, but was ignored.
- 7 Without warning, a body of auxiliary cavalry was sent against them. Certain Frisii were captured or killed. This is particularly interesting, because we know from Pliny the Younger that his uncle served in Germania as a cavalry officer, *præfectus alæ*, which means that he would have held a command in just such a troop as this. The facts that the Romans went into the territory taken over by the Frisii and that some Frisii were captured or killed mean that there was some kind of military engagement, however brief.

¹ See also Bogaers, *BROB* 17 (1967), 102 where his map shows fen/peat areas right the way round the southern and eastern sides of the Ijsselmeer. Gauging where peat-land may have given way to forest is difficult. Clearly it did somewhere along the Ijsselmeer and I have suggested (*supra*, p. 37) that this area may have been in the south and south-east.

- 8 The same area was then occupied by the Ampsivarii who had been expelled from their territory by the Chauci. Their leader, Boiocalus, ended a speech to the Romans with the ominous words, 'potius mare superfunderent'. One is reminded of Tacitus: *Historiæ* 5.19 which tells us that in 69-70, an uprising against the Romans breached the *agger Drusianus* and let the Rhine flood in to meet the Waal. Is that the sort of action which Boiocalus had in mind? If so, the occupied territory we have been discussing may have been in just those southern and south-eastern regions we have noted before.¹

From where did the Ampsivarii come? Tacitus tells us (*Annales* 2.8.4) that in 16AD, Germanicus sailed up the *fossa Drusiana* into the lagoons of the IJsselmeer, from there into Ocean, and thence as far as the mouth of the River Ems (*usque ad Amisiam flumen*). There he started to make camp, but received news that the Ampsivarii had revolted behind him (*a tergo*), and he sent a detachment of cavalry to deal with it. 'Ampsivarii' is Gieffer's conjecture; the text has 'Angrivarii'. Since the latter are placed by Tacitus east of the Weser in 2.10, the conjectured change seems reasonable. Moreover, since Tacitus says that the Chauci had expelled the Ampsivarii from their territory and since we know that according to Ptolemy, Chauci were to be found in just this same general area round the mouth of the Ems, we may conjecture that it could have been from this region that the Ampsivarii were driven southwards to look for new land.

The Roman action against the Frisii must have been rather more extensive than Tacitus suggests if Ampsivarii were able to occupy the area with what appears to be relative ease. But almost certainly Tacitus's account at this point is much curtailed; so many details are missing. He does say, however, that the neighbouring tribes allowed them entry out of pity for their plight.

- 10 During his speech, Boiocalus said that the territory in question had once been held by Chamavi, then by Tubantes, then by Usipi.

In *Germania* 32, Tacitus says that the Teucteri and Usipi lived on the Rhine bank 'quique terminus esse sufficiat'. This bank is 'certum alveo', and one thinks of the *agger Drusianus* built, perhaps, as part of a

¹ Wells, however, discusses the location of the *agger* and concludes that 'we do not know what or where [it] was', *Policy*, 115. Dion locates traces of *aggeres* between Merwen and the Rhine, *REL* 42 (1964), map on p. 73. See my Map 1 which is based on his.

scheme of flood prevention.¹ In *Ibid.* 33 he says that the Chamavi and Angrivarii 'immigrasse narra[n]tur'. We therefore have some general notion—and it really cannot be more than that—of the region under discussion: the south-eastern area of the Ijsselmeer between the River Ijssel and the point where the Ijssel divides from the old Rhine. Such an area would make sense of Boiocalus's remark 'potius mare superfunderent' if he were thinking of breaching flood-works. Notice that he speaks of *mare* rather than *flumen*. It suggests that he has in mind a region close to the Ijsselmeer through which the Frisian people moved in the first place.

Action against these Frisii by Roman auxiliary troops, then, could have taken place in the territory not far from those shores occupied by the Chauci (resident, as we have seen, next to Frisii who were clustered about the south and south-east of the Ijsselmeer); and thus there is a possibility that Pliny's observations could have been made at this time rather than in c. 47, in the south-east rather than the south-west, although the latter, considering his known presence at the mouth of the Rhine, is equally possible.

Summary

- (a) There were Chauci along the Rhine and round the southern shores of the Ijsselmeer. There were Frisii in the same region.
- (b) This area has many points in common with Pliny's eye-witness account of certain groups of Chauci and fisher people.
- (c) In c. 47, Corbulo had to deal with Chaucian raids upon the insula Batavorum and pirate expeditions in the west. This he did largely by means of naval skirmishes in the canals and river-mouths in the west.
- (d) He then settled Frisii in territory which may have been situated south or south-east of the Ijsselmeer.
- (e) He also sent representatives to the Greater Chauci to ask for their surrender and for the death of the pirate leader.

If Pliny saw Chauci at this time, then, his opportunity to do so could have occurred either when the Chauci came through the insula Batavorum or when an embassy was sent to the Greater Chauci near the end of the naval-cum-military operations. Since we know that Pliny was near the mouth of the Rhine at some point, both campaigning in the area

¹ Wells, *op. cit.*, *supra*, 115.

near the marge of the Ijsselmeer as well as his possible inclusion in the embassy to the Chauci could have given him his sight of the fisher people.

(f) In 58, Frisii moved through woodlands and the lagoons of the Ijsselmeer to the bank of the old Rhine, settling in land which the Romans had set aside for their own veterans.

(g) The Frisii were threatened with military force and, after a period long enough for them to send envoys to Rome and back, they were attacked by Roman auxiliary forces. Some Frisii were captured or killed.

(h) Ampsivarii were then allowed by other, nearby German tribes to occupy the territory after they had been expelled from their own lands by Chauci.

(i) This tribe, perhaps, associated with the River Ems, seems to have been driven south-west, towards the Ijsselmeer region, by the Greater Chauci.

If Pliny had taken part in the auxiliary engagement, and we know that for a time at least he was a cavalry officer, he may have had a chance to see Chauci—who were not at this time the tribe being unsettled or displaced—while dealing with Frisian intruders. The difficulty here is that the geography is somewhat vague. Germanic tribes were obviously highly mobile throughout this period, and fixing places by reference to tribe, which is more or less the only way of proceeding, is a risky business. Two things, however, can be said: first, both 47 and 58 provide opportunities for Pliny to have seen his Chauci, although the exact location on both occasions cannot be certain; secondly, 58 has a slight advantage, since we have other indications that Pliny is likely to have been in the east of the region as well as in the west, and it is these that I propose to investigate now.

We pick up first at the point in Tacitus: *Annales* 13.56 when Duivius Avitus, having listened to Boiocalus and offered to make the Ampsivarii a grant of land, has been rejected with bitterness. The Ampsivarii made a coalition with the Bructeri, the Teucteri, and others with a view to making war upon Avitus. Avitus covered his rear by getting the legions from Germania Superior to cross the Rhine and protect him, and then he himself invaded Teucterian territory and threatened this tribe with severe reprisals. Where was this? As we have seen (p. 43),

in Tacitus's day the Teucteri were supposed to be living on that part of the Rhine which was not subject to flooding. Wells places the Usipetes (Usipi) over the Rhine from Vetera,¹ and Tacitus says (*Germania* 32) that the Teucteri lived in the same area. If Wells is right, the proximity of the Roman settlement of Castra Vetera is interesting, as it is here that a *phalera* has been discovered, bearing the legend PLINIO PRÆFEC(TO). Syme is of the opinion that this need not be an indication that Pliny must have been a cavalry officer, since an infantry officer would also have had a horse. Recent cleaning, however, has emended the old reading to PLINIO PRÆF. EQ., and if this Pliny was the same as Pliny the Elder, it settles the matter.²

Mention of Avitus leads one to ask who were the governors of Germania Inferior at this time since, if Pliny was there in the fifties, he must have served under them and therefore may indicate personal knowledge of them. There were three in the eleven years between 55 and 66: (a) Pompeius Paulinus, c. 55-8; (b) Duvius Avitus, c. 58-9; (c) Sulpicius Scribonius Rufus who remained in charge of the province until the winter of 66.³ Now, Pliny tells us (33.143-4) that Paulinus brought with him to Germania a large quantity of silver plate: 'Pompeium Paulinum ... XII pondo argenti habuisse, apud exercitum ferocissimis gentibus oppositum scimus'. *Scimus* cannot be treated as the equivalent of *vidimus*, as commentators from Münzer to Syme pretend. It can mean here one of three things: (i) 'I know', referring to Pliny alone; (ii) 'we know', meaning Pliny and other people; (iii) 'we know', an impersonal construction referring to 'Romans in general'. The context of Pliny's observation strongly suggests (ii) and thus cannot be taken as firm evidence of autopsy. Moreover, as Jones points out, 'the reference occurs in a list of examples, illustrating the value of silver-plate, few or none of

1 *Op. cit.*, note 69, map of Augustan military settlements.

2 Jenkins: *Britannica* 16 (1985), 141, 154-7, and 144 figure 3. Saddington: *ZPE* 68 (1987), 261. Syme: *RP* 2.748. *CIL* xiii.10026.22. Bishop: 'Cavalry Equipment', in Coulston: *Military Equipment*, 116. The *phalera* has been dated by *CIL* to 57/58. No reason for this is given, and one must bear in mind that the Pliny here may not be Pliny the Elder. One would need proof of ownership as well as firm reasons for dating before the artefact could play more than a conjectural role in the geography and dating of our Pliny's career.

3 Griffin: *Nero*, 116, 178. Paulinus is attested in 56. Avitus, 'consul suffect in the last pair of 56, cannot have arrived before the Spring of 57', Syme: *RP* 2.747.

which Pliny would have seen'.¹ In other words, we may have here a well-known piece of gossip rather than autopsy, but this does not rule out the possibility of Pliny's being attached to the army as a junior cavalry officer under Paulinus's command. It simply means we cannot take it for granted that Pliny saw the plate for himself.

More important than this, however, is the information that in his three or four years as governor, Paulinus completed the *agger Drusianus*, almost certainly some kind of protection against flooding, which Drusus had, apparently, left unfinished: 'inchoatum aggerem absolvit', as Tacitus puts it (*Annales* 13.53). It is a pity we cannot be sure where this was situated, but it is possible to suggest that it may have affected Pliny directly. In his account of his uncle's bibliography, Pliny the Younger has this to say about the genesis of the *Bella Germaniæ*. 'Incohavit cum in Germania militaret, somnio monitus: adstitit ei quiescenti Drusi Neronis effigies, qui Germaniæ latissime victor ibi periit, commendabat memoriam suam orabatque ut se ab iniuria oblivionis adsereret', (*Ep.* 3.5.4). Why was the work inspired by Drusus in particular? Is it because Pliny was part of the Drusian operation initiated by Paulinus, and thus had Drusus frequently in mind? If so, it puts Pliny in Germania Inferior at least between 55 and 58. These points are discussed in detail later (pp. 89-91).

Two more brief points are worth making before I summarise. In c. 47 the Roman army was involved in naval skirmishes. Could someone in Pliny's position have sailed with the fleet and thus seen the coastal fisher folk in the course of one or more patrols? There is no direct evidence to tell us how cavalry might be put on board or whether a cavalry officer would spend part of his time on a ship, perhaps to acquaint himself with its workings so that if he had to load horses he would have some notion of what he was doing. With so many points unanswerable for lack of evidence, one can say only that Pliny may have picked up his information in this fashion but that this is a long way from saying that he did or even that it is likely.

Secondly, an *argumentum e silentio* with reference to Corbulo's campaign. Pliny makes only seven references to Corbulo in the *NH*. They are 1.5; 1.6; 2.180; 5.83; 6.23; 7.39. Of these, the first two cite him in the bibliography as a written source of information, and the last refers to his

¹ *The Emperor Titus*, 15-16. There are thirteen examples of *scimus* in the *NH*. Each is given in context in Appendix 3. This passage appears there as n^o 11.

birth. The other four deal with the Armenian Campaign of 58. Two (2.180 and 5.83) are connected with Corbulo's book on the subject, as Pliny's use of *prodere* in both indicates.¹ *Perquisita* in 6.23 shows that Pliny was able to talk to Corbulo and also to the royal hostages whom he mentions in both passages. One may guess that 6.40—'corrigendus est in hoc loco error multorum, etiam qui in Armenia res proxime cum Corbulone gessere'—was also gathered from conversation with veterans of the Armenian wars. But one or two of them may have written memoirs, so we cannot be sure. At any rate, Pliny seems to associate Corbulo with Armenia rather than Germania. Is this because he was with Corbulo in c. 47 and so had no need to ask questions; or because he had sufficient knowledge of Germania from his own, later, experience and needed Corbulo only for Armenia? Either way, the silent argument does not help.

Conclusions

(a) The generally accepted theory of Pliny's participation in Corbulo's campaign against Chauci raiders and pirates in c. 47 is not as firmly based as is usually considered.²

(b) On the available evidence it seems that Pliny could equally well have played a part in Roman resistance to the incursions of the Frisii in 58.

1 For a discussion of the meaning of *prodere*, see *infra*, pp. 129-31.

2 That a dose of caution is necessary can be seen from one of the latest summaries of Pliny's career.

It is reasonable to deduce from his reference to autopsy in Germany that he actually took part in a campaign east of the Rhine conducted by Domitius Corbulo, governor of Upper (north) Germany in AD47 and that, at a later date, he was posted also to Lower (south) Germany, probably during the governorship of Pomponius Secundus in AD50/51

Reynolds, in French-Greenaway: *Science*, 4. Not only are the two Germanies the wrong way round, the 'probably' twice repeated scarcely covers the evident assumption that the links between Pliny-Corbulo-Secundus-the two campaigns are soundly based. Cf., König-Winkler: 'Als Kommandant einer Abteilung thrakischer Hilfstruppen diente er in der Provinz Untergermanien und beteiligte sich im Jahre 47 am siegreichen Feldzug, den der Statthalter Cn. Domitius Corbulo gegen den germanischen Stamm der Chauken zwischen Ems und Elbe führte', etc. *Plinius der Ältere*, 12. There is no hesitation at all in attributing dates and places as though they were firmly established. Cf., *Ibid.*, 22-3 which outlines Pliny's career in terms of dates and places, again without a single reservation.

(c) The geography of the area under discussion could have presented Pliny with opportunities to see Chauci and the fisher people, whose way of life he describes so vividly, on either date.

(d) Further evidence makes it possible that Pliny was in or near *Castra Vetera*. Associated, but tenuous, evidence conjectures a link between Pliny and Pompeius Paulinus, and between Pliny and Duвий Avitus, successive governors of *Germania Inferior* between c. 55 and 59.

(e) There is a possible connection between Paulinus's completion of the *agger Drusiana* and Pliny's composition of the *Bella Germaniæ*. Details of this argument have been postponed to pp. 89-91.

So far, then, the two hypotheses do not rule each other out.¹ Further discussion of Pliny's military career is required, however, before it can be stated that one perhaps seems more likely to be true than the other.

(v) Germania Superior

Pliny is credited with serving some time in *Germania Superior*, largely on the strength of his relationship with Pomponius Secundus who is known to have been there in 50/51.² A remark by Syme illustrates the point.

The date and the governor emerge without effort. P. Pomponius Secundus (*suff.* 44) operated against the Chatti in 50 ... and he is attested for in 51 ... They were old friends. Pliny witnessed the sumptuous banquet, with vintage wines, which Pomponius

¹ Pliny could have been in the army in both 47 and 58. His presence there in 47 would mean that he was twenty-three or twenty-four and therefore not old enough to have filled the office of *duovir* or *IVvir* before entering the army. As we have seen, many waited until after military service before starting a civil career, but they did actually have one; so if Münzer's theory about 47 is right, we must ask what Pliny was doing between leaving the army at sometime in Nero's reign, (as we think he did: Pliny: *Ep.* 3.5.5), and entering upon his first procuratorship under Vespasian. If we allow him to fill either the duovirate or the quattuorvirate before entering the army, however, we bring him into military life at the age of twenty-six or twenty-seven at the earliest, (or thirty-one/thirty-two if the age-limit on those posts still stood at thirty), which brings us either to the year 49 or 54. Either, of course, would make Pliny's involvement in Corbulo's expedition impossible.

² Tacitus: *Annales* 7.27sq. CIL xiii.11515: Vindonissa. This last was a Claudian fortress in Switzerland. See Johnson: *Forts*, 235.

offered to Caligula (14.56); and he was to write the biography of his benefactor. He left with Pomponius, it may be supposed in 51 or 52. In the latter year he was present at the pageant which inaugurated the draining of the Lacus Fucinus, and he saw Agrippina preside, in a golden cloak.¹

These sentences require comment. First, Pliny does not say he witnessed this banquet at all. He records only that he told the story in his biography of Secundus: 'In C. Cæsaris Germanici filii principatu [the cost of wine had risen enormously since the days of Opimius], nobili exemplo docuimus referentes vitam Pomponii Secundi vatis cenamque quam principi illi dedit'. Pliny dates the banquet to 39AD, (i.e., 160 years after the consulship of Opimius), which coincides, more or less, with what may have been Pliny's entry into Roman society at the age of fifteen or sixteen under the aegis of Secundus, since we know that he was indeed present at a betrothal banquet in Rome at about that time, (see *supra*, p. 2). Nevertheless, it is speculation that he went to the dinner for Caligula either with, or at the request of, Secundus. The point is worth making, if only because there has been a tendency among biographers to say (a) Pliny knew Secundus well, (b) Secundus was in Germania Superior in 50-51, (c) Pliny was in Germania on military service, (d) therefore, Pliny served in Germania Superior under Secundus. The non sequitur of this sequence should be obvious, but apparently for most commentators it is not. No one disputes Pliny's connection with Secundus. The question is, have we any evidence to link them in Germania Superior?

Perhaps at this point it is worthwhile asking what Pliny himself has to say about Germania Superior. The answer is, not much. It boils down to these observations: (i) the plains of Germania Superior are covered with asparagus (19.145), a piece of information he could easily have culled from a *Vita Tiberi Cæsaris*, for example,² since he goes on to say that 'non inficeto Ti. Cæsaris dicto herbam ibi quandam nasci simillimam asparago'; (ii) the Danube rises 'in Germania iugis montis Abnovæ' (4.79), a general comment which needs no autopsy; (iii) a fish like a sea-pig is drawn out with teams of oxen 'præcipue in Mœno Germaniæ amne', and with

¹ RP 2.746. The gaps in my text are filled by Syme with the references to Tacitus and *CIL supra*, p. 49, note 2.

² Or even from Tiberius's own *Commentarii de vita sua*, although this was brief and, judging from the tone of Suetonius's reference to it, probably political justification rather than military reminiscence. See Suetonius: *Tiberius*, 61.1.

weeding-hooks 'in Danuvio' (9.45). This is one of those pieces of information which may or may not have been obtained at first hand. An aural source is perfectly possible.

Nor does Pliny record any examples of Germanic vocabulary from Germania Superior, although he does have seven from Germania Inferior. Interestingly enough, four of these seven have a bearing on the coastal area of the North Sea, Frisian or Chaucian territory. They help to give the impression that Pliny's military service is likely to have taken place there, in Germania Inferior, rather than further south. Certainly the more northern region seems to have made a bigger impact on him.¹

Returning to Syme: the fact that Pliny wrote a life of Secundus does not mean or even imply that he served under him in Germania; and as for the episode at the Fucine Lake, Pliny records the sight of Agrippina as 'Agrippinam nos vidimus' (33.63, misprinted in Syme as 23.63), which may well be autopsy—it almost always is according to Pliny's regular usage²—but again has nothing to do with Pliny's career in Germania. Mention of Pliny's passing glance at the hot springs in Aquæ Mattiacæ (Wiesbaden) across the Rhine from Moguntiacum (31.20), or his observation about fishes 'quod et circa Danuvium exortum audivi' (31.25) is equally irrelevant. As far as the former is concerned, Pliny's details are

¹ See Whatmough: *Dialects of Ancient Gaul*. The following are Pliny's references to the north coast, with Whatmough's page numbers in square brackets: (i) *amalchium* = 'frozen sea (4.94) [881]; (ii) *glæsum* = amber (37.42) [898]; (iii) *morimarusa* = North Sea (4.95) [905]; (iv) *vibones* = flower of the plant *Britannica*, pointed out to the Romans by the Frisii (25.21) [915]. Pliny says that at the time, the Frisii were still quiescent, 'Frisii gens tum fida'. The three other Germanic words are (v) *bison* = bison (8.38) [885]; (vi) *sapo* = bleach/soap (28.191) [908]; (vii) *siser* = plant from Gelduba on the Rhine (19.90) [909]. Although this last passage reads as though it might be autopsy, one should note that there is no direct evidence that it is.

² Cf., the Budé version, 'quant à nous, nous avons vu'. Neither the English nor the French version may intend to imply the generalised 'we'. Indeed, it is perhaps more likely that they are hedging their bets and taking refuge in an editorial 'we' which seeks to mirror the Latin. On this usage, see further Hofmann-Szantyr: *Lateinische Syntax und Stilistik* 2.19-20 and Kühner-Stegmann: *Grammatik* 1.87-8. Pliny's use of the 'modest' or 'auctorial' *we* depends, to a certain extent, on the verb he is using. For example, *dixi* (2 examples) as one might expect is heavily outnumbered by *diximus* (409 examples). *Vidimus* (27 examples) is used nearly twice as often as *vidi* (14 examples). *Reperio/repperi*, however, (16 examples) appear far more often than *reperimus* (2 examples).

correct;¹ but there is nothing in his text to suggest autopsy. Indeed, the reference to Aquæ Mattiacæ is immediately preceded by a very similar anecdote about the waters of Krannon in Thessaly, so if one is going to argue that Pliny's German information here is evidence for his having visited that region, one might equally well advance the notion that he was, at some point, in Thessaly, too. Moreover if one wanted to suggest that Pliny could have been in the general region of Aquæ Mattiacæ, one might point out that he suggested the Emperor Caligula was born in a small place called Ambitarvius Vicus (the reading is uncertain) above the Confluentes. In support of this idea, Pliny adduced the presence of local altars inscribed OB AGRIPPINÆ PUERPERIUM. This portion of his *Bella Germaniæ* was used by Suetonius who did not accept his theory and shot it down in flames.² Still, if one wishes to collect Pliny's references to Germania Superior, this one should not be omitted, although it gives no direct evidence of his having been in the area.

As for the remark about the fishes, the context reveals that this anecdote is closely linked with a tale from Ctesias. 'Ctesias in Armenia fontem esse scribit, ex quo nigros pisces ilico mortem adferre in cibis: *quod et circa Danuvii exortum audiui* (My italics). Here, of course, Pliny says specifically that this is oral evidence.³

Conclusions

- (a) The available evidence fails to support the hypothesis that Pliny was in Germania Superior.
- (b) It also fails to support the suggestion that he served under Pomponius Secundus in the campaign against the Chatti in 50/51.

(vi) Pomponius Secundus

Pliny's relations with Secundus do need to be taken into account, however, when one is discussing his career. If, as seems reasonably clear, Secundus was in a position to be a useful patron for Pliny, in what way could he have been of assistance either in c. 47 or in 58?

1 For comment upon which, see the Budé note *ad locum*.

2 *Caligula* 8 = *Bella Germaniæ* fr. 2 (Peter).

3 I discuss the nature of oral evidence further in Chapter 4, *infra*, pp. 239-41. The fact that Pliny heard about the Danuvian fish does not rule out the possibility of his having been in the area, but it tells us specifically that this was not autopsy and it also fails to prove that he was in the region himself.

According to Münzer and Syme, Pliny was with Secundus in 50-51. If he had taken part in Corbulo's campaign of c. 47, he would have been twenty-seven or twenty-eight by the time he served with Secundus, with four or five years of army experience behind him. The trip to Rome in 52 would therefore represent some kind of furlough, since Münzer has him back in Germania Inferior in 57, *contubernalis* with Titus.¹ As we have seen, however, there is really no evidence to suggest that Pliny was in Germania Superior at all. But according to my suggestion of a possible pre-military career for Pliny, two patterns are available.

(i) Pliny held the highest civilian local post of *duovir* or *IVvir* at the minimum age of twenty-five. He served for the statutory year and then went into the army. That gives us 49/50 when Secundus was either in Germania Superior or perhaps on his way to it. Had he recommended Pliny to the equestrian *cursus*, it seems a little odd that he did not (apparently) arrange for his protégé to serve under him. But perhaps there were circumstances of which we know nothing.

(ii) Pliny served as *duovir* or *IVvir* at the minimum age of thirty. The year was then 53/54. In 52, therefore, he was still in Italy, nearing the top of the local civilian *cursus*, perhaps preparing to stand for one or other of the aforementioned offices in the following year. By that time Secundus appears to have left Germania Superior.² Had he returned to Italy, as seems probable, (a) he could have supported Pliny in the last stage of his pre-military career and the first step of his *militiæ* and (b) there remains no need to ask why Pliny was not apparently associated with him in Germania Superior. One cannot prove any of this, of course, but both

¹ BJ 104 (1899), 82-3 and 106-7. Syme: *RP* 2.746-7. On furlough, see Speidel: *Roman Army Studies* 2.330-41.

² This is inference, drawn from a passage of Quintilian: *Nam memini iuvenis admodum inter Pomponium ac Senecam etiam præfationibus esse tractatum, an gradus eliminat in tragœdia dici oportuisset*, *Institutio* 8.3.31. Quintilian was born between 35 and 40. He was certainly in Rome in 57 because he mentions the trial of Capito in that year, saying that he was *adulescens* then, (*Institutio* 6.1.14. Cf., Tacitus: *Annales* 13.32). If, therefore, Quintilian came to Rome when he was about fifteen—and for the age-limits of *iuvenis*, see Aulus Gellius: *NA* 10.28.1—he would have arrived there between 50 and 55, which is probably when he came across the dispute between Pomponius and Seneca. It is always possible, of course, that Quintilian was told about the argument later, but we know he saw Pomponius (*Institutio* 10.1.98) and it has been conjectured that Secundus died at some time between 57 and 60. See Otto: *Philologus* 90 (1935), 490-2. Cichorius: *Römische Studien*, 425-6.

suggestions, and especially the second, have the merit of taking into account such evidence as we have, and offering a coherent explanation of Pliny's relationship with Secundus. Both make two pre-suppositions: first, that Pliny had a pre-military civilian career, and secondly that he finished it with a post such as the duovirate for which the minimum age had been thirty and may still have been so in Pliny's day. Neither of these pre-suppositions involves any unusual behaviour on Pliny's part, as large numbers of men conformed to this pre-military pattern.

(vii) Contubernium

Pliny: 'nobis quidem qualis in castrensi contubernio', (*Præf.* 3)

As we have seen, Münzer was of the opinion that Pliny returned to Germania Inferior in 57 and was there *contubernalis* with Titus. Syme suggests further that 'if [Titus] took up service on the Rhine in the Spring of 56, he would be just sixteen years of age. Not impossible, but 57 or 58 is more likely'.¹

It should be noted that Pliny does not say where he and Titus shared military experience; he merely states that they did so. Titus served as military tribune in both Germania and Britannia, so the inference that both men were in Germania is sound. The theory that they were *contubernaes* in Judæa has long been discredited.² *Contubernium* meant that one shared a tent on campaign and a barrack-room in an established fortress with between seven and nine other men.³ Both *contubernium* and its adjective may also have carried certain implications for Roman—intimacy, a relationship (non-sexual) between an older and a younger man, and perhaps the further implication that these two did not

1 *RP* 2.747. Syme mentions two successive governors of Germania Inferior as evidence of dating—Pompeius Paulinus and Duvius Avitus, (pp. 745-6). Since Paulinus was *consul suffectus* at the end of 56, he cannot have arrived in Germania before the Spring of the next year. 'As for Duvius Avitus', Syme continues, 'Pliny mentions him once, not, however, in relation to his governorship of Germania Inferior (34.47). None the less, since Pliny shared the company of Titus, he probably served under Duvius Avitus as well'. Since Pliny's reference is actually to Avitus's governorship of Aquitania (c. 53-6), Syme's second sentence is not a warranted inference drawn from his first.

2 Jones: *The Emperor Titus*, 15.

3 Webster suggests that *contubernium* involved eight men by the time of Polybius, *Army*, 114, 167. Harmand puts the number at about ten, *L'armée*, 156. Keppie likewise, *The Making of the Roman Army*, 173. Auxilia were arranged in the same way, *Ibid.*, 183.

necessarily share the same tent but were just very closely associated in military life.¹ Such a usage could easily be translated as 'on the personal staff of ...'.²

Jones, supported by Birley, has argued cogently for Titus's having been military tribune in Germania in 61. His reasons—presented, of course, in much fuller detail—are broadly speaking these: (a) Titus served as *vigintivir* for a full year, as he was required to do by law. To do so, he must have completed his seventeenth year. There was no obligation to serve at the minimum age. (b) The reason for postponement in Titus's case is likely to have been the Empress Agrippina who was hostile to the Flavians. It is noticeable that the political tide started to turn in their favour after her death in March 59. Titus was twenty in the December of that year. (c) Mucianus praised Titus's achievement in Germania but not in Britannia. This argumentum e silentio suggests that his time there was not especially laudable and this in turn suggests he may have served under the leisurely Turpilianus (61-63) rather than the man's vigorous predecessor Suetonius Paulinus.³ (d) Titus, according to Tacitus: *Historiæ* 2.77, may have been in Germania for longer than a year. Thus, the most satisfactory account of Titus's early career makes him *vigintivir* in 60 and military tribune in Germania and Britannia between 61 and 62/3.⁴

¹ Cicero: *Pro Plancio* 27; *Pro Cælio* 72. Tacitus: *Agricola* 5.1. Suetonius: *Iulius* 2. Occasionally the reference is to father and son. Sallust: *Jugurtha* 64.4. Livy: 42.11.7. Note the emotional appeal which Otho was able to make by an appeal to 'contubernium', Tacitus: *Historiæ* 1.23. See also Lounsbury: *The Arts of Suetonius*, 20.

² Pliny's reference to *contubernium* in *Præf.* 3 is an interesting example of self-pride masquerading as compliment. Titus is being commended for not being stand-offish in camp despite (it is hinted) his superior rank, while at the same time Pliny is reminding him that in those days he (Pliny) was the older of the two in the intimacy of the barracks and therefore to some extent, however small, Titus's superior.

³ This is not a very strong point because the context of Mucianus's speech indicates that Germania was uppermost in his mind at the time, so there was no need for him to mention Titus's service in Britannia as well.

⁴ Jones: *Titus*, 12-17. Relevant support from Birley is cited by Jones in these pages. Jones also uses a couple of points from Pliny's career during his argument—(i) p. 15 *scimus* (*NH* 33.143) referring to Paulinus's silver plate and (ii) the eclipse of 59, mentioned in *NH* 2.180—but as I have reservations about both of them and neither affects Jones's over-all suggestion, I have not included them in my summary of his argument.

Since the average age of military tribunes varied from their late twenties to early thirties,¹ Titus's appointment thereto at about the age of twenty-one would be in advance of the usual.² Had he received this distinction as early as Syme proposed, he would surely have been the object of flattering remarks by his later biographers. Their silence on the point suggests that he was not given the post at an age regarded as exceptionally early.³ So if 61 is about right, Titus was twenty-one and Pliny thirty-seven or thirty-eight, the sort of age one might expect, as we shall see in the next section, at this stage in a regular military *cursus*.

This now brings us to the question, in which part of Germania were Titus and Pliny *contubernales*? Jones has no doubt. 'As *trib. mil'*, he says, '[Titus] is attested as serving in the same province as had his father with *leg. leg. II Augustæ*—Upper Germany and Britain (*Titus* 4.1)'.⁴ Now, while it is true that Vespasian did serve in Germania Superior, in the Spring of 43, he and his legion were sent to Britannia where Vespasian stayed until c. 47 and the legion until the mid-seventies or even later.⁵ So, by the time Titus was ready for military service, II Augusta had long been in Britannia. Suetonius, in fact, says merely that Titus was 'tribunus militum et in Germania et in Britannia', and Tacitus that he had a distinguished career 'apud Germanicos exercitus'.⁶ In consequence, we

1 Keppie: *Army*, 178. Birley: *Army*, 162. See also *infra*, pp. 62-4.

2 Since Titus had to serve as *vigintivir*, it is clear—as Jones points out, *op. cit.*, 16—that he could not have served as tribune as early as 57/58 as Syme suggested.

3 We know of two men who were *præfectus cohortis* and *præfectus alæ* respectively at the age of nineteen = (i) Devijver: *PME* S11 (*titulus sepulcralis*, beginning of the second century AD—?), also appointed augur, apparently, after his term as *præfectus cohortis*; and (ii) C257 (*titulus sepulcralis*, first part of the first century AD). If Titus had received similarly early promotion, that would still give a date of 58/59; and if he followed what appears to have been the regular military *cursus*, military tribune would have been his second, not his first post, and thus we should have to presume an earlier appointment at an age which certainly ought to have attracted later flatteries and attention.

4 *The Emperor Titus*, 14. His literary reference is to Suetonius.

5 Suetonius: *Vespasian* 4.1. Tacitus: *Historiæ* 3.44. Josephus: *BJ* 3.1.2. *PW* 12.1459. Cf., *Ibid.*, 6.2628. *PIR*² F398 = Vespasian, referring only to Suetonius. Parker: *The Roman Legions*, 122. Radnoti: *Roman Frontier Studies*, 155. Keppie: *Army*, 205. Birley: *Fasti*, 219, 227. Speidel: *The Framework of an Imperial Legion*, 6.

6 Suetonius: *Titus* 4.1. Tacitus: *Historiæ* 2.77. Birley suggests that Titus came to Britannia some time after Boudicca's revolt in 60: *Fasti*, 269.

have no direct evidence to tell us where the *contubernium* with Pliny took place. All we can say is that the evidence regarding Pliny, which we have reviewed so far, suggests that he knew more about Germania Inferior than Germania Superior, and that his military career can be described without taking Germania Superior into account. If this is anything to go by, it suggests in turn that Titus did not necessarily serve in his father's old province but saw military life in Germania Inferior instead.¹ The date proposed by Jones—61—seems reasonable.

(viii) The Regular Military Cursus

We come now to the question, was there a regular *cursus* for equestrian officers and if so, what was it? The simple answer to the first part of the question seems to be that there was. It was usual for equestrians to serve in three offices, viz., (i) *præfectus cohortis*, (ii) *tribunus cohortis* or *legionis*, (iii) *præfectus equitum* or *alæ*, a career created by Augustus, re-fashioned by Claudius who switched the order of (ii) and (iii)—a divagation which does not appear to have outlasted the Emperor himself—and established as the norm by the end of the Flavian

¹ One may add here that the references to *Germani*/*Germania* cited by Münzer do not represent much more than half Pliny's references in the *NH*. Those Münzer did not use (nineteen in all) are as follows: (i) 1.4; (ii) 2.167, referring to the reign of Augustus; (iii) 2.170, a story from Nepos; (iv) 2.246, a piece of personal research by Pliny ('*cognitum habeo*') that huge islands, recently discovered, lie beyond Germania; (v) 3.25, perhaps taken from official records, that a Spanish tribe, the Oretani, are surnamed 'Germani'; (vi) 3.132, the Alps divide Italy from Germania; (vii) 4.80, the extent of the territory of the *Iazyges*, a passage which may well owe something to Agrippa cited in 4.81; (viii) 4.81 the extent of the territory of the Basternæ and other Germani—perhaps deriving from Agrippa; (ix) 4.96, the Inguæones in the north, by Scandinavia: no hint of personal knowledge and a reference to '*quidam ... tradunt*' in 4.97; (x) 4.102, Britannia lies opposite Germania, Gallia, Hispania; (xi) 4.106 = a list of Germanic tribes living on the banks of the Rhine; (xii) 6.219, a geographical mention of Germania. This is probably derived from written sources; (xiii) 7.84, an incident from the life of Tiberius; (xiv) 9.45, a reference to a type of fish drawn from the Main and the Danube. As I said on page 51, this is a piece of information which could have come from autopsy, but equally well from oral evidence (xv) 17.26, '*quid laudatius Germaniæ pabulis?*' (xvi) 19.83, in Germania, the radish grows as big as a baby; (xvii) 37.35, the Guiones, mentioned by Pytheas; (xviii) 37.36, Nikias's theory of the origin of amber; (xix) 37.61, Metrodoros of Skepsis says that *adamas* is found in Germania.

period, by which time the *cursus* had certainly reverted to Augustus's sequence of offices.¹

Analysis by Davies of five hundred legionary careers has shown that the age-range for recruits to the ranks (as opposed to officers) stretched between 13 and 36 with three out of four men joining between the ages of 18 and 23. Had officers filled civilian posts before entering the army—and we have seen evidence that many did, about half our sample, in fact—they are likely to have been about thirty when they joined. Each recruit was subject to a preliminary examination and then a four-month *probatio*, after which he was enrolled with his legion. Officers went through the same process, so we may assume that this, or at least something very like it, was Pliny's experience, too.²

As far as the military career recorded in *PME* is concerned, we find that sometimes three offices appear, sometimes two, sometimes one, and it is difficult to say for certain in most cases whether this is because that individual achieved only one or two offices out of a complete *cursus* of three; or because only one or two offices were recorded owing to the nature of the inscription; or because only a part of the record of his career has survived. An analysis of 299 equestrian military careers dated between the beginning of Augustus's reign and the end of Nero's produces the following information:

- (a) Those recorded as holding the rank of *praefectus cohortis* only = 11 (3.7%).
- (b) Those recorded as holding the rank of *praefectus cohortis* followed by *tribunus cohortis/legionis* = 4 (1.4%).
- (c) Those recorded as holding the rank of *tribunus cohortis/legionis* only = 173 (58.8%).
- (d) Those recorded as holding the rank *tribunus* followed by *praefectus ala* = 33 (11.2%).

¹ Keppie: *Army*, 177. Homo: *Roman Political Institutions*, 346. Holder: *Roman Army in Britain*, 61. Claudius's experiments in the arrangements of holding equestrian posts are discussed further by Devijver: *Equestrian Officers*, 275-6. Holder: *Auxilia*, 76 and Démougin: *L'ordre équestre*, 293-8.

² See Davies: *Service in the Roman Army*, chapter 1, especially pp. 11-17 and 75. His remarks are based largely, but not exclusively, upon Vegetius. On officers, see further Devijver: *Equestrian Officers*, 277-8. Dobson maintains that legionary centurions and equestrian officers tended to enter the service at about the age of thirty after filling civilian offices in their municipality, *Ancient Society* 3 (1972), 194.

(e) Those recorded as holding the rank *praefectus alæ* only = 29 (9.9%).

(f) Those recorded as holding all three ranks = 5 (1.7%).

Because Claudius altered the order of offices, I have excluded from these totals 39 careers falling within his reign or beginning therein and extending into Nero's. This is 13.2% of the total. I have also omitted five whose designations of office are not clear or which do not seem to follow the expected pattern.¹

Now, given that there seems to have been a regular three-stage *cursus* throughout the whole period covered by these figures—Claudius's reign being excluded—it is fair to suggest that those who are recorded as having only the first rank may indeed have held only that one, except that we always have to bear in mind the nature of the inscription. Is it a full or partial account? But once we come to *tribunus militum* or *praefectus alæ*, the more likely it is that a single record represents the highest rank the man has attained at the time of the recording, rather than the only one. If, for example, one has an English MA, one does not normally record that one has a BA as well. That is taken for granted. So something of the kind may help to account for the very low percentages of those recording two offices, or indeed, all three. Moreover, since these were active and not honorary ranks in the army, one is inclined to assume that a *tribunus* had served time as a *praefectus cohortis* and that (except during Claudius's reign) a *praefectus alæ* had filled the other two offices previously.² Thus, in our sample, 60.2% may be assumed to have held the first and second posts and 22.8% held three or may be assumed to have held all three.

In Pliny's case, we know from his nephew that he had been a *praefectus alæ*,³ so we may be justified in inferring one of two things: (i) if he served during Claudius's reign, he is likely to have filled one other office (*praefectus cohortis*) before, and be looking forward to serving as

¹ These are all attributed to the reign of Augustus: (a) C81, *tribunus militum* followed by *praefectus cohortis*; (b) M20, *tribunus cohortis* followed by *praefectus cohortium*; (c) M57, *tribunus militum* followed simply by *praefectus* which could be either *fabrum* or *equitum*; (d) P85, *praefectus equitum* followed by *tribunus cohortis*; (e) V109, *praefectus equitum* followed by *tribunus militum*.

² There is a possible exception in C25, dated mid first century AD, who apparently leaped from *praefectus cohortis* to *praefectus alæ*. But the date suggests that this may belong to the period of Claudius's re-arrangement. See further Cheeseman: *Auxilia*, 94. Keppie: *Army*, 177-8. Holder: *Auxilia*, 75-6 and *Army*, 63.

³ 'Cum praefectus alæ militaret', *Ep* 3.5.3.

tribunus later on; (ii) if, on the other hand, he served under Nero, he would have filled the first two posts already, and *praefectus alæ* represented the third and final stage in the normal equestrian *cursus*. What is more, further analysis of the careers in *PME* shows that if you wanted a procuratorial career after your military service, you must have achieved the rank of *tribunus* at least.¹ So here is another reason for thinking that Pliny must have filled at least two out of the three posts, and very likely all three, to qualify himself for his later civil service.

But could Pliny have held the post of *praefectus alæ* alone, as a first and only appointment? The answer is that it was possible for him to have done so, but unlikely that he did. The evidence for such a single commission is late, almost entirely from the last years of Nero's reign or the early years of Vespasian's, and it indicates that such men were rapidly promoted to important political posts. Other cases suggest that the single commission was the deliberate choice of a man who wished to crown a municipal or provincial career, and once again the evidence is late, from the Flavian period at the earliest.² Neither instance applies to Pliny. Pliny's appointment to procuratorships came as the result of a change of Imperial dynasty. Whether he would have had the same success had Nero lived is impossible to say, but it may be significant that his nephew tells us he lay low during the last years of Nero's reign and wrote non-controversial volumes on grammar.³ One cannot say for sure whether he was still in the army while he did so, or had returned to civilian life. But nothing about Pliny's career as far as the accession of Vespasian leads us to think he was a military or civilian high-flier, and that is what appointment to *praefectus alæ* alone suggests.

Granted, therefore, that there is nothing in the available evidence which entitles us to suggest that Pliny's career would have followed an unusual course, we may reasonably infer that he entered the military *cursus* as *praefectus cohortis* and in due time was promoted *tribunus*

1 A217; B8, 16; C22, 31, 41, 42, 44, 128, 158, 178, 184, 242, 253; D8; E5; F70; H14; I120, 128, 144; L48; M13; O11, 12, 16; P30, 89, 95; R1, 25; S45; U20; V29, 80, 106. See also Keppie: *Army*, 178. Alföldy is not sure whether Pliny was *praefectus equitum* or *tribunus militum*, but he dates Pliny's being *praefectus alæ* to 47: *Die Hilfstruppen*, 112, 117, 144.

2 Holder: *Auxilia*, 78-9. Le Roux: *L'armée*, 309.

3 'Scripsit sub Nerone novissimis annis, cum omne studiorum genus paulo liberius et erectius periculosum servitus fecisset', *Ep.* 3.5.5.

militum and *praefectus alæ*.¹ At what age did men usually hold these offices? Opinion varies somewhat. Homo suggests that the average age of military tribunes was twenty-five; Keppie that they would be in their late twenties or early thirties; Birley that they were in their early thirties, adding that 'individual appointments lasted three or four years on average ... A man who had been through the three successive grades ... might well have had nine or ten years' continuous military service, if not considerably more'.² Birley supports this by listing the ages of seventy-four men at their appointment as equestrian officers: fifty-three were aged thirty and over, and the average age was thirty-eight.³ There are three distinct groups among his figures: (i) men in their late teens or early twenties; (ii) men in their late twenties or early thirties; (iii) men in their later years. Birley says that most men who were appointed to their first equestrian command came from the second group, and he suggests that most are likely to have filled the highest municipal office at home, such as *duovir*, for which one normally had to be aged thirty or more, before entering military service as a step, (so they might hope), to higher civilian appointment. Those in the younger group seem to have come from a military background with subsequent early opportunities for preparing themselves for a military career; while the older men may have taken longer to work their way up the municipal ladder or to attract sufficiently influential patronage to smooth their way into equestrian military rank.

But patronage was important regardless of one's age, for it was the way to get an appointment in the first place,⁴ and to get promotion in the second. According to Holder,

¹ Unless we date his career to Claudius's reign, in which case he would have been *praefectus cohortis* and then *praefectus alæ* and would not necessarily have proceeded to *tribunus militum*.

² Homo: *Roman Political Institutions*, 347. Cf., Holder: *Army*, 162, 150. Devijver: *ZPE* 75 (1988), 207-14, especially 214. A career typical of the early Principate might see a man as *tribunus militum* for six years, *praefectus alæ* for six, and *praefectus fabrum* for two. After Claudius, however, the average duration of a *militia* would drop to three years. Devijver: *Ancient Society* 23 (1992), 65.

³ *Op. cit., supra*, 148-9. The ages range from nineteen to sixty and the length of service in individual posts from sixteen years down to just over two, (page 150). The breakdown of figures in the rest of this paragraph comes from Birley, *loc. cit.*

⁴ Dobson: *Ancient Society* 3 (1972), 195.

hopeful officers could attract a patron in a number of ways. Most did so by embarking on an administrative career in their home communities and reaching the duovirate ... They would be at least twenty-five years old before obtaining a commission. Some would have been considerably older ... Of the rest who record no posts before their military career, it is likely that they already have patrons through family connections. These equestrians would have then obtained a first commission at about the age of twenty.¹

How does this information apply to Pliny? He had an excellent patron in Pomponius Secundus who was suffect consul in 44, just when Pliny was about twenty. If we accept Münzer's theory about Pliny's fighting under Domitius Corbulo in c. 47, one can see that Secundus's influence might have been exerted to obtain him his first commission in about 44, which would have allowed three years (perhaps a little less) for Pliny to have progressed to *praefectus alæ* at the time of the Chaucian campaign, although such a supposition about his advancement does not affect the validity of the suggestion about his first post. On the other hand, as we have seen, (*supra*, pp. 52-3), Secundus was no less a powerful patron in the early fifties, having conducted a successful expedition against the Chatti in 50 and been accorded triumphal insignia as a reward and mark of distinction.² Had Pliny fulfilled civilian office to the age of thirty and sought an equestrian military commission soon after, (which brings us to 53/54), Secundus could still have been in a position to extend the necessary help.

How long could a man expect to fill his office in this equestrian *cursus*? As we have seen, Birley suggested an average of three or four years, with the possibility that the time might be very much longer. Analysis of the material available in *PME* shows that anyone following the *cursus* could expect to spend therein between nine and twelve years on average, and evidence of longer careers is not wanting (See Appendix 4).³

¹ *The Roman Army in Britain*, 61-2. Cf., Birley: *Fasti*, 141-2, 139-40. *PME*: C257 illustrates the point quite well. T. Crustidius Briso held the post of *praefectus equitum* and died at the age of nineteen. His early appointment, as Devijver points out *ad locum*, may well have owed something to family connections. Cf., S11 = C. Saturius who was nineteen years and twenty-seven days old when he died, having held the post of *praefectus cohortis*.

² Tacitus: *Annales* 12.27.3-4 and 28.1-2.

³ See also Dobson: *Ancient Society* 3 (1972), 202.

There is scanty evidence about the age at which men received these various appointments, but the following are recorded:

Præfectus cohortis	Tribunus cohortis/legionis	Præfectus alæ
E14 = 55	A217 = c. 39	H9 = 41
I136 = 30	H9 = c. 35	I136 = 40
M4 = c.25	I 136 = c. 33	
S56 = c. 27		

Figure 4

Now, in addition to these we can add information about the rank held by men when they died and their age at death. This will say nothing about how long they had held the appointment, but it may reveal consistency in age linked to office, and that must be suggestive.

Præfectus cohortis	Tribunus cohortis/legionis	Præfectus alæ
C235 = 35	A229 = 40	C246 = 66.66 [+ 10 days]
S11 = 19 [+ 27 days]	C145 = 38-43	
V38 = 55	C283 = 45	
	F98 = 40	
	H16 = 37	
	I73 = 45	
	I76 = 47	
	I103 = 37.5 [+ 20 days]	
	I106 = 25-28	
	I137 = 53	
	M30 = 36	
	P60 = 23.5	
	P75 = 45	
	S65 = 35.25 [+ 17 days]	
	S70 = 36	
	V3 = 38	
	V28 = 38-43	
	V79 = 44	

Figure 5

Omitting C246 who, at the age of nearly sixty-seven, is obviously an unusual case, there are thirty men in the two lists. Of these, only five are under thirty years of age. The trend, therefore, does seem to be consistent with later rather than early entry into the *cursus*.

Now, clearly one has to be careful in trying to use this material. It is a very small sample; we are often uncertain about how many previous civilian offices a man may have held (if any) before coming into the *cursus* and about how long these individual offices may have lasted, or how often he may have held the same office. All this must have affected the age at which a man took up an equestrian career. Moreover, once embarked upon the *cursus*, he would find that the length of time he spent in a given appointment depended upon some form of patronage or favourable notice. As Holder remarks,

Appointment to cohort prefectures ... was at the discretion of the governor. The ala commanders ... were selected by the Emperor on the basis of confidential reports supplied by the governors. To achieve an appointment, the support of a patron was necessary ... Even obtaining a second appointment did not necessarily bring promotion to a higher grade.

In addition, 'an equestrian might be unemployed for some time before obtaining a further appointment'.¹ We have examples of this in I136 and M4.

Still, the normal pattern is fairly clear: (i) a man usually served in all three offices of the *cursus* if he could, and (ii) he was likely to be in his late twenties or early thirties by the time he managed his first appointment, especially if he had had a civilian career first. Evidence suggests that *duovir* was the office most frequently held before military service by men who were going to enter upon the *cursus*.²

Conclusions

1) There was a regular equestrian military *cursus* consisting of three offices: *praefectus cohortis*, *tribunus legionis*, *praefectus alae*. The second and third were switched by Claudius but returned to their previous pattern after his death.

1 *The Roman Army in Britain*, 61-2. Cf., Birley: *Fasti*, 142-3.

2 Holder: *Auxilia*, 73.

- 2) Men generally joined the *cursus* at about the age of thirty after a civilian career ending in an office such as that of *duovir*. There are exceptions but these cannot be legitimately be said to apply in Pliny's case.
- 3) Pomponius Secundus could have acted as an effective patron for Pliny in both the forties and fifties.¹
- 4) Pliny was a *praefectus alæ*. Had he served under Claudius, this would have been his second appointment. Had he served under Nero, it would have been his third, since the likelihood of its being his first and only appointment is not very great.²
- 5) It is possible that Pliny held all three offices in Germania Inferior.³
- 6) The expected length of service in such a *cursus* was about ten years, although there are examples of shorter and longer careers.

1 It was perfectly possible, of course, to have more than one patron at a time. See Saller in Wallace-Hadrill: *Patronage and Ancient Society*, 53, 55, 60. To whom might Pliny have turned? Pompeius Paulinus, Duvius Avitus and Scribonius Rufus were the military commanders in Germania Inferior from the mid-fifties until the Winter of 66. Domitius Corbulo was in Armenia and Syria throughout the period 58-66, but he had been in charge of the campaign against the Chauci in c. 47, and we know that Pliny knew him well enough, at least in later years, to be able to question him about the Armenian campaign. Lucius Antistius Vetus became governor of Germania Superior in c. 58. He wrote a geography which Pliny claims to have used in *NH* Books 3-6. (See further Bardon: *La littérature latine inconnue* 2.143; Koestermann: *Tacitus Annalen* 3.338.9; *PIR*² A776). Pliny's possible use of his work, however, does not necessarily make him a patron and in any case, as we have seen, there are reasons for suggesting that Pliny did not serve in Germania Superior at all. Nor is there any evidence of any link between Pliny and Antistius's successor, Sulpicius Scribonius Proculus (59-Winter 66). That leaves Titus and, through him, Vespasian as possibly useful acquaintances, although the Flavians did not really rise to power until after the death of Agrippina in March 59.

2 The plural 'equestribus militiis industrie functus' of the 'Suetonian' *Vita* implies that he filled more than one office.

3 There are plenty of examples of equestrian officers' holding all three appointments within the same province. See Birley: *Fasti*, 167.

7) Pliny and Titus may have been *contubernales* in Germania Inferior in c. 61.

The difficulties with Münzer's hypothesis about Pliny's military career are that it makes inferences which are not always soundly based and that it does not try to take into account possibilities, such as his having a pre-military career, which would upset the dating of his supposed participation in such events as the Chaucian campaign of c. 47. Service with Secundus in Germania Superior in 50/51 is unwarranted by any of the available evidence. A return to Germania Inferior in 57 and *contubernium* with Titus at that time is also not well-founded. A different approach, which allows him the common practice of a pre-military career, puts him in Germania Inferior more or less a decade after Münzer's dates, and offers a plausible explanation of where he could have been, what he might have been doing, and how his career could have developed.

(vi) Career (iii): Procuratorships

We do not know when Pliny left the army. It has been tacitly assumed that he returned to civilian life and practised law during the last years of Nero's reign but, as I have pointed out (*supra*, p. 19), Pliny the Younger's phrasing in *Ep.* 3.5.7 does not necessarily imply that the legal practice came later rather than earlier. Nor can we infer from the information that Pliny wrote non-controversial works at this time that Pliny must have retired from the army. One could write and serve at the same time, as Pliny's own *De Iaculatione Equestri*, written 'cum præfectus alæ militaret' attests; compare Columella who was asked by his commander, Marcus Trebellius, to provide him with a method of measuring land, (*De Agricultura* 5.1.2).¹ Not long after the accession of Vespasian, however, Pliny was given a start in a procuratorial career.

Under the Principate, provinces were divided into two kinds: 'senatorial' which were governed by ex-consuls or ex-prætors with the title of *proconsul* in a term of office which usually lasted for a year; and 'Imperial' whose governors, entitled *legati*, were of senatorial rank or equestrians selected by the Emperor himself. The *legati* might be in office

¹ See also Démougin: *L'ordre équestre*, 756.

for an indefinite period.¹ The procurator was an Imperial agent whose particular concern was the collection of taxes within a province. In senatorial provinces he looked after the Imperial estates in particular, and in Imperial provinces he collected tribute, paid the troops, and so forth.² In senatorial provinces the procurator was reasonably independent: in Imperial provinces he worked closely with the legate.

Münzer assigned four procuratorships to Pliny. They are (i) Gallia Narbonensis in 70, (ii) Africa in 70-72, (iii) Hispania Tarraconensis in 72-74, and (iv) Gallia Belgica in 74-76.³ This suggestion has been widely, though not universally, accepted. No one, however, has seriously attempted to assign to Pliny any other province than one or more of these four. Pliny the Younger mentions only Hispania (*Ep.* 3.5.17), although this cannot be taken to imply that his uncle had only this one, because the context of the letter does not require the mention of more than one procuratorship. The *Vita* gives no number but speaks of 'procuraciones splendidissimas et continuas', which means that (a) there were at least two posts, (b) they were considered major appointments, and (c) they were held one after the other without interval.

Africa and Gallia Narbonensis were senatorial provinces. Gallia Belgica and Hispania Tarraconensis were Imperial.⁴

When it comes to asking ourselves whether Pliny served in two, three, or all four of these, we need to pay close attention to any clues which may guide us to sensible conjecture, and for this purpose I intend to employ the same guide-lines I used in reviewing the evidence for Pliny's military career, namely: (i) claims of autopsy, (ii) personal statement, (iii) claims of personal knowledge, (iv) others mention Pliny's presence, (v) inference.

GALLIA NARBONENSIS

Commentators are divided in their opinions on whether Pliny was or was not procurator here. Münzer, Pflaum, and König-Winkler, for example, are in favour: Syme, Sherwin-White and Reynolds have

1 Wesenburg in *PW* 23.1012-13.

2 Miller: *Historia* 13 (1964), 184-5, 182-3. Cf., Pflaum in *PW* 23.1269-70. Levick: *Government*, 16 and 55. Burton: *Chiron*, 23 (1993), 19.

3 *Op. cit.*, *supra* note 47, pp. 103-111. Cf., Syme: *RP* 2.764-5.

4 Pflaum: *Abrégé des procurateurs équestres*, 13.

reservations and see Pliny as a visitor to rather than an official in the province.¹ Let us now apply my suggested guide-lines to the evidence.

(i) Claims of autopsy: There is only one example of this. Referring to meteoric stones, Pliny says, 'ego ipse vidi in Vocontiorum agro paulo ante delatum', (2.150).

(ii) Personal statement: Nowhere else does Pliny say he was in the province.

(iii) Claim of personal knowledge: An *eques* called Julius Victor, from Vocontian territory, had been ordered by his doctors not to drink liquids, and from youth to old age he had trained himself to obey this precept. Pliny uses 'scimus' in connection with this anecdote (7.78). What we do not know is whence Pliny learned the story, since it need not have been in Vocontian territory itself.

(iv) Others mention Pliny's presence: no examples.

(v) Inference: Pliny makes reference to several places in Gallia Narbonensis. It is instructive to follow these on Map 5; (a) Forum Julii, 'Foroiulienses piscem ex quo faciunt [garum] lupum appellant', (31.95): (b) Arelate, 'est quæ boum mugitus imitetur [avis], in Arelatensi agro taurus appellata, alioquin parva est', (10.116): (c) Vocontii, 'Novaria ex Vertamacoris, Vocontiorum hodieque pago, non (ut Cato existimat) Ligurum', (3.124): 'est etiamnum aliud genus passi, quod vocat dulce Narbonensis provincia et in ea maxime Vocontii', (14.83). There follows a detailed section (84) describing how the grapes are treated: 'equitem Romanum e Vocontiis a divo Claudio principe interemptum' because he kept a snake's egg in the fold of his toga during a law-suit, (29.54): (d) Nemausus, 'est in Narbonensi provincia nobilis fons Orgæ nomine', (18.190). Oxen are so fond of the plants growing therein that they plunge their heads right under the water to get at them: 'est provincia Narbonensis et in Nemausiensi agro stagnum Latera appellatum ubi cum homine delphini societate piscantur', (9.29). A detailed description of the *modus operandi* follows, (29-32): (e) Piscenæ, on wool, 'similis circa Piscinas provinciæ Narbonensis', (8.191). One cannot be sure exactly

¹ Münzer: *BJ*, 103 sq. Pflaum: *Les carrières procuratoriennes*, 109 sq. König-Winkler: *Plinius der Ältere*, 19 and 23. Cf., Ziegler: *PW* 21.277. Syme: *RP* 2.751-2 and 7.503. Sherwin-White: *Letters*, 221. Reynolds in French-Greenaway: *Science*, 8.

where this is, but for the suggestion that it may be modern Pézenas or Béziers, see Gössler, in *PW* 20.1775.

Now, the interesting thing about these places is that four of them are major stopping-points on the southern road between Italy and Hispania Tarraconensis. The exception is Vocontian territory, but this can be explained (as Syme points out, *RP* 2.752) by remembering that the two legates of Germania Inferior under whom Pliny may have served, Pompeius Paulinus and Duuius Avitus, came from Arelate and Vasio Vocontiorum respectively. Thus, one can envisage Pliny on his way from Italy to (say) Hispania Tarraconensis staying with Paulinus, or Paulinus's family, at Arelate and being taken to see Avitus, or Avitus's family, at Vasio whence he picked up his Vocontian information and where he saw the meteoric stone. The suggestion of a visit fits the information perfectly well, without any need to have Pliny procurator of the province.¹

AFRICA

Commentators seem to be largely in agreement. Pliny was procurator in Africa between about 71 and 72, or at any rate visited Africa during those years.² Only two people deny him the office at all.³

¹ There are three references to Vienna: (a) three named varieties of wine to be found there (14.18); (b) 'Viennenses . . . creduntur' to sell wine flavoured with pitch, but only locally (14.57); (c) 'in Narbonensi provincia clarissimus ventorum est Circius . . . sed ne Viennem quidem eiusdem provinciae urbem attingens, paucis ante milibus iugi modici occursum tantus ille ventus coercetur', (2.121). None of these items, however, requires Pliny to have been to Vienna himself. Syme draws attention to Julius Atticus and Julius Graecinus, both of whom wrote about the province and both of whom Pliny acknowledges as sources (Atticus = Books 14, 15, 17; Graecinus = Books 14, 15, 17, 18). Finally, 3.31-37 gives a survey of Gallia Narbonensis, partly based on Agrippa. Pliny adds that Galba included two tribes dwelling in the Alps (37), so this at least must be post June 68. See also the full range of references to the province collected by Chevallier, *RBPPh* 60 (1982), 136-62.

² Münzer, *BJ* 109. Pflaum, 114. Nailis, 22. Syme: *RP* 2.754-5, 764. Jones (by implication), *Phoenix* 22 (1968), 126. Reynolds: *op. cit.* (p. 67, note 1), 8 (who separates his remarks about procuratorships and visits, putting Africa firmly in the former camp). H. Pavis d'Escurae, *Ktema* 5 (1980), 178. This relies upon Pflaum and Syme. Later, on p. 179, he produces the telling phrase 'les touristes du xx^e siècle, comme Pline . . .', thereby indicating that he is prepared to have it both ways—a reasonable point since neither is incompatible with the other. Sherwin-White, 219,

(i) Claims of autopsy: There are three examples: (a) 'Ipse in Africa vidi mutatum in marem nuptiarum die L. Consitium civem Thysdritanum . . . [lacuna]', (7.36);¹ (b) 'In Byzacio Africæ . . . fertilem campum nullis, cum siccum est, arabilem tauris, post imbres vili asello et a parte altera iugi anu vomerem trahente vidimus scindi', (17.41); (c) 'vidimusque Psyllos in certamen e pratinis candefactis eas admittentes, ociore etiam quam aspidum pernicie', (25.123).

Two of these, (a) and (b), may be connected, as Thysdrus was a city of Byzacium of which Hadrumetum was the capital. Hence, presumably, Münzer's suggestion that Pliny was procurator of the Hadrumetine district, (*op. cit.*, 109). Certainly Pliny's information about the fertility of the area's grain production (5.24 and 18.94-5) is accurate, as are his remarks about the richness of the palms at neighbouring Gabes (18.188-9).² But none of these three references gives any direct indication that he himself was there, (a) says only that he was in Africa.

(ii) Personal statement: Only in 7.36 does Pliny say he was in Africa.

(iii) Claim of personal knowledge: Pliny does not use 'scio/scimus' or any similar verb in connection with Africa.

(iv) Others mention Pliny's presence: no examples.

221. Syme later seems to have changed his mind and suggested that Pliny could have held office in c. 59. See *RP* 7.502-3.

³ Ziegler in *PW* 21.277. Thomasson omits Pliny from his list of African procurators, *Lateralculi Præsidium*, 'Appendix Provinciæ Africæ'.

¹ Aulus Gellius, presumably using a copy of Pliny in his possession, supplied 'vivebatque cum proderem hæc' at the end of this sentence, *NA* 9.4.15. Something more is required, too, as the beginning of the next sentence seems to be missing. The Budé apparatus suggests supplying 'Aristoteles tradit'. The name 'Consitius' does not, unfortunately, help us to date the passage. It appears as 'Consitius' or 'Cossicius' in the mss., 'Cossitius' in Gellius, and 'Constitius' in the Loeb text which offers no explanation for the change. The Budé edition of Book 7 sticks to 'Consitius' but Syme, in his discussion of Pliny's procuratorial career, offers 'Considius' instead: *RP* 2.754, note 2. [Cf., Thomasson, 755 note 1 and Eck, *Senatoren von Vespasien bei Hadrian*, 749, note 3. Syme may well be right. There are four other examples of this name in *PIR* 2.303 = nos. 1278-81. See *PW* 4.912-14 for several more. Littré printed 'Cossicius', the reading of *R* and *d*]. None of these forms, however, appears in records from Africa. The only 'Considius' was C. Considius Longus, prætor in Africa in 49 BC and murdered by natives in about 46. See *PW* 4.913-14 (no.11).

² Pavis d'Escurae, *op. cit.*, supra, 178-9.

(v) Inference: Münzer cited five texts: (a) 7.36, (b) 17.41, both of which involve autopsy, although neither is datable, (c) 5.41. This gives a description of Meninx and Cercina, the former a town in an island of the same name off the north coast of Africa, to the south-east of the Lesser Syrtis (cf., 9.127), the latter an island about a hundred miles distant from it. According to the Budé note *ad locum*, the passage owes something at least to Eratosthenes (fr. 308, Berger) and in consequence one cannot really advance it as evidence of Pliny's personal knowledge of the area. (d) 13.104-6 is a detailed account of the lotos-plant. Pliny is contrasting some of his remarks with those of Nepos, and he also lets us know that at least part of his information comes from oral evidence ('ferunt'). It may or may not be significant that he tells us the finest lotos comes from round the Syrtes, an area which appears more than once in his account of African subjects. Certainly the passage includes no direct evidence of Pliny's personal observation. (e) 18.88, a detailed account of the fertility of Tacape which he describes as a city 'in mediis harenis petentibus Syrtes Leptimque Magnam'. Syme (*RP* 2.754) adds two more references. (i) 25.123, the third example of autopsy and (ii) 35.169, a description of the earthen walls of Africa and Spain.¹

Now, the three autopsies undoubtedly amount to a personal visit by Pliny, and as Africa, unlike Gallia Narbonensis, cannot really be regarded as being *en route* for somewhere else, the most feasible explanation for Pliny's presence is that he held a government post there: in other words, he was procurator.² The question is, when? Syme has argued for 71-2 (*RP* 2.754-5), basing his suggestion upon dating the African procuratorships of two other men, (i) Tampus Flavianus who, according to Syme, served between 70 and 71, and (ii) Vibius Crispus who is supposed to have served

¹ The word 'Africa' occurs 164 times in the *NH*, but the vast majority of these references are short—part of a list or simply a passing mention; or they refer to an historical event or are part of a quotation from someone else's work. Four record the local African word for something: 8.174; 11.124; 12.133 and 13.104 which then goes on to give a detailed description of the plant in question. Twice, African information is preceded by Indian on the same subject: 8.24-5 (elephants) and 8.120-2 (chamæleon). See also 7.43; 8.24; 10.201-2; 13.125; 28.24; 31.81. What all these have in common is that nowhere does Pliny indicate any direct observation on his part.

² This is an assumption, of course, but it seems reasonable under the circumstances.

between 72 and 73.¹ Both men appear in the *NH*. We shall look at them separately.

(i) Flavianus. He appears in the *NH* 9.26 where Pliny describes how Flavianus soused with perfume a friendly dolphin which used to play with swimmers in the sea by Hippo Diarrhytus. Pliny adds that Flavianus was proconsul of Africa at the time. The incident happened, says Pliny, 'intra hos annos' which Syme interprets as 'the most recent epoch, in contrast to the one which went before' (*RP* 2.754), and indeed this tale is followed by another set in the time of Alexander the Great. Bosworth, however, points out that 'hi anni' does not necessarily refer to 'the new turn in history, and in the life of Pliny, consequent upon the accession of Vespasian', which Syme believes it does and he shows, with three examples out of five, that 'hi anni' can go back as far as the reigns of Tiberius and Augustus and even beyond.²

However, Syme offers as close parallels to this use of 'intra hos annos' (i) 14.43 which he dates to 70 and (ii) 19.35 which he dates to 73 or 74. Now, 14.43 says, 'septem his annis in Narbonensis provinciae Alba Helvia inventa est vitis uno die deflorescens ob id tutissima'. It is true, of course, that 'septem his annis' means 'within the last seven years', but there is no firm indication that the event referred to took place in 70. I presume that date was obtained by counting back seven years from 77 when Pliny is generally assumed to have written his dedicatory letter to

¹ See also Syme, *REA* 58 (1956), 238-9. Syme's proposition is accepted *in toto* by Townend, *JRS* 51 (1961), 60. There is not, however, general agreement. Eck (*Senatoren*, 234) agrees with Syme, but Vogel-Weidemann (*Acta Classica* 18 [1975], 149-53) and Bosworth (*Athenæum* 51 [1973], 75-6 [see also Wiegels, *Hermes* 106 (1978), 197]) put Crispus earlier. Opinion can be summarised thus:

Syme and Eck		Others	
Flavianus	70-71	?	70-71
[Saturninus]	71-72	Crispus	71-72
Crispus	72-73	Saturninus	72-73

² *Athenæum* 51 (1973), 70. The quotation is from Syme, *RP* 2.754. Bosworth's examples are not cited in the clearest fashion: 12.13 refers to Augustus; 14.143 to Tiberius; 14.49, as I shall suggest in Chapter 2, probably refers to Vespasian; and 18.317 takes us back a hundred years ('intra c annos'). Bosworth also cites 18.55 ('intra hos x annos'), but I do not see how he relates this to the reigns of either Augustus or Tiberius. There is no dating clue elsewhere in the passage at all. The main point he wishes to make, however, is not affected.

Titus. But 'within the last seven years' belongs to Book 14 and we have no clear idea when Pliny was writing it. If he began the *NH* in 72, 'seven years' takes the incident back to the late sixties; if he began it in 76, 'seven years' places it in the early seventies. In consequence, 14.43 is not as precisely datable as Syme suggests.

His second example (19.35) says, 'Larcio Licino praetorio viro iura reddenti in Hispania Carthagine paucis his annis scimus accidisse mordenti tuber ut deprehensus intus denarius primos dentes inflecteret'. Syme's date for this depends on the Vespasianic census of Hispania, which took place between April 73 and April 74. Now, while it is true that a date of c. 76-78 for the *NH* would put 73-4 'within the last few years', the link between Licinus's Spanish post and the time of the census cannot be taken for granted. As I shall point out in Chapter 2, if Bosworth is right in suggesting that Pliny could have got his detailed information about Spanish census figures from the much earlier *Commentarii* of Marcus Agrippa, any chance of putting together Pliny's time in Spain, Licinus's office there, and the dates of Vespasian's census becomes less firm than it might appear to be at first glance. We cannot take such links for granted, and if we cannot do that we cannot posit 73 or 74 as firm dates for 19.35, either.¹

Thus it is not possible to date Flavianus's African proconsulship so surely to 70-71 on the strength of 'intra hos annos' and these projected parallel usages.²

(ii) Vibius Crispus. He is mentioned by Pliny in 19.4 in connection with Africa of which he is described as the proconsul. The date of his African office is, however, riddled with uncertainty. We know that he occupied the post of *curator aquarum* for Rome between 68 and 71, and we also know that he became consul for the second time in March-April 74, an

¹ As a matter of interest, Alföldy seems to agree and dates Licinus's post much earlier to 70, *Fasti Hispanienses*, 71.

² Similar difficulties attend 12.13: 'primus C. Matius ex equestri ordine, divi Augusti amicus, invenit nemora tonsilia intra hos lxxx annos'. There is doubt over the number of years: lxxx = $R F^2$, but xxx = $D E F$ and either could plausibly make Matius old enough to have been a friend of Augustus. A starting-date of 72 or 76 for the *NH* will make a difference to the calculation, and so would the date of composition of Book 12, did we but know it. Notices about Matius in *PW* 14.2210 no. 2 and *PIR* 5.229 = no. 369 do not help.

honour which came to him in about his seventy-fourth year.¹ So this leaves a vacant gap between 71 or 72 and early 74, and it is into this gap that his African proconsulship is usually fitted. Syme (*RP* 2.755) presumes that because Crispus was younger than Flavianus, his term in office will have been held later than 70-71, but since, as we have seen, Flavianus's proconsulship is not necessarily datable to those years, this assumption, although perfectly reasonable on its own terms, becomes unnecessary. Syme dates Crispus's term to 72-73 on the grounds that 71-72 already had a tenant. He does not name the occupier, but one presumes he means Q. Manlius Ancharius Tarquitius Saturninus to whom those years are usually assigned.²

Pliny gives no indication that he knew either Flavianus or Crispus personally: a small point, but one worth noting.

So far, then, we can make three observations:

- (i) Pliny knew a limited area of Africa from personal observation;
- (ii) he is likely to have been there as an official rather than as a tourist and since Africa was a senatorial province, his job as procurator (assuming that that is what he was) would have been to look after the interests of the Imperial estates there in particular;

¹ Bosworth, *Athenæum* 51 (1973), 72-3. Syme, *RP* 3.1054. Gallivan, *CQ* 31 (1981), 188, 214.

² Syme, *RP* 2.755. *REA* 58 (1956), 238. Le Glay, *MEFR* 80 (1968), 210. Le Glay excludes Flavianus altogether from this period of African proconsulships, but unfortunately does not say why. On Saturninus, see Thomasson: *Laterculi Præsidum* 2.3. There is dissension from the usual stance. Vogel-Weidemann and Eck, as we have seen (p. 71, note 2 *supra*), place Crispus in 71-72. Bosworth goes further, arguing that Crispus was actually legate in Hispania Citerior between 71 and 73, thereby leaving no time for any African proconsulship at all, *Athenæum* 51 (1973), 75-6. He also suggests that Crispus may have held African office during Nero's reign (p. 71). Syme himself goes on to put Crispus in Spain during 73-4 (*RP* 2. 755-6). The picture is nothing if not confusing. Bosworth assigns Saturninus to a proconsulship in Africa between 72 and 73 on the grounds that the inscription at Lepcis which forms the basis of earlier dating is, in fact, in need of correction. Therein, Vespasian is described as 'trib. pot. iii imp. x'. That 'imp. x', however, did not occur until 73, as we know from other inscriptions, and in consequence 'trib. pot. iii' must be emended to 'trib. pot. iiiii'. This will make it consistent with other references to Vespasian's tribunician power, which appear in inscriptions alongside 'imp. x'. *Op. cit.*, 65. Eck, too, argues for 72-3, *Chiron* 13 (1983), 212. See also *PIR* 5. 160-1, no. 153.

(iii) the date of his time in Africa is uncertain, although it was probably the early seventies.

Two questions remain: (a) assuming Africa was indeed Pliny's first procuratorship, do we know why he received that rather than somewhere else? (b) is there any way of telling from the available material how successful this initial appointment was? Conjecture, as so often, will have to supply answers to both.

The man who appointed Pliny was obviously Vespasian and two facts about the Emperor may be significant here; he, like Pliny, was of equestrian family, and he himself had been proconsul in Africa between 61 and 62 or 62-63.¹ There is disagreement about whether or not he did a good job,² but even Suetonius who praises his administration says that he made no money there and, indeed, retired from office in hock to his brother. Pliny, who had survived the Emperor's reformation of senators and equites (*Vespasian* 9.2) to become an *amicus principis*, was clearly the sort of man who could be trusted to look after Imperial interests in a province Vespasian knew well. Certainly Imperial need for money (*Vespasian* 16.1-2) meant that Pliny was likely to have acted as his *procurator fisci* there.³

How well did he do the job? The fact that the 'Suetonian' *Vita* tells us he went on to other offices which it describes as 'splendidissimas', indicates either that Pliny did not make a hash of it or that if he did, the Emperor was willing to trust him at least once more. Did he learn anything new from his African experience (procurator or not)? The first thirty chapters of Book 5 deal with African geography. It has been suggested, and strongly argued, that these consist of 28 chapters put

¹ See Suetonius: *Vespasian* 1.3. His father is described as *tribunus militum* and *praefectus castrorum* and this indicates equestrian rank. Proconsulship, *Vespasian* 4.3. Dates, Griffin: *Nero*, 116 and note 102. Jones puts it in about 63, *Titus*, 10. It is interesting that the one place mentioned by Suetonius in connection with Vespasian's time in Africa is Hadrumetum.

² Suetonius, 'integerrime nec sine magna dignatione administravit', *Vespasian* 4.3. Tacitus, 'proconsulatum . . . famosum invisumque Vespasianus egerat', *Historiæ* 2.97.

³ Tiberius asserted that the powers he had given to Lucilius Capito, procurator of Asia, extended only 'in servitia et pecunias familiaris', Tacitus: *Annales* 4.15.3. But by Claudius's day this jurisdiction had clearly extended itself to judicial matters, too: 'utque rata essent quae procuratores sui in iudicando statuerunt', Suetonius: *Claudius* 12.1. See also Sherwin-White: *PBSR* 15 (1939), 14, 22, 26. Pflaum in *PW* 23. 1269-70.

together by a 'scissors-and-paste' method from fragmented information derived from a variety of sources, and an appendix (chapters 29-30) consisting of parts of an administrative document drawn up between 46 and 44 BC for Julius Cæsar in connection with his provincial reorganisation.¹ In particular it is alleged that 'in his survey of the region of Byzacium', (and this is roughly the area which Pliny seems to have known best from personal observation) 'Pliny depends on two sources: 1) the Map of Agrippa for the distances in Roman miles, and 2) the "appendix" for the statuses of the towns and cities'.²

Now, it can be seen from Map 6 that the places which Pliny mentions are all on or just off the east coast of the province. The exception is Thysdrus, but Pliny says the trans-sexual groom he saw came from Thysdrus, not that he himself was present in Thysdrus when the wedding took place. Indeed, 'ipse in Africa vidi' (7.36) is how he puts it. It is therefore possible to suggest that he was able to carry out all his administration from a fixed location—Hadrumentum being the obvious one—and thus never got to know the whole province at first hand; and if Agrippa's material was still in official use because it was still considered to be relevant or further exploration had not been done, he may not have seen the need to do so.³

HISPANIA TARRACONENSIS

Virtually all the commentators are agreed that Pliny was procurator of this province in 73.⁴

1 Shaw: *Historia* 30 (1981), 424-71.

2 Shaw, *op. cit.*, 437.

3 Exploration of parts of Africa was happening during Pliny's lifetime. There was the military expedition under Nero to scout the feasibility of an attack on Æthiopia, but this is not the region with which Pliny himself was concerned. *NH* 6.181; 12.19. Seneca: *NQ* 6.8.3-4. Pliny was keen to make sure that his work was up-to-date. 'Adiectis rebus plurimis quas aut ignoraverant priores aut postea invenerat vita', as he says of his research for the *NH* in *Præf.* 17. Nevertheless, he later admits 'ego plane meis adici posse multa confiteor', (*Ibid.*, 28) and it may be that Africa was one of the gaps which could have been better filled.

4 Münzer, *BJ* 109. Pflaum, 114. Nailis, 22-3. Syme: *RP* 2.755-64 and 7.504. Ziegler in *PW* 21.276-7. Healy, in *French-Greenaway Science*, 111. It is Sherwin-White (*Letters*, 221) who demurs, suggesting instead 'a procuratorship in Spain before 66 or after 69', and is taken to task by Jones

- (i) Claims of autopsy. Pliny provides no direct examples of autopsy in connection with Hispania, but see 25.18 'cognovi'.
- (ii) Personal statement. Pliny says (25.18) that he learned about a new plant while he was staying with a friend in Lacetania.
- (iii) Claim of personal knowledge. There is one example of 'scimus', connected with Larcus Licinus: 'prætorio viro iura reddenti in Hispania Carthagine paucis his annis scimus accidisse mordenti tuber ut deprehensus intus denarius primos dentes inflecteret', (19.35). All Pliny is saying here, of course, is that he knows for a fact that this incident happened. Whether 'scimus' represents first-hand or second-hand knowledge depends on how one interprets that information.
- (iv) Others mention Pliny's presence. To this his nephew bears witness. 'Referebat ipse potuisse se, cum procuraret in Hispania, vendere . . . commentarios Larcio Licino quadringentis milibus nummum', (*Ep.* 3.5.17).
- (v) Inference. Licinus's period of office in Tarraconensis has been used to fix the date of Pliny's procuratorship. Here is what Syme has to say,

'LICINUS . . . Legate in Tarraconensis, attested both at Carthago Nova (*NH* 19.35) and in Cantabria (31.24), when Pliny was there as procurator. That is, in 73 or 74, as may be deduced from the fact that Pliny gives the census figures for the three *conventus* of the north-west (3.38)'.¹

The Cantabria reference runs, 'dirum est non profluere eos [the springs of the River Tamaris] aspicere volentibus, sicut proxime Larcio Licino legato pro prætore post septem dies accidit'. Cantabria and the River Tamaris are mentioned three sentences earlier in the text. But neither of these texts says that Pliny himself was present and although it is usually assumed that Larcus was legate at the same time Pliny was procurator, the nephew does not actually say so. In consequence, dating Licinus's term of office in order to arrive at a date for Pliny's Spanish post is perhaps not as compelling a suggestion it has been made to seem.

What is more, objections have been raised to giving a precise date. Syme argues thus:

(*Phoenix* 22 [1968], 126). Unfortunately, Sherwin-White provides no supporting evidence for his suggestion.

¹ *RP* 2.719. Cf., *Ibid.*, 756 and *RP* 5.504.

The post held by Licinus need not detain or perplex . . . [He was] clearly the *iuridicus*, a post on ample attestation [which is then given]. By good fortune, the name of a consular legate avails to date both the *iuridicus* and the procurator. An inscription from Syria shows a certain Attius Suburanus serving as *adiutor* to the imperial legate Vibius Crispus, 'in censibus accipiendi Hispaniæ Citerioris (AE 1939, 60: Heliopolis). The conduct of the census, that gives the date: 73/4. To confirm which, a neglected fact is to hand. Pliny happens to supply the census figures for each of the three *conventus* of the north-west, in Asturia Gallæcia (3.28). These, and no others anywhere, (RP 2.755-6).

This last point has been countered by Bosworth who observes (a) that if Pliny was indeed concerned with a census which covered the whole of Spain, it is odd that he gave such a limited set of figures, and (b) that, as much of his information about Spain comes from the *Commentarii* of Marcus Agrippa who is frequently cited by Pliny as a source at this point in the *NH*, and as Agrippa had conducted the Cantabrian War of 25-24 BC in precisely the north-west, it is more likely that Pliny's figures come from a census of the conquered population. Bosworth therefore draws the conclusion, 'both Pliny and his contemporary and colleague, Larcus Licinus . . . must remain in limbo somewhere in the reign of Vespasian. No precise dating is possible'.¹

But that Pliny knew Spain well can hardly be doubted. Syme, referring and adding to Münzer's citations, provides a wealth of illustration, (RP 2.755-62). I shall now supplement this in brief. First, a few statistics. There are 135 references to 'Hispania' in the *NH*, some of which give the impression of including information directly obtained by Pliny as an observer—33.68-78 on gold mining, for example; 34.123-4 on shoemakers' black; or 11.18 on the special taste of Spanish honey—although, as so often, he gives no unmistakable indication of autopsy.² References to towns, cities and tribes cover the whole of *Tarraconensis* and *Bætica*. Now, the governor of *Tarraconensis* was obliged to make an

1 *Athenæum* 51 (1973), 76-7. Alföldy dates Licinus's office to 70, *Fasti*, 70-1. The Budé note *ad NH* 31.24 says, without giving evidence, that Licinus died in Spain in about 70.

2 What is more, 33.68-78 may come from written sources, since 33.78 adds 'quidam prodiderunt' that Asturia, Gallæcia and Lusitania produce a great deal of gold 'ad hunc modum'.

annual tour of his province which was so large that it had to have two procurators, one for Asturia-Gallæcia, and the other for the rest.¹ Does this help to account for Pliny's wide-ranging references?

If we look at the statistics for his references to individual regions (and here Map 7 may be helpful), an interesting figure emerges.

<u>Regions mentioned</u>			
<u>Region</u>	<u>Times cited</u>	<u>Region</u>	<u>Times cited</u>
Asturia	4	Edetania	3
Bætica	34	Gallæcia	7
Balearic Islands	7	Tarraconensis	4
Cantabria	4		

Figure 6

Is it significant (bearing in mind the two procuratorships) that Bætica should receive such frequent notice? Even if we add together the figures for Asturia and Gallæcia which are generally regarded as a single unit, Bætica still stands out. Moreover, the same predominance continues if we take into account and remove the inevitably passing references to all these areas in Books 1-5. Then we get

<u>Regions mentioned</u>			
<u>Region</u>	<u>Times cited</u>	<u>Region</u>	<u>Times cited</u>
Asturia	1	Edetania	0
Bætica	18	Gallæcia	5
Balearic Islands	6	Tarraconensis	0
Cantabria	4		

Figure 7

But what is the quality of this information? Asturia appears in three places in the *NH*, twice in Book 4 (geography) and twice in the same passage about mining (33.78) which seems to depend upon 'quidam prodiderunt' for its information. Cantabria (4 times) yields information from locals (34.148, 'appellant'), and maybe from someone in Licinus's entourage (31.23, cf. perhaps 34.149 and 158). Gallæcia (7 times) has one

¹ Mackie: *Local Administration in Roman Spain*, 9-10.

reference at least from written sources (33.78, 'quidam prodiderunt'); two in Book 4 (geography); one which mentions a city, Zöela, as a source of flax imported into Italy (19.10); two briefly linking it with (a) Lusitania and (b) Cantabria (34.156 and 158); and finally, one which gives a single statistic about the silver-mine at Albuçrara (33.80).¹ Tarraconensis appears only in Books 3 and 4 (geography). The Balearic Islands (7 times) have one reference in Book 3 (3.76, geography); two in Book 8, one of which looks back to the time of Augustus (8.217), while the other may do so as well (8.218); two brief mentions of birds (10.133 and 11.122); one to Sinopean ochre (35.31); and one to soil which is fatal to snakes (35.202). Finally, all references to Edetania occur in Book 3 (3.20, 23, 24: geography).

All these are relatively slight: nothing to compare with Pliny's detailed description of gold-mining, for instance, which, incidentally, uses one or two Spanish terms but is not actually locatable in Spain itself.² So are the 18 references to Bætica, exclusive of the 16 which occur in Books 1-5, of any greater significance? The answer is, not really. Two rely on written works, (i) 9.89 ('prodidit Trebius Niger') and (ii) 18.75 ('appellat Turranius'). Most of the others follow the pattern of the majority of Pliny's references to specific places: they form part of a list of examples, or their information is brief and made in passing. Two, however, catch the eye. Both refer to named mines in Bætica, one of cinnabar, two of lead, and both passages proceed to give further details related to their working and economy.³ It may also be significant that when Pliny names Mauretania and Baetica as two places which afford opportunities to catch the *scomber*, he gives the name of the town in Bætica whence this may be done (31.94); and we may also note that three of his six examples of

1 Syme thinks that Pliny may have seen 'various natural products' in Asturia, Gallæcia and Cantabria, (*RP* 2.757). Since only the Cantabrian information gives any hint that Pliny may have come by it himself—it all depends on who was speaking to the locals in 34.148—I am not sure I am willing to go so far.

2 An important caveat since it is often assumed (a) that this passage is definitely related to Spain and (b) is autopsy. See further Lewis-Jones: *JRS* 60 (1970), 181-2. Bird's detailed article on the mines of the north-west takes Pliny's autopsy for granted, in Blagg-Jones-Keay: *Papers in Iberian Archaeology*, 341-68.

3 33.118 and 34.165. As a matter of interest, we know that Bætica, too, had gold-mines (Healy: *Mining and Metallurgy in the Greek and Roman World*, 48) and it is tempting to wonder whether the famous description of gold-mining may not actually refer to these.

exceptional local tides (2.219) are taken from Bætica = (i) Gades, (ii) R. Bætis, (iii) Hispalis.

All in all, however, on close examination the Bætican material turns out to be little different from that dealing with the rest of Hispania. As for quantity, Syme points out that five of seven authors used by Pliny for Spanish material came from or had connections with Bætica (RP 2.761), so this may well account for the abundance of references to it. It may also serve to warn us against ascribing too lightly unattributed passages which look like Pliny's autopsy to Pliny's personal experience.

Our conclusions about the Spanish material are therefore as follows: (i) Pliny was certainly procurator in Hispania; (ii) he was there officially at some point in the seventies, but we cannot be sure when; (iii) nor can we be sure which of the two procuratorial posts he filled.¹

GALLIA BELGICA

Pliny is usually sent to Gallia Belgica by commentators in 74.²

- (i) Claims of autopsy. There are no claims of autopsy in connection with this province except perhaps, 7.76. (See below).
- (ii) Personal statement. Nowhere does Pliny say he was in Gallia Belgica.
- (iii) Claim of personal knowledge. No examples.
- (iv) Others mention Pliny's presence. No examples.
- (v) Inference. (a) Syme claims that 18.183 is an example of autopsy and that it provides a date for Pliny's being in Belgica (RP 2.753). The passage runs, 'nec recens subtrahemus exemplum in Treverico agro tertio ante hunc anno conpertum [details].' The reference to 'two years ago' would be useful if we knew when Pliny was writing Book 18. Starting-dates of 72 or 76 for the *NH*, however, allow us to say only that the event to which he refers must have taken place during Vespasian's reign, unless we are

¹ Unless we accept that the description of gold-mining was (a) Spanish and (b) autopsy, in which case the argument for his having charge of Asturia-Gallæcia becomes stronger. In view of the existence of Bætican gold-mines, however, these propositions should be approached with caution.

² Münzer, *BJ* 110. Pflaum, 114. 'It is logical', he says, 'that his advancement took him to Belgica'. Nailis, 23. Syme: RP 2.752-4 and 7.504. Ziegler in *PW* 21.277 denied that Pliny held the appointment. Wightman is non-committal: *Gallia Belgica*, 61.

going to suggest that the passage is lifted from some other work, in which case 'two years ago' could refer to any time. The passage certainly gives no particular evidence of autopsy.

(b) One reference, however, does seem to indicate that Pliny could have been in the province at some time. *Re* children of abnormal growth he says, 'ipsi non pridem vidimus eadem ferme omnia præter pubertatem in filio Corneli Taciti equitis Romani Belgicæ Galliaë rationes procurantis', (7.76). This may have been the historian's father, but we cannot put a date to this appointment, nor does Pliny's 'non pridem' help very much. He uses it thirteen times altogether, but in only three do we get a notion of what it might mean in terms of years: (i) 14.18, a vine became famous only recently and was unknown in the time of Vergil 'obitu xc annis', (ii) 15.47, two trees were introduced into Italy during the last part of Augustus's reign; (iii) 28.29 M. Servilius Nonianus who died in 59 was afraid of ophthalmia. So in these cases, 'non pridem' can cover a period from about 90 to about 20 years; no use when it comes to dating 7.76.¹

A dozen references to Belgic territory, with two in Books 1 and 4, amount to very little and, as Syme points out, '[most] pieces of information might have accrued when Pliny was on military service, or in transit through Belgica', (RP 2.753-4).²

General Summary

(i) Pliny's acquaintance with Gallia Narbonensis is compatible with his picking up information about it on his way through to elsewhere rather than as procurator.

(ii) A procuratorship in Africa is a possibility on the somewhat negative grounds that it is easier to see him as an official in the province than as a visitor. Dating of such an appointment or visit is uncertain: 71-2 has been suggested.

(iii) Pliny was procurator of Hispania but again, the date is not firmly based: 73 has been suggested.

¹ The other references are 2.246; 15.25; 17.119; 18.105; 18.172; 19.81; 22.128; 33.29; 33.163.

² Apart from the two references cited for Belgica in this section, there are thirteen others: 1.4; 4.105; 10.53; 11.262; 12.6; 15.103; 16.158; 16.161; 18.85; 19.8; 19.97; 36.159. Syme cites seven. The others are of the same nature.

(iv) Pliny's acquaintance with Gallia Belgica does not lead one to think that he must have been procurator there. He might equally well have visited in transit to or from Germania.

Further considerations

Three questions remain: (a) how far do these suggestions measure up to the 'Suetonian' *Vita's* description of Pliny's procuratorships as 'continuas' and 'splendidissimas'; (b) what was the experience of other equestrians during the first century AD; (c) does length of service as procurator shed any light on the dating of Pliny's appointments?

(a) Procuratorships were of different kinds and from the early Principate fell into different classes according to pay. (i) *Sexagenarii* (60,000 sesterces) included the procurators of Gallia Narbonensis, Bithynia and Mauretania Cæsariensis; (ii) *Centenarii* (100,000 sesterces), the procurators of Dacia, Galatia, Cilicia, Arabia, Africa (meaning the District of Hadrumetum, Carthage and Theveste); (iii) *Ducenarii* (200,000 sesterces), the procurators of Hispania, Cappadocia, Syria, Gallia Belgica, and the Præfecti of the fleets of Misenum and Ravenna.¹

One can see here the outline of a ladder of promotion for Pliny; but in practice promotion did not work like that and a man might advance regularly or irregularly according to Imperial need.² In *PME* the epithet 'splendidus' is used of the provinces of Carthage and Numidia (A120 and C187), and 'splendidissima' of Nicomedia and Ephesus (C128). Perhaps the *Vita's* superlative is a little over-done, but one must recollect that it was a description *post mortem* and perhaps the respectful notion *de mortuis nil nisi bonum* is to be applied. Africa, Hispania and Gallia Belgica, however, could certainly be described as excellent appointments, so maybe the *Vita* did have these in mind.

'Continuus' is difficult to assess. Undoubtedly it implies there were at least two appointments; somehow one expects a minimum of three. Hispania is certain, Africa is possible, even probable. Gallia Narbonensis and Gallia Belgica have little to choose between them in strength of evidence, and there the matter will have to rest. Perhaps the most striking

1 Homo: *Institutions*, 349-51. Saller: *Personal Patronage under the Early Empire*, 85-6.

2 As Saller illustrates, *op. cit.*, *supra*, 80-94.

thing all four have in common is that there is so little evidence of Pliny's direct observation. Spain is hardly more detailed in personal terms than the other three. It makes interpretation of what we have a very risky business.

(b) As for the experience of other equestrians, *PME* yields the following information. Narrowing down office-holders to men of the first century AD before or contemporary with Pliny, we find only eleven going on to procuratorial office in a variety of provinces. Three are noted in literary sources, the rest in honorary or sepulchral inscriptions. Only one title (F2) is noted as being mutilated. Three men (B8, F2, M60) are recorded as having filled public civilian office before entering the army. All eleven reached the military rank of tribune and nine that of *praefectus alæ*.¹ In other words, we learn nothing which causes surprise, although it is worth noting that these eleven show that Pliny was not in the least unusual. Their experience appears to match what we know of his.²

(c) Finally, length of service. *Ducenarii* were usually over the age of forty-five³ and one has to presume, since there is little evidence on which to work, that a procurator held his post for as long as the Emperor wished to keep him there. As far as one can tell, that means, in practice, a year or two.⁴ Thus if we grant Pliny three procuratorships at one year each at

1 The *PME* references are A134, B8, F2, H13, L33, M60, M80, P115, S50, V118, V122.

2 If we take evidence from *PME* as a whole, remembering that its dates range from Augustus to Gallienus, we find the following. In all, 334 are recorded as having proceeded to further civilian office after their *militiæ*. Of these, 85 (25.5%) went on to be procurator; 16 (5%) to be *praefectus classis*; 12 (3.5%) held both offices and 5 (1.5%) were *praefecti classis* without having been procurator first. As a matter of interest, these are the figures for those procurators going to the areas attributed to Pliny: (a) Gallia Narbonensis 2 (2.5%), (b) Africa 5 (6%), (c) Hispania Tarraconensis 1 (1%), (d) Gallia Belgica 6 (7%). C222, F100 and I136, all from the second century AD, went on to be Prefect of both the Misene and the Ravenna fleets after having held several procuratorial offices.

3 Pflaum: *Les procureurs équestres sous le haut-empire romaine*, 213. L. Julius Vehilius Gratus Julianus [*PME* I.36] was procurator of Lusitania and Vettonia in c. 177 at about the age of forty-nine.

4 Saller: *Patronage*, 93 and 100-1. Exceptional lengths of time in office—sixteen, fifteen and eleven years, are noted by Démougin: *L'ordre équestre*, 737-9.

least, and four procuratorships at two years each at most, we are suggesting that this part of his career lasted for between three and eight years within the period of 70 (Vespasian's accession) and 79 (when we know that Pliny was Prefect of the Misene fleet). Either is possible: consideration of length of office does not help.

(vii) Career (iv): Prefect of the Fleet

At some point after Vespasian's accession and arrival in Rome in about September 70, Pliny became a member of the *consilium principis* as one of the Emperor's *amici*, a position he probably continued to enjoy under Titus when he became Emperor mid-way through 79.¹ The term *amicus principis* is somewhat vague. In Claudius's reign it was a phrase used of the procurator; under Nero it may have come to mean 'special adviser'; later there may even have been categories of *amici* with (presumably) grades of privileged access accorded to each.² It is an interesting question how inward Pliny was with Vespasian. We know he attended the morning *salutatio* with great regularity (Pliny: *Ep.* 3.5.9), but whether this indicates especial intimacy with the Emperor may be doubted. Moreover, if Pliny had a claim on the Flavians, it was upon Titus rather than Vespasian, as far as we can tell.

When did he become Prefect of the Misenian Fleet? That depends on when he gave up his last procuratorship, and as we do not know that, we cannot tell how long he had served as Prefect at his death in August, 79.³ The job was an important one. The Imperial fleet was divided into two squadrons, one based at Misenum and the other at Ravenna, each maintaining an independent station in Rome. Meijer describes the responsibilities of the Misene fleet as follows:

Ships from Misenum patrolled the coasts of Gaul, Spain, Mauretania, Egypt, Sardinia and Corsica. The important corn supply routes were controlled by this fleet . . . In

¹ PW 1.1831. Suetonius: *Vespasian*, 21. Crook: *Consilium Principis*, 28. Pliny, 'amicitia principum', *Ep.* 3.5.7.

² Sherwin-White, *PBSR* 15 (1939), 17-18. Griffin: *Nero*, 71-3. Saller: *Patronage*, 61.

³ *PME* I136 seems to have been about 53 or 54 when he became Prefect of the Misenian Fleet. Pliny was 55 when he died. Syme raises the possibility, although not with any great conviction, that Pliny may have been *praefectus vigillum* before becoming *praefectus classis*: *RP* 7.505-6.

Ostia, the port of Rome from the reign of the Emperor Claudius . . . onwards, a large contingent of the Misenian fleet was stationed.¹

According to Starr,

much of the prefect's daily business concerned the men who staffed the supply depots and manned the ships . . . Efficiency requires maintenance in good conditions, upkeep of the elaborate depot at the base harbour, with its *castra, prætorium*, barracks and storerooms, and the replacement or repair of ships and supplies lay directly under the prefect's eye.²

Præfectus classis was added to the procuratorial *cursus* in the time of Claudius and Nero, and Vespasian raised its status further by turning it into one of the great military offices of state, at the same time raising its salary from the grade of *sexagenarius* to *ducenarius*.³ But by 75 the military side of things may have not been quite as important as it had been at the beginning of the reign. In February and April 71 many of the Misenian fleet retired on generous terms, and early in 75 Vespasian dedicated the Temple of Peace in Rome, perhaps a symbolic reminder that the struggle for power was now firmly over and a new era of stability was being inaugurated.⁴ Were Pliny's gifts seen as those of an organiser, a man with an eye for detail, a scrupulous annotator, a clerk with an enthusiasm for lists? If so, he may have fitted the Misenian prefecture in a time of peace.

Did he reside principally at Misenum or Rome during his period of office? Misenum is some 125 miles from Rome by a fairly direct route.⁵ In

¹ A *History of Seafaring in the Classical World*, 213. 'Large' is perhaps an exaggeration, but certainly warships from Misenum were based at Ostia to act as a police force and to control shipping in and out of harbours. See further Meiggs: *Roman Ostia*, 304.

² *The Roman Imperial Navy*, 30 and 35. Pliny records that during Claudius's reign, the then Prefect was instructed to re-stock the local coastal waters with fish, since supplies had been depleted. *NH* 9.62.

³ Starr: *op. cit.*, *supra* 186 and 33. Watson: *The Roman Soldier*, 20. Sherwin-White: *PBSR* 15 (1939), 13 and 21. Reddé: *Mare Nostrum*, 547-8.

⁴ Starr: *op. cit.*, 94. Dio Cassius 65.15.1.

⁵ On a straight road as far as Tarracina, then on to Fundi and Formia, and then by coastal road to Misenum. (See Map 8). Casson reckons that 'government couriers hustled along from station to station at an average

the first of his letters to Tacitus, describing the events leading up to his uncle's death, the younger Pliny wrote: 'erat Miseni classemque imperio præsens regebat', (*Ep.* 6.16.4). 'Præsens' here, along with 'ibat ad . . . imperatorem . . . inde ut delegatum sibi officium', (*Ep.* 3.5.9) suggests, as Sherwin-White points out, that the headquarters of the fleet administration were at Rome, (*Letters*, 371): and indeed common sense suggests that as Misenum and Rome were too far apart for regular, daily commuting, it would be more efficient for the Prefect to reside at Rome where, as *amicus principis*, he could be in frequent—Pliny the Younger implies daily—contact with the Emperor. Despatches could be brought to him, at Head Office so to speak, from the harbours at Ostia and Puteoli, both of which were ports for Misenian ships.¹ Not only that, but the largest detachment of the fleet was actually stationed in Rome itself in a permanent camp not far from the Colosseum, on the Esquiline.² Thus, it would have been possible for Pliny to have remained in Rome to fulfil his duties both as Prefect and *amicus principis*, making occasional visits to Misenum when he considered it necessary to do so.³

of five miles an hour for a total of fifty miles in a normal day's travelling', *Travel in the Ancient World*, 188. Emergencies could treble this.

¹ See Suetonius, 'classiariorum vero, qui ab Ostia et Puteolis Romam pedibus per vicus comitant', etc., *Vespasian* 8.3. Hirschfeld (*Die Kaiserliche Verwaltungsbeamten*², 228) and Starr (*op. cit.*, 18) both think that these men may have been couriers. We know from Pliny, *Ep.* 6.16 that Pliny the Elder had the use of a villa at Misenum, whether his own or someone else's we cannot tell. There is always the possibility that it was the Prefect's official residence. But we cannot assume from this that Pliny normally resided here and commuted to Rome. That contradicts the nephew's implication that Pliny saw Vespasian perhaps daily. It also sits badly with Pliny's 'dies vobis inpendimus' (*NH*, *præf* 18) where 'vobis' clearly refers to Vespasian and Titus. I am therefore not at ease with Reddé's assumption that Pliny lived in Misenum; see *Mare Nostrum*, 194-5.

² Starr: *op. cit.*, 20. Webster: *Army*, 157. One of their duties was to manoeuvre the awnings of theatres and amphitheatres. See further Richardson: *New Topographical Dictionary of Ancient Rome* s.v.v 'Castra Misematium'.

³ 'Transportation of the Emperor and members of the Imperial family at the seaside was one of the duties discharged by the Misene fleet', D'Arms: *Naples*, 95. Vespasian was in Campania in 79 but we are told by Suetonius that he was actually accustomed to spend his summers near Reate in Sabine territory, *Vespasian*, 24.

General Summary

A popular view of Pliny's career, based largely upon the work of Münzer, has given Pliny military experience with Domitius Corbulo in Germania Inferior in c. 47, with Pomponius Secundus in Germania in c. 50/51, and again in Germania Inferior in c. 57. It is a view which has been called in question by several subsequent scholars, but still exerts influence, especially in works of reference. Pliny has also been allowed four procuratorships between c. 70 and 76. Here, Syme has been most influential in giving tentative dates to these posts.

I, on the other hand, am suggesting the possibility that Pliny's military career may have occurred after civilian office and that it might be dated almost a decade later than the conventional view, to between c. 54 and a date in the mid-sixties or c. 70. The final date must be vague because one does not know when he finished his career in the army, and the date of his first procuratorship (Africa 71/72?) is also conjectural. I am also expressing doubts about two of the four procuratorships usually attributed to Pliny¹ and especially about their proposed dating, and I am suggesting that Pliny may have been resident in Rome as a matter of course during his tenure of the Prefecture of the Misene fleet.

Such differences must affect one's view of the dating of Pliny's literary works. Münzer's proposal suggests a short burst of activity in the late 40s and early 50s followed by a blank until the 60s. My suggestion proposes a start in the 60s and thence a more or less continuous process for the rest of his life.

(viii) Literary Works

A bibliography arranged in chronological order² is given by Pliny the Younger in his letter to Bæbius Macer, (*Ep.* 3.5.3-6). He tells us that Bæbius was a keen reader of the Elder's works and wanted to have a full set. We may take it, therefore, that Pliny's list is complete.

¹ I make no claim to originality here, of course. Syme himself puts a question mark beside three of them, *RP* 2.764-5.

² 'Etiam quo sint ordine scripti notum tibi faciam', *Ep.* 3.5.2. Pflaum supposes that Pliny the Younger refers to publication dates, *Les carrières procuratoriennes*, 50.

De Iaculatione Equestri

This was written in one volume 'cum præfectus alæ militaret' and 'pari ingenio curaque composuit', Pliny the Elder makes only one reference to it: 'forma equorum quales maxime legi oporteat pulcherrime quidem Vergilio vate absoluta est, sed et nos diximus in libro de iaculatione equestri condito, et fere inter omnes constare video', (8.162). It is possible that both Arrian and Tacitus made use of it in *Tactica* and *Germania*.¹ Münzer's date for Pliny's prefecture is 57 (*op. cit.*, 107). I suggest c. 62 at the earliest. Consequently, the date for the book is either in the late 50s or early 60s, depending on which hypothesis one accepts.

De Vita Pomponi Secundi

This was written in two books. Pliny the Younger says that his uncle 'a [Pomponio] singulariter amatus hoc memoriæ amici quasi debitum munus exsolvit'. Clearly the date of the work depends upon the date of Pomponius's death, but unfortunately this we do not know. The last discernible date for him is 50 when he conducted a successful campaign against the Chatti, and it is because of this and his close friendship with Pliny that Münzer and others place Pliny in Germania Superior under his command at that time. In fact, the evidence for such a placement is extremely thin and therefore all we can say for certain is that Pliny's biography must have been written after 50. A common suggestion is that Pomponius died in c. 57 or 58.² This does not mean to say, of course, that Pliny would necessarily have written his biography straight away.

Bella Germaniæ

Neither of the preceding books would have taken Pliny long to write. The twenty volumes of the *BG*, however, must have required both more preparation and more time for composition. Of its nature and the genesis of its composition, Pliny the Younger has this to say: 'Bellorum Germaniæ viginti; quibus omnia quæ cum Germanis gessimus bella collegit. Incohavit cum in Germania militaret, somnio monitus', and this

¹ Lammert: *Philologus* Supplement 23 no. 2 (1931), 48-59. The reference in Sherwin-White: *Letters*, 116 is incorrect, as is that of Kroll in *PW* 21.285.

² Otto: *Philologus* 90 (1935), 490-2. König-Winkler: *Plinius Naturkunde* 1.326. Cichorius put the death late in Nero's reign, *Römische Studien*, 425-6. Della Casa: *Dioniso* 35 (1961), 59.

is followed by details of the dream. Pliny the Elder does not allude directly to the book, but Tacitus has a specific reference to it—*Annales* 1.69, wherein Caligula's mother Agrippina stands at the head of the Rhine Bridge, thanking returning legions. Suetonius, too, may be referring to the same work when he supports, though not without reservations, Pliny's identification of Caligula's birthplace against that of another historian, Gætulicus (*Caligula* 8. 1-2).

The details of the inspiring dream are as follows: 'adstitit ei quiescenti Drusi Neronis effigies, qui Germaniæ latissime victor ibi periit, commendebat memoriam suam orabatque ut se ab iniuria oblivionis adsereret'. Why was the work inspired by Drusus in particular? Is it because Pliny was part of the Drusian operation initiated by Pompeius Paulinus, governor of Germania Inferior from c. 55 until c. 68? This operation completed the *agger Drusianus*, almost certainly some kind of protection against flooding, which had been left unfinished in c. 12 BC.¹ If Pliny was engaged thereon, it would be natural for him to have Drusus frequently in mind and such a suggestion has the further consequence of putting Pliny in Germania Inferior at least between 55 and 58.

The usual dating for the *BG*, however, is given as 'Claudian', and the reason for Pliny's writing it is supposed to have been his desire to glorify Drusus and so flatter the Emperor Claudius.² But why should Drusus say that he was in danger of neglect during his son's reign? There are various indications that he was not forgotten; Claudius himself urged people to remember Drusus because he had the same birthday as Mark Antony—a reminder of the Emperor's republican sympathies—and among the omens of Claudius's impending death was a bolt of lightning which struck his father's tomb.³ What is more, Claudius had a German policy and so links with his father's campaigns there, if only subliminal, must have been present in the public consciousness.⁴

Under Nero, however, Germania was quiet after 58. Indeed, it was to prevent his army from becoming bored through inaction that Paulinus began to finish Drusus's *agger*, and the governor of Germania Superior

1 'Inchoatum aggerem absolvit', as Tacitus puts it, *Annales* 13.53.

2 Thus Münzer, *Bj* 77 sq. Gunde in *PW* 21.286-7. Sherwin-White: *Letters*, 217. Mehl: *Hermes* 107 (1979), 238. Braccisi: 'Plinio Storico', in *Como* 54-5. Sallmann, *ANRW* (32.1), 594-6.

3 Suetonius: *Claudius*, 11.3 and 45.

4 See Levick: *Claudius*, 152-6.

started to construct a canal between the Moselle and the Saône.¹ Nero, who showed little respect for his predecessors in private,² may therefore have given the impression that Germania did not hold much interest. Pliny, working in Drusus's territory, may thus have conceived the notion—quite possibly mistaken, in fact—that Drusus's achievements were in danger of being forgotten, and so chose to write a history of Rome's wars in Germania as a means of reminding Romans of that area. Under Nero this might have been seen as a slightly delicate topic, given the Emperor's apparent lack of interest and private disdain for Claudius. Hence the conceit of Drusus's ghost. It took the sting out of what could otherwise have been represented as a personal decision by a junior cavalry officer to make a political statement. Such an interpretation makes sense under Nero: it does not under Claudius.

It is curious, too, that Pliny the Younger refers to Drusus as 'Drusus Nero'. This was not the usual way. Tacitus calls him simply 'Drusus' most of the time, sometimes indicating specifically that he was Tiberius's brother. Once he calls him 'Claudius Drusus' and once 'Drusus Caesar'. Suetonius always refers to him as 'Drusus', except for a passage at the beginning of his biography of Claudius where he explains that Drusus used to have the name 'Decimus', then acquired 'Nero', and later 'Germanicus'. The earlier Velleius Paterculus calls him 'Drusus Claudius'.³ Is Pliny echoing his uncle's usage? If so, it may indicate that Pliny the Elder was indeed indulging in a small piece of flattery, but of Nero and not of Claudius. Nero (the Emperor) is being linked with the martial exploits of an earlier Roman hero (Drusus Nero) who brought peace to Germania and was a great builder there. The parallels are somewhat forced, but Nero's full name was Nero Claudius Caesar Drusus Germanicus, and the comparison (if one were intended) would have been pleasing enough.

1 'Ne segnem militem attinerent', Tacitus: *Annales*, 13.53.

2 Griffin: *Nero*, 96-8.

3 Tacitus: *Annales*, 1.33-41; 2.7, 41, 82; 3.5; 4.72; 6.51; 13.53; 1.3 (Claudius Drusus); 12.29 (Drusus Caesar). Suetonius: *Augustus*, 99.1, *Tiberius*, 7.3; 50.1; 76, *Caligula*, 1.1, *Claudius*, 1.2; 11.3; 46; *Nero* 1.1 (Decimus, Nero); 1.3 (Germanicus). Velleius Paterculus: 2.95.1; 2.97.2. He is called by his full name on a coin, but this is to be expected as the coin was issued in c. 41-45 to commemorate his German victories, and is thus in the nature of an official proclamation. See Levick: *Claudius*, coin 8 (with caption because of an *erratum*).

Perhaps Pliny the Younger's notice of the *BG* is more ambiguous than it seems at first glance. 'Incohavit', he tells us—his uncle started work on it or made a first draft while he was serving in Germania. Surely we are not meant to infer that he did not publish it until later? If so, Pliny might have begun it in Claudius's reign and published it in Nero's. But this attempt to adhere to the standard theory of dating the *BG* is not convincing. The standard dating, in fact, tends to rely upon two considerations: first, a presumed link between Pliny, Domitius Corbulo and his campaign against the Chauci in c. 47, and Pliny's known German military service, thus giving a *terminus ante quem non* of about 47 for Pliny's beginning the book and a *terminus post quem probabiliter non* for its contents; and secondly, the contents themselves which are thought to have included the Germanic wars of Julius Caesar, Augustus and Tiberius, but not the campaign of Secundus in 50-51.¹ Close investigation, however, shows that the Pliny-Corbulo-47 link is most uncertain, and that a link between Pliny and Paulinus in 55-58 is equally possible as a conjecture.

As for the contents, only two 'fragments' of the *BG* remain, neither direct quotations: (i) Suetonius, *Caligula* 8, refers to the place of the future Emperor's birth on 31 August, 12; and (ii) Tacitus, *Annales* 1.69, to an incident during the first year of Tiberius's reign = 15. Since the whole work consisted of twenty books and we do not even know the placing of these two references: and since the extent of Tacitus's use of the *BG* is a matter of scholarly disagreement, it seems rash to claim, even tentatively, that it finished with Corbulo's campaign of c. 47. The only reason for this suggestion is the conjectured Pliny-Corbulo link. If we accept a Pliny-Paulinus link as a possible alternative, we might then posit 58 as a closing date for Pliny's work since it was in this year (I have suggested) that Pliny could have taken part in the campaign against the Frisii; and it was in this year also that Duvius Avitus, Paulinus's successor as governor of Germania Inferior, conducted military operations against the Teucteri while the legate of the Upper Army guarded his rear, (Tacitus, *Annales* 13.56). Thereafter there was peace in Germania. So if Pliny wanted a suitable stopping-point for his history, the year 58 would provide it just as well as (rather better, in fact, than) 47.²

1 See Sherwin-White: *Letters*, 217 and the literature there cited.

2 My earlier suggestion that Pliny's two previous books be dated post 62 means that, according to this plan, the *BG* would come later. Münzer's

One interesting question is, how did Pliny obtain materials for writing such a history while he was on active service? Writing an equestrian manual in a single volume is one thing, as is writing the biography of a man he had known well for most of his life. But a twenty-volume history is a serious literary endeavour and suggests a certain amount of reading in the subject. Did Pliny have periods of furlough when he was able to return to Rome or at least to a civic centre which might contain a library whether public or private? Every soldier was entitled to a certain amount of leave each year. Some visited family, others went sight-seeing. For Pliny, these periods may have provided time for literary research.¹ Perhaps they coincided with a change of commissions. Rome is a long way from Germania Inferior and furlough which took him there would have needed to be extensive. On the other hand, (and perhaps, under the circumstances, more likely) did friends send him books on request?² How much oral evidence was he able to collect from German veterans, not to mention from Germans themselves? This question of Pliny's sources will be discussed further in Chapter 4, but it is one which figures large in Pliny's compositional method, for the majority of his works may well have been composed outwith Rome and this could provide one reason for his keeping such voluminous *Commentarii*. These would have provided a record of reading which he might not be able to repeat very easily.

A second question is, how long did it take Pliny to write these twenty volumes, engaged as he was at the time on active military service? I shall be discussing Pliny's rate of composition in Chapter 3, but Appendix 5 sets out the possible word-rates of the *NH*, and if we take the slower of the two illustrated there, we find that he could have composed the *BG* in c. 189 days. How these should be spread in the time he had available, what time he did have available, and whether they should be spread at all are, of course, other matters.

picture of Pliny's career will place composition at almost any time after 50 when Secundus was still alive. He suggests 53. Otto suggests 57/58. See Sallmann: *ANRW* (32.1), p. 600 footnote 80.

¹ See Davies: *Army*, 67. His range of evidence is wide but includes Suetonius (*Galba*, 6.3).

² Martial 1.117.1-4; 7.97. Scribonius Largus: *Compositiones*, 97. Books so borrowed were often copied. See Marshall: *Phoenix*, 30 (1976), 254.

Studiosus

Next came three volumes of the *Studiosus*, divided into six because of their length ('propter amplitudinem'), 'quibus oratorem ab incunabulis instituit et perfecit'. The work was praised in later times. Aulus Gellius tells us it contained much varied material to delight the ears of *eruditi*; and Quintilian observed that Pliny carried out his research almost to excess.¹ Neither, however, was altogether happy with the use he made of his material. Gellius quotes an argument used by Pliny, which Pliny thought 'lepide arguteque', and then points out that Pliny had failed to see the fallacy behind it. Quintilian refers to Pliny's anecdote about Cicero's wearing his toga ankle-length because he wanted to hide his varicose veins, and then observes that Pliny had not looked closely enough at statues which showed there was nothing odd or individual about the practice. It sounds like a familiar blend of anecdote and hasty composition.² Since Pliny's next book was almost certainly written in 67 or 68, the *Studiosus* must have preceded it.

Dubius Sermo

This book on grammar in eight volumes was written, we are told by Pliny the Younger, 'sub Nerone novissimis annis, cum omne studiorum genus paulo liberius et erectius periculosum servitus fecisset'. Pliny the Elder, however, dates it for us even more accurately. In the Preface to the *NH*, he tells Titus that all kinds of scholars have been trying to reply to his 'libellos quos de grammatica edidi' and that 'subinde abortus facere iam decem annis', (*Præf.* 28). Obviously, if this dedicatory letter was written in 77/78, it follows that the *Dubius Sermo* must have appeared in 67/68 and thus, for the first time, we have a fairly firm date for one of Pliny's works.³

How far we should accept what the nephew says about Pliny's motives for writing the book is uncertain. Griffin has pointed out that Nero's feud 'was not with what writers said or how they wrote, but with their excellence and success', adding, 'it is difficult enough to produce good literature when the content is circumscribed, but it is impossible . . . when it is quality itself that is proscribed', (*Nero*, 160). But why should Pliny fear

1 Gellius: *NA* 9.16.3. Quintilian: *Institutio*, 11.3.143.

2 Nevertheless, Quintilian did include Pliny among the more reliable contemporary authors of books on rhetoric, *Institutio*, 3.1.21.

3 See also Aly in *PW* 21.295. Della Casa: *Il Dubio Sermo di Plinio*, 15-16. Serbat: *ANRW* (32.4), pp. 2080-1.

Nero's attention? He was not a writer of verse or even of history in verse, such as Lucan, or Seneca in his tragedies. Still less was he a writer of novels or of moral tracts, such as Petronius and Seneca. The only possibly contentious work he had produced so far was the *BG*¹ and it was certainly popular, despite its acknowledged faults, since Tacitus seems to have made good use of it and Symmachus was still recommending it in the late fourth century.² But I have suggested (*supra*, pp. 90-1) that Pliny may have indulged in a little flattery of Nero and thus hoped to command favourable notice, if not to draw the sting from a delicate subject. Without knowing more about the contents of the *BG*, it is too difficult to speculate further on the reasons for Pliny's choosing grammar as a relatively safe topic for his studies.³

A Fine Aufidi Bassi (Historiæ)

Apart from this phrase and 'triginta unus', this is all Pliny the Younger has to say about his uncle's second most expansive work. One might argue that he himself may not have seen, or at any rate read, the work: but this is an unlikely hypothesis, since Pliny himself says to Titus that 'statutum erat heredi mandare', (*Præf.* 20). The younger Pliny may simply have been scrupulously observing that silence which the author saw fit to maintain about the work, since he had put it away and clearly did not want it published in his own life-time, (*Præf.* 20). But by the time the Younger wrote his letter, his uncle had been dead for twenty years and more,⁴ and there was no longer any reason to remain silent about a book which was certainly in circulation, although not necessarily published, in

1 See Sallmann's discussion, *ANRW* (32.1), especially pp. 596-601.

2 Tacitus: *Annales*, 1.69; 11.18-20; 12.27-8; 13.53-7. Syme: *Tacitus*, 1.290-3, 296. Symmachus: 'enitar, si fors votum iuuet, etiam Plinii Secundi Germanica Bella conquirere', *Epistulæ*, 4.18.5.

3 It is possible he may have feared that his luxuriant prose-style would attract the Emperor's jealousy. See the comments of Lounsbury: *Suetonius*, 21-2. But see also Holtz: 'Pline et les grammairiens', in *Nantes* (1987), 549-53. Syme suggests that Pliny may have spent these later Neronian years outwith Rome as 'the encyclopædia discloses no anecdotes about metropolitan life comparable to those reflecting the author's youth in the reign of Caligula', *RP* 7.502.

4 For the dating of Book 3, see Sherwin-White: *Letters*, 31. The letter to Bæbius Macer, unfortunately, cannot be dated. For a comparison between Sherwin-White's dating and that of Syme, see Aubrion: *ANRW* (33.1), 318-19. There is little disagreement between them as regards Book 3.

our sense, by c. 120 since Tacitus refers to it twice (*Annales*, 13.20; 15.53).¹ But perhaps the simplest explanation is that Pliny expected Bæbius Macer to be familiar with it already, since he remarks, 'quod tam diligenter libros avunculi mei lectites', (*Ep.* 3.5.1). Nevertheless, it is worth noting that the nephew has something to say about each one of his uncle's other works. The bald title and number of volumes of *AB* (henceforth, *Historiæ*) therefore strikes one as slightly odd.

Pliny the Elder's mention of it in his *Preface* tells us only enough to intrigue. 'Vos quidem omnes, patrem, te fratremque, diximus opere iusto, temporum nostrorum historiam orsi a fine Aufidii. Ubi sit ea, quæres? Iam pridem peracta sancitur; et alioqui statutum erat heredi mandare, ne quid ambitioni dedisse vita iudicaretur', (*Præf.* 20).

One or two useful points can be gleaned or inferred from this: (i) a suitable finishing-point for the *Historiæ* would be 71 when Vespasian and Titus held their joint Judæan triumph and Domitian was *consul suffectus* for the first time. Particular distinction could therefore be attributed to each and the book could finish on a high note for all three. Pliny does specifically include Domitian ('fratremque'). Moreover, 'nostrorum' in the phrase 'temporum nostrorum historiam' is inclusive of all three Flavians and Pliny himself, and thus implies that the work extended at least as far as the point where the three Imperial figures could be associated 'iuste'. Again, 71 seems to be the year most appropriate for this.² (ii) The clear lack of any particular title for the work suggests, as others have pointed out, that Pliny simply took up the story from the point where Aufidius Bassus had broken off—in the middle rather than the end of a reign, perhaps. The fall of Sejanus in 31 and the invasion of Britain by Claudius in 43 have been put forward as possible starting-points.³ It would be interesting to know why Pliny chose to complete someone else's work, (if this is what 'a fine Aufidi Bassi' implies), rather than begin a new

¹ On the date, see Syme: *Tacitus*, 2.473.

² Brunt says of Tacitus and the Batavian revolt that he was a contemporary in 69-70, but too young to be an eye-witness and probably derived his account in part from Pliny, *Latomus*, 19 (1960), 494. Presumably this means he used the *Historiæ* which is thus datable post 70.

³ Wilkes: *CW* 65 (1972), 197. Townend: *Hermes*, 89 (1961), 233. Other examples of titles *a fine* can be found in *TLL* 6.793.16-19. Only that by Aurelius Victor directly mirrors Pliny's.

contemporary history of his own.¹ We know from Quintilian (*Institutio* 10.1.103) that Aufidius had written a history of the German war. This is likely to have dealt with among other things, Tiberius's campaigns in Germania. The evidence, however, is extremely thin.² Nevertheless, one can see that Pliny could have read Aufidius's work as part of his own preparation for writing German history and later seen it as a challenge to finish and even surpass the earlier man; as he wrote to Titus concerning his completion of Aufidius's work, 'proinde occupantibus locum faveo, ego vero et posteris quos scio nobiscum decertaturos sicut ipsi fecimus cum prioribus', (*Præf.* 20).

(iii) 'Peracta' indicates that the work was finished and 'iam pridem' that it had been completed for quite a long time before 77/78. How long 'quite a long time' means is impossible to determine, but Pliny's other uses of 'iam pridem' suggest that he associated the phrase with the notion of centuries ago rather than just a few years.³ It sounds, therefore, as though Pliny was saying the equivalent of 'I finished it ages ago'. If we accept that 71 was a possible stopping-point for the narrative, we may like to accept that late 71 or early 72 are possible dates for completion of the work itself. Six or seven years, however, does not represent all that long a period.

But when did Pliny begin to compose his *Historiæ*? Aufidius probably did not die until early or late Spring in 64.⁴ Pliny could have

¹ Tacitus began his *Historiæ* with January, 69 because it provides a point of historical balance between the death of Nero and the accession of Vespasian. See *Historiæ*, 1.1 and Syme: *Tacitus*, 1.145. He started his *Annales* with the death of Augustus. Thucydides started his account of the Peloponnesian War because he believed from the outset that the war was significant. (*Historiæ*, 1.1). The opening of Velleius Paterculus's work is lost. The closest parallel, then, comes from Xenophon who begins his *Hellenica* with μετὰ δὲ ταῦτα, generally agreed to mean the last events described by Thucydides. See Anderson: *Xenophon*, 61-2. This is so odd and so abrupt a beginning that one wonders how readers knew that Xenophon was pre-supposing they had read Thucydides.

² See Wilkes: *CW* 65 (1972), 197.

³ Examples are 2.202; 6.111; 15.43; 15.47; 16.7; 19.71; 21.42; 25.10; 31.42; 31.80; 31.107; 33.63; 33.147; 34.99; 35.4. These, apart from *Præf.* 20 and one conjecture by Mayhoff (33.144), are Pliny's entire usage in the *NH*. Several draw a contrast between 'a long time ago' and 'now' ('nostro ævo/nunc').

⁴ Seneca, *Epistulæ Morales*, 30, begins: 'Bassum Aufidium, virum optimum, vidi quassum, ætati obluctantem'. Clearly Aufidius was then more or less on his death-bed, and since this letter is one of a sequence whose dramatic date appears to be early/late Spring 64, it is likely that Aufidius died not long after.

begun writing straight away, of course, but if I am right in suggesting that his military career is to be dated to the sixties, he was *præfectus alæ* in Germania about this time and still had to compose his *Dubius Sermo* 'sub Nerone novissimis annis' (not to mention his *Studiosus*); and although it is possible he wrote one while researching the other, we also have to bear in mind that he may have waited until his work on grammar was finished before he returned to the contentious subject of contemporary, or at least very recent, history. Pliny the Younger, after all, emphasises how difficult it was under Nero to write anything 'liberius et erectius'.

We have then, two possible time-scales for composition, provided we accept that a likely finishing-point for the work was the Judæan triumph of 71. (a) Pliny began it soon after the death of Aufidius in Spring 64 and completed it in 71, at some time post June, the month of the triumph. This gives him c. 7.5 years. Appendix 5 gives two suggested work-rates for the composition of the *NH*. The slower, involving a start in 72 and a finish in 78, would mean Pliny's working for an average of 54/55 days per year if he wrote at 1,500 words per day; or 33/34 days if he increased that word-rate to 2,500. If he began the *NH* in 76 (see Chapter 2), he would have had to work for 158 days per year at the slower rate, or 96 days at the faster. The faster rate supposes he completed the *NH* in about three years = twelve Books per year on average. The slower rate would require half that output. To finish the *Historiæ* in the 7.5 years available according to this suggestion, therefore, would suppose he wrote little more (on average) than four Books per year—a leisurely enough speed which would permit him to conduct research at the same time.

In view of the difficulties I have mentioned in connection with this early start, however, perhaps (b) may be considered a little more likely. This supposes that Pliny began the *Historiæ* after he finished the *Dubius Sermo* and, indeed, after Nero's death in June 68, a period of about 3.5 years. It is approximately the time-scale of writing the *NH* (36 Books) at the faster rate. This pattern of researching and writing at top speed also fits well the portrait Pliny the Younger gives of his uncle.

(iv) 'Sancitur' is an unusual verb for the context in which Pliny the Elder uses it. Translators have disagreed about what it means here: (a) 'the draft has long been finished and in safe keeping', (Loeb); (b) 'Achevée depuis longtemps, elle reçoit la sanction du temps', (Budé); (c) 'Schon längst vollendet, wartet es auf die Bestätigung', (König-Winkler). The last two do not make much sense, the first may be right. For it depends on which

which textual variant seems most plausible. 'Sancitur' is the reading of *p* and *l*, 'sanctitur' of *e* and *a*, and this makes much better sense. We know, for example, that temples were used by wealthy Romans to store money and precious objects and therefore it does not seem impossible that important documents may have been lodged in the protection of a deity's house.¹ Is this what Pliny did? We may be able to detect a train of thought passing through his mind while he wrote or dictated these words, for only two brief sentences before he had said, in relation to his writings, 'multa valde pretiosa ideo videntur quia sunt templis dicata', (*Præf.* 19). Nevertheless, there are problems with *sanctitur*. It does not appear unmistakably in any text, so we cannot be sure such a word actually existed. It is possible that objects became *sanctus* simply by being placed in a temple, because the Romans would perhaps not have used them as personal banks and repositories had that not been the case. But temples were open to the public, so how safe were they? I still favour, on balance, the reading 'sanctitur', but the puzzle still remains.

(v) 'Alioqui statutum erat' presents certain difficulties of interpretation. 'Alioqui' has a whole range of possible meanings: 'otherwise; at other times (or in other places) as a general rule; apart from these considerations; moreover, if it were not the case; on the other hand; as a matter of fact'. There are 87 examples of its use in the *NH* (88, if one counts a conjecture by Mayhoff = 21.69), and these appear to cover virtually all the possibilities I have listed above. We are left, therefore, to take common sense or intuition as our guide. Now, a summary of the points Pliny is making in *Præf.* 20 yields the following: (a) I have written about all three of you in my supplement to Aufidius Bassus; (b) Where is it? (c) I finished it some time ago; it's in safe keeping; (d) and 'alioqui' I had decided to entrust it to my nephew in case people might think that my publishing it now was an act of political ambition.

The pluperfect of 'statutum erat' is important. Here it clearly refers to an act completed prior to another past act which has been specifically

¹ See Juvenal 14.258-60 and his scholiast *ad locum*. Cf., Quintilian: *Institutio*, 3.6.41; 7.3.10. Herodian 1.14.3. 'Sectatur' is the reading of *d* and *T*. Hardouin's emendation, 'sarcitur', raises more questions than it tries to answer. Pliny's only other use of 'sancior' ('sanciens', 15.82) relates to Cato's prescription *re* proper rations for labourers, 'as if laying down a law', and is clearly irrelevant to the context of Pliny's passage. Galen remarked that he wrote for novices, pupils and friends and that he had no desire to publish, or to write for future generations, *De Ordine Librorum I* (vol. 19. 49-50K). This, of course, is unlikely to have been Pliny's case.

mentioned by the author. Pliny had decided to hand over the manuscript (presumably to his nephew) even before he had finished writing it. Once it was completed, the book was put under lock and key, so to speak, and that is where it still was at the time of his writing *Præf.* 20. 'Sancitur/sanctitur' is in the present tense. In consequence, I think 'alioqui' is here best translated as 'and in any case', that is to say, quite apart from the fact that Vespasian and Titus figure prominently in the book and each in turn became Emperor.

So why did Pliny decide not to publish the *Historiæ* in his own lifetime? Ogilvie suggested, *re* Livy, that 'if publication of the last twenty-one books of his history was postponed, it will have been, as was the case with Labienus and Pliny the Elder, until their author's death because of their embarrassing, and perhaps incriminating contents'.¹ Townend remarked that Pliny's excuse about not wanting to be accused of flattering Vespasian and Titus was nonsense. (It may have been, of course, but it is equally possible that Pliny meant exactly what he said. It rather depends on one's reading of his character). Townend accepted Ciaceri's proposal that the *Historiæ* was written while Pliny was filling procuratorships in the provinces—a proposal with which my discussion of Pliny's career invites me to agree—and went on to suggest that Pliny's absence from Rome at this time caused him to make several injudicious historical judgements which rendered the work unsuitable for publication after all.²

It is possible that dissatisfaction of some such kind may help to explain non-publication; and if Pliny's engagement on such a work had been known in advance, he might have found it advisable to offer Titus an explanation for its non-appearance. 'Ne quid ambitioni dedisse vita iudicaretur' suggests it was highly flattering to the Flavians, but 'iam pridem' may imply that it was now somewhat *passé* and therefore the moment for its publication was also gone. Together they form rather a

1 *A Commentary on Livy, Books 1-5*, p. 3.

2 Ciaceri: *Ricerca sulla storia e sul diritto Romano*, 391-3. Townend, *Hermes*, 88 (1960), 107, 111-12 and *Latomus*, 20 (1961), 338-40. See also Syme: *RP* 2.750 and *Tacitus*, 1.293. The actual references we have to the *Historiæ*—and they are few—deal only with the reign of Nero and its aftermath. The earliest incident is datable to 55 (Tacitus: *Annales*, 13.20) and the latest to the war against Vitellius (Tacitus: *Historiæ*, 3.27-8). On the two occasions Pliny implicitly refers to the book (2.199 and 232), he uses the phrase 'sicut in rebus eius exposuimus' where 'eius' refers to Nero.

feeble excuse, but the dedication of the *NH* may have served to gloss over what was perhaps an embarrassing point.

Naturalis Historia

'Naturæ historiæ triginta septem, opus diffusum eruditum nec minus varium quam ipsa natura' is how Pliny the Younger describes his uncle's last and most famous work. In Chapter 2 I shall discuss in detail the possible dates of its composition. There are two: (i) 72-77/78 or (ii) 76-77/78. During much, if not all, of this time, he is likely to have been outwith Italy on procuratorial service. What this implies for the collection of material and the process of composition will be discussed in Chapters 4 and 5. Discussion of work-rates takes place in Chapter 3. It shows that even if we accept the shorter alternative period for composition, at a work-rate of 2,500 words per day, Pliny need not have worked more than 96 days a year during that time to get the whole thing written. That would have left plenty of time for research and public duties.¹

It is a shame, however, that many of Pliny's contemporaries thought his researches a waste of time. 'Immo vero plerisque ultro etiam inrisui sumus ista commentantes atque frivoli operis arguimur', (*NH* 22.15) is his uncharacteristically bitter comment.

Conclusion

A possible time-table for Pliny's career and the composition of his literary works can take the following forms. The first is the model set up by Münzer, endorsed and refined by Syme, to which reference-books especially now tend to give credence. The second takes into account the reservations about this model which have been made by others now including myself. I have called the former, Model A and the latter, Model B.

¹ Seneca's remark to Lucilius is interesting. 'Delectat te, quemadmodum scribis, Lucili virorum optime, Sicilia et officium procurationis otiosæ', *NQ Præf.*, IV a.1 Sicily, of course, may not have been a typical posting.

<u>Model A</u>	
Career	Writings
Pliny was born in Comum Novum in 23/24	
During the late 30s and early 40s he may have been in Rome	
In 47 he was in Germania Inferior, with Domitius Corbulo.	While in Germania he wrote <i>De Iaculatione Equestri</i> and probably <i>De vita Pomponi Secundi</i> . He may also have at least begun his <i>Bella Germaniæ</i> .
In 50-51 he was in Germania Superior, with Pomponius Secundus.	
In c. 57 he was back in Germania Inferior. During his time in Germania, Pliny held the military posts of <i>præfectus cohortis</i> , <i>tribunus militum</i> and <i>præfectus alæ</i> . He was also, at some point, <i>contubernalis</i> with Titus.	
At the end of the 50s and for most of the 60s he may have been in Rome. Certainly he was in retirement.	During retirement in the 60s he may have completed his German History and certainly wrote <i>Studiosus</i> and <i>Dubius Sermo</i> . ¹
Between c. 70 and c. 76 he held four procuratorships: Gallia Narbonensis, Africa, Hispania Tarraconensis, and Gallia Belgica. He was also appointed Prefect of the Misenian Fleet, and held an advisory post as <i>amicus principis</i> .	During the 70s he wrote his completion of Aufidius Bassus's <i>Historiæ</i> and his own <i>Naturalis Historia</i> .
He died on 25 th August, 79.	

<u>Model B</u>	
Career	Writings
Pliny was born in Comum Novum in 23/24	

¹ Nailis suggested that between 55 and 66, not only did Pliny write and publish the minor works, with the exception of the *Historiæ*, but that he also wrote large sections of the *NH*. These, he said, were run into a continuous piece either by Pliny himself or by his secretaries from perhaps 73. Insertions were made later.

<p>He probably started school with a <i>ludi magister</i> in 30/31 and perhaps went to Rome in 34/35 for further education under a <i>grammaticus</i>.</p> <p>In 39/40 he assumed the <i>toga virilis</i> and began a civilian career in local administration.</p>	
<p>By 53 he had reached the position of <i>duovir</i> or <i>IVvir</i>, and after a year in office took the next step of entering upon the equestrian military <i>cursus</i>.</p>	
<p>His first military office was <i>praefectus cohortis</i>. He served in Germania Inferior under Pompeius Paulinus.</p>	
<p>In 58/59 he became <i>tribunus militum</i> under Duvius Avitus. In 58 he took part in a Roman retaliatory campaign against the Frisii who had invaded and settled upon territory set aside for Roman veterans south-east of the IJsselmeer.</p>	
<p>In 61 he was <i>contubernalis</i> with Titus.</p>	
<p>In 62/63 he was promoted <i>praefectus ala</i>.</p>	<p>At some point during the next four years (c. 62-66) he wrote <i>De Iaculatione Equestri</i> and <i>De Vita Pomponi Secundi</i>, and began, at least, his <i>Bella Germaniae</i>.¹</p>
<p>In 65/66, after a fairly standard length of military career, he may have left the army, although he could equally well have stayed there until much nearer the start of his procuratorial career.</p>	
<p></p>	<p>In 66/67 he wrote <i>Studiosus</i>.</p> <p>In 67/68 he wrote <i>Dubius Sermo</i>. This date is more or less certain. The earlier dates of his compositions are conjectural.</p>
<p>During the 70s he filled a number of procuratorial posts. The only one we know for certain is Hispania Tarraconensis. That there were others, we also know. Precise dating cannot be done.</p>	<p>Perhaps during the late 60s, but more likely during the 70s, he wrote <i>Historiae</i>, his completion of the work of Aufidius Bassus. For reasons we do not know, he decided not to publish this during his own life-time.</p>
<p>During the 70s he held the advisory post of <i>amicus principis</i>, and at some point after his procuratorships he was appointed Prefect of the Misenian Fleet.</p>	<p>Between 72 and c. 78 or, more likely, between 76 and c. 78, he wrote <i>Naturalis Historia</i>.</p>
<p>He died on 25th August, 79.</p>	

¹ For a comment on Pliny's age at this starting-point of his literary endeavours, see Appendix 6.

The Date of Composition of the *Naturalis Historia*

It is generally taken for granted that Pliny wrote the *NH* during the reign of Vespasian. Editions such as the Budé and Loeb either concur with this assumption or make no comment at all. Similarly, works of reference such as Lemprière's *Bibliotheca Classica*, Smith's *Dictionary of Greek and Roman Biography and Mythology*, Pauly-Wissowa's *Real-Encyclopædie*, the *Oxford Classical Dictionary* and the *Dictionary of Scientific Biography*, assign Pliny's final work to the seventies. Only once or twice does one come across a notice which claims to be more exact. Dezobry and Bachelet, for example, proposed that Pliny began the *NH* in 71;¹ the eleventh edition of the *Encyclopædia Britannica* put out as fact the theory that Pliny 'apparently published the first ten books himself in AD 77, and was engaged on revising and enlarging the rest during the two remaining years of his life';² and two editors of the Budé edition, Ernout (Book 1) and André (Book 16), are confident that 77 is the *terminus ante quem non* of the work. Ernout implies that *NH* was written between 70 and 77, but adds that it may not have been published until after Pliny's death, and then with several corrections. André dates Book 16 to 77 (with the clear implication that the whole work was composed much later than is usually assumed).

What no one appears to have done, however, is to examine the *NH* in detail to see if it is possible to work out a proposal for the date of composition, which will be more exact, or perhaps simply less inexact, than those which have been offered until now.

Attempting to suggest dates within which the *NH* may have been composed, however, is not easy because it rests entirely upon internal evidence—chance references within the *NH* to datable events or

¹ *Dictionnaire générale de biographie et d'histoire* (Paris, 1922). They provide no evidence for their assertion.

² Note by J. E. Sandys. This proposition disappeared between the eleventh and fifteenth editions. It is based on a phrase which appears at the end of several Books in two manuscripts. 'Steht in einigen Hss. am Schluß mancher Bücher editus post mortem . . . es scheint, daß die Notiz in B hinter allen (also den letzten 6) Büchern steht, in R hinter XI und XII', Kroll in *PW* 21.300. The meaning of *editus* is discussed later in this chapter, pp. 161-2.

persons—which can also be supported, even if in somewhat tenuous fashion, by reasonable inference drawn from other data. Pliny the Younger gives details of his uncle's working practices, and a bibliography listing his works in chronological order,¹ but says nothing about when the *NH* was written. Nor does Pliny himself give any direct information about when he began the work or, indeed, finished it. Any suggestions one can make, therefore, about either date are speculative.

Nevertheless, an attempt to date the *NH* ought to be made because, apart from pure interest, other speculations hang upon the conjecture. How did Pliny arrange and write up the material at his command? The answer to that depends on how much time he had available. How much time did he have? That depends on knowing the dates within which the *NH* was written.

Two points should be made at the outset. First, it can be shown that, with the exception of Book I which was not added whole until the rest of the work had been completed,² Pliny almost certainly wrote the Books which make up the *NH* in the order in which we now have them, that is to say, in sequence and not haphazardly. Appendix 2 sets out in detail Pliny's references to earlier Books as he proceeds in his composition and these references—nearly 400 of them—reveal unmistakably the steady linear flow of deliberate sequence. (See also Figure 8 overleaf). They fall into one of three categories:

- (a) those giving the number of a previous Book—'secundo volumine, sexto volumine'. There are ten such references;
- (b) those which refer to a previous volume—'priore volumine'. Again there are ten references, of which eight refer to the Book immediately preceding, and two to the one before that;
- (c) those which refer to subject matter Pliny has already touched upon and to which he draws one's attention by formulæ, the most common being 'ut diximus'. The only piece of evidence which appears to suggest that one Book was written out of sequence is 22.132 where 'diximus' refers to 23.95. As it is the only example from 386, however, I think one may be entitled

1 'Quo sint ordine scripti', *Ep.* 3.5.1.

2 See *Præf.* 33. The oldest manuscripts have individual indices attached to each Book, only *E*, *F*, and *R* preserving Book 1 as a whole. See Beaujeu's note to his Budé edition of Book 1, pp. 44-5 and Kroll in *PW* 21.300. Reynolds gives a very useful outline history of the transmission of the texts, showing how uncertain the reading often is, *Texts and Transmission*, 307-16, especially 311.

to suggest that 'diximus' is either a scribal error for 'dicemus' which Pliny regularly uses to indicate future discussion of a point,¹ or a simple lapse of memory on his part.

Figure 8, part 1

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
4	x	x																
5			x															
6	x	x		x														
7		x	x	x	x													
8	x																	
9					x		x											
10		x			x	x	x	x										
11						x	x	x	x									
12					x	x				x								
13					x						x							
14											x	x						
15											x	x	x					
16				x		x	x	x	x	x	x	x		x				
17	x						x				x	x	x	x	x			
18	x			x	x		x	x				x	x	x	x	x		
19							x				x	x		x	x			x
20							x					x			x			x
21										x	x	x	x		x		x	x
22	x									x			x	x	x		x	x
23											x	x	x	x	x			
24	x										x	x	x		x		x	x
25							x		x		x			x			x	x
26											x						x	
27													x				x	
28	x					x	x			x								
29	x								x	x								
30																		
31	x		x						x									
32						x	x	x										
33						x	x											
34																		
35	x	x		x		x	x		x									
36			x	x					x									
37						x		x										

¹ E.g., 2.173; 5.10; 6.161; 8.193, 228; 13.11; 15.94; 16.134, 143; 18.23, 72, etc. There are twenty-six examples altogether.

Figure 8, part 2

	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
21		x																
22	x	x		x*														
23	x	x																
24		x																
25	x	x	x	x	x													
26	x	x	x		x	x												
27	x			x			x											
28						x												
29		x			x				x									
30			x						x	x								
31					x		x		x									
32		x					x	x	x				x					
33																		
34														x				
35										x				x	x			
36							x								x	x		
37														x				x

The left hand column refers to separate volumes of the *NH* and the upper row to references made to other Books in that particular volume. Thus, reading across, Book 4 contains references to Books 2 and 3; Book 6 contains references to Books 2, 3, and 5, etc.

Reading the columns downwards reveals how many Books make reference to the Book at the head of the column. Thus, Book 2 is mentioned in Books 4, 6, 8, 17, 18, 22, 24, 28, 29, 31, and 35.

The x* refers to the single anomaly which I have suggested may have been the result of scribal error.

Secondly, finding a *terminus ante quem non* is not as difficult as it might seem. References to Nero's death (2.199, 232; 37.29) and comments redolent of contempt for or hatred of him (17.245; 22.92, 238; 30.14-17; 36.113, 124; 37.19-20) make it clear that Pliny must have been writing after

Nero's suicide, i.e., later than 9th June 68; and indeed the fact that the *NH* was written in sequence shows that he wrote none of it before that date.¹

But it is possible to narrow the choice of starting-dates even further. Two references to the principate of Vitellius give us 69 (34.38 and 35.163), and acknowledgement of 'Domitianus Cæsar' as a source of information for Book 33 brings us effectively into 70, as Domitian was not declared *Cæsar* until the very end of 69. Could it be argued that these late references may have been additions to a manuscript undergoing revision? It might but for two things. One is the large number of references datable to the Vespasianic period. It beggars belief that all should have been sprinkled like salt over a work already completed. The second is a sequence of references to Mucianus's third consulship, an unusual distinction, dating from May 72. The normal length of tenure for a *consul suffectus*, which is what Mucianus was in 72, was two months. If it were longer, it would probably be four months.² Pliny first singles him out in 2.231 so, bearing in mind once again that the *NH* was almost certainly written in sequence, we can say that Pliny did not begin writing until May 72 at the earliest. One implication of this is that we should find that dates relating to the seventies exhibit some form of progression during the course of the *NH*, earlier years of the decade in earlier Books, and later dates in the later. Should any late date appear in the earlier Books, therefore, it will require explanation.

So now we come to the business of setting out the evidence for dating. This I propose to do as follows and according to the following criteria. I shall deal with each Book in turn as it appears in a modern edition, actually beginning with Pliny's prefatory letter to Titus. Dates which appear in each Book, or may be inferred from material therein, I shall classify in one of three ways: A) Specific, such as when a datable event, for example, Mucianus's third consulship is mentioned; B) Vespasianic, when one can reasonably assume that the person or event is datable to the seventies; and C) Possibly Seventies, when it can be argued that there is no good reason against dating a piece of evidence to the seventies, even though there is not sufficient proof that it must come from there. Once the whole review of the evidence is complete, I shall

1 Collection of material for the *NH*, of course, may be a different matter. See further Chapter 5.

2 See Gallivan: *CQ*, 31 (1981), 186.

make my own observations and endeavour to draw whatever conclusions may be possible.

PREFACE

2 references

A) Specific: none

B) Vespasianic: (i) 1 (ii) 3

(i) 1 'dum maximi consenescit in patre'.

The verb indicates that Vespasian was still alive, and so this must have been written before 24th June 79.

(ii) 3 '[Titus] triumphalis et censorius tu sexiesque consul ac tribuniciaē potestatis particeps et . . . præfectus prætorii'.

The dates of these offices are as follows: (a) triumph = June 71; (b) censorship = (?) April 73-(?) April 74; (c) sixth consulship = 77, probably starting in January and ending before September; (d) tribunicia potestas = 1st July 71; (e) præfectus = (?) March 72. The consulship, then, is the latest. He did not become consul again until January 79. It is not clear when Titus left office in 77, but Catellius Celer and Arruntius Aquila were suffect consuls in early October, so Titus must have retired before then. Indeed, if precedent is reliable, he may not have continued in office beyond April. Compare the years 72, 74 and perhaps 76.¹ When Pliny dedicated the *NH* to Titus, therefore, he could not have done so before 77, but one must bear in mind that he could have written the preface at any time in 78, too. In consequence, we must be prepared to include 78 in our calculation about the time available to Pliny for composition.²

¹ Jones: *Titus*, 209, 82-3, 80, 84. Gallivan: *op. cit, supra*, 189, 202, 214.

² In his commentary on Book 2, D. J. Campbell makes one or two assumptions about the date 77, which require brief notice. He argues that Mommsen's interpretation of 'intra quadriennium' (7.162) as 'four years ago' indicates that Pliny was working on Book 7 in the year 77. He writes,

A preface dedicated to Titus in 77 shows that by this date the work was practically completed, and thereafter until his death he was engaged in revision, with the result that only the first decade was actually brought out by him, the remainder being entrusted to his heir and literary executor, his nephew the younger Pliny,

C) Possibly Seventies: none

BOOK 1

1 reference

A) Specific: none

B) Vespasianic: (i) 33

(i) 33 'Domitiano Cæsare'

Domitian was proclaimed *Cæsar* after the fall of Vitellius at the very end of 69, in December. In practical terms, therefore, this dates Pliny's reference to the seventies.

C) Possibly Seventies: none

BOOK 2

7 references

A) Specific: (i) 57a (ii) 89 (iii) 231

(i) 57a 'Nam ut xv diebus utrumque sidus quæreretur et nostro ævo

accidit imperatoribus Vespasianis patre III filio
consulibus'.

(filio EapD. -io II FR¹. -io iterum, dR^{2v})

C. *Plinii Secundi naturalis historiæ liber secundus*, 2 n. 3. Mommsen: *Römisches Staatsrecht*, 2.350, n. 3.

Now, Campbell's 'practically completed' is odd. In *Præf.* 17, Pliny refers to 36 volumes of the *NH* and in *Præf.* 26, he specifically draws attention to the subject matter of Books 34 and 35. So the work was not 'practically completed'; it was completed. Secondly, it is scarcely thinkable that Pliny offered the whole work to Titus when in fact only ten Books were actually ready for publication. Thirdly, the idea that Pliny the Younger was to edit and publish the final 26 volumes looks like a misreading of *Præf.* 20 wherein Pliny says he will leave publication of *A fine Aufidi Bassi* to his nephew: either that, or it is perhaps an assumption based on the previous mistake about the date of Book 7. That Pliny may have revised or expanded the *NH* between 77/78 and his death is, of course, possible. Fourthly (perhaps a quibble), the *Preface* does not provide any evidence at all for the theory that Pliny published only the first ten volumes of the *NH*. That notion depends upon manuscript notes whose provenance is unknown and whose authority is therefore weak. See the discussion on *editus*, pp. 161-2.

There appears to be no doubt about the days, the month, or the year in which an event like this took place. There was a partial lunar eclipse on 4th March 71 and a total solar eclipse on 20th March in the same year. Both would have been visible in the region of Rome and Naples.¹ One problem does exist, however, and that lies in Pliny's reference to the consulships of Vespasian 'and his son'. Vespasian held his third consulship in January-February 71 with Nerva as his fellow. Domitian was consul for the first time between March and June that year. Titus did not hold his second consulship until January-April 72, by which time Vespasian was in his fourth. Since the phenomena to which Pliny refers can be dated so accurately to March 71, however, it seems obvious that one should accept the conclusion of the Budé note *ad locum*, which suggests that Pliny simply made a mistake and joined Titus to Vespasian because he assumed it had been so. After all, when Pliny uses the plural 'Vespasiani', he always means 'Vespasian and Titus', never 'Vespasian and Domitian', (Cf., 3.66; 7.162; 12.111). Certainly the appearance of 'filio' in the text rather than the son's name suggests a slight vagueness in the source, but as Titus was the senior of the two *fili*, had Pliny read or heard or received his information in the form 'Vespasian and his son', identification of Titus as the *filius* would have been quite natural.²

- (iii) 89 [On comets] 'Acontia iaculi modo vibrantur, atrocissimo significatu; hæc fuit de qua quinto consulatu suo Titus imperator Cæsar præclaro carmine perscripsit, ad hunc diem novissime visa'.
(ocissime RdTz. -mę F. *dist. va. J. an atrocissimo? cfr XVIII*
354—carminū Fa)

Titus held his fifth consulship between January and February 76. It may have lasted until April.³ In the list of comet appearances given in *PW*, the comet immediately before this is Vitellius's in 69 and the one

¹ Schove: *Chronology*, 16. These dates give a period of 17 days, according to Roman reckoning, but I do not think one need tie Pliny down to an exact 15 days any more than one would expect modern use of 'a fortnight' necessarily to mean fourteen days and not an hour extra. Besides, Pliny's memory (or informant) could have miscalculated: it is easily done.

² Moreover, had Pliny been out of Italy in 71 for one of his procuratorships, his memory could have played him false, especially if this passage were being composed several years later.

³ Gallivan: *CQ*, 31 (1981), 188, 214.

immediately after, Vespasian's in 79.¹ Pliny is the sole authority both for the appearance of the 76 comet and for Titus's poem on the subject.² Now, the comet which announced Vespasian's death was the long-haired variety, a fact which enabled the Emperor to make two jokes on the subject.³ It is thus irrelevant to any consideration of Titus's comet. Unfortunately, the only corroborative evidence we have of a comet in 76 also indicates that it was 'long'.

'On a *kêng-yin* day in the eighth month of the first year of the Chien-Chhu reign-period [7th October 76] a (*hui*) comet appeared at the *Thien-Shih* (Enclosure) measuring two feet (*chhih*). It moved slowly and entered within three degrees (*tu*) of the *Chhien-Niu* (ninth lunar mansion) and gradually went out of sight after a total of forty days'.⁴

The term *hui* refers to that type of comet known as a 'broom-star', its body being a kind of star and its tail resembling a broom.⁵ It appeared over China in October and was visible until mid-November, and is the only comet recorded for 76.

Two astronomical points can be made. First, two observers at approximately equal geographical latitudes but different longitudes would observe the same night sky on any given evening at any time of the year. It is most probable, therefore, that the Chinese event would have been visible from the Mediterranean. Secondly, the visibility of a comet is a function of the relative position of the Earth, the Sun and the comet at the time. A large number of comets is visible outwith the Earth's orbit as long as they approach the sun. They then become 'lost' in the day sky as their orbit brings them inside the Earth's orbit and then takes them round the

1 PW 11. 1187-93. See also the Budé note *ad locum*.

2 Suetonius does mention that Titus wrote verses in Greek and Latin, *Titus* 3. Cf., Pliny, 'quantus in poetica es', *Præf.* 5.

3 Suetonius: *Vespasian* 23. Dio Cassius 66.17. Dio says this comet was visible for a long time.

4 Ho Peng Yoke: *Vistas in Astronomy* 5 (1962), 150. This comet is mentioned briefly by Schöve: *Chronology*, 286. A note by R. S. Rogers is worth bearing in mind here: 'The Chinese annals give us the truth and nothing but the truth, though not necessarily always the whole truth. Their lists of heavenly appearances are entirely reliable as far as they go, but may sometimes be incomplete', *TAPhA* 84 (1953), 248, n. 26.

5 Yoke: *op. cit.*, *supra*, 136. The next comet in the Chinese sources is dated to 23rd January 77. It remained visible until May. Schöve attributes this to Pliny, Dio, and Titus (*Chronology*, 286) but has clearly made an error, as Dio was referring to the comet which heralded Vespasian's death and that did not occur until 79.

sun. Then they become observable once more as they travel again outwith the Earth's orbit and are visible from the non-illuminated night side of the Earth. The same comet is therefore observable on two separate occasions. Cometary tails can and do change their appearance dramatically during their passage into and out of the solar system. One cannot gauge the orbit of this Roman/Chinese comet, but a typical time-scale for the process I have described above would be about a couple of months. There is, however a much greater lapse of time than this between the Roman and the Chinese comets of 76, so one is bound to question whether the Roman/Chinese observations are those of a single comet entering and leaving the solar system.¹

(iii) 231 'Mucianus ter consul'

This can be dated from 29th May to the end of July 72, if the suffect consulship lasted for the usual two months, or to the end of September if it lasted for four.²

B) Vespasianic: (i) 18

(i) 18 'Cum liberis suis vadit maximus omnis ævi rector Vespasianus Augustus fessis rebus subveniens'.

This flattering allusion to Vespasian would obviously best make sense if it referred to a period very early in the reign when 'rector' and 'subveniens' would have a certain immediacy.

C) Possibly Seventies: (i) 57b (ii) 117 (iii) 150

(i) 57b 'Intra ducentos annos Hipparchi sagacitate conpertum est', etc.

Hipparchus's recorded observations range from 162-126 BC. This gives us a period of about 38-74 AD to satisfy Pliny's two hundred years. The manuscripts agree on 'ducentos'. One should bear in mind, however, that this is a round figure. Such numbers may be meant literally, but they may have been rounded up or down. See further my comments *infra*, pp. 136-7.

¹ I am grateful to Mr. Paul Bennie for advice on these astronomical points.

² Gallivan: CQ, 31 (1981), 186.

- (ii) 117 'Nunc vero pace tam festa, tam gaudente proventu litterarum artiumque principe', etc.
(rerum *ll.v. an* litterarum?)

The natural inference is that Pliny is paying a compliment to Vespasian who certainly restored peace after the turmoil caused by Nero's death and the struggle of successive Emperors to maintain their power. It is true that active patronage of the arts is more commonly associated with Nero, but Vespasian too encouraged rhetoric, poetry, sculpture, engineering, drama, and music, if only by lavish gifts to individual practitioners, even though it could be argued that in his case the interest was motivated more by notions of efficient government than by *liberalitas*.¹ In the absence of the Emperor's name, then, one is bound to class this passage here rather than in B.

- (iii) 150 [On 'sun-stones'] 'Ego ipse vidi in Vocontiorum agro paulo ante delatum'.

The Loeb edition suggests 'delapsum' instead of 'delatum', but this seems to be an unnecessary alteration of the manuscripts' reading. There can be no doubt that Pliny saw the stone with his own eyes while he was in Gallia Narbonensis, and it makes perfectly good sense to say that 'it had been brought from the fields only a short time before', (Bostock-Riley translation). The question is, when did Pliny see it? Syme suggests that Pliny may have been procurator there very briefly in 70, taking over from Valerius Paulinus, before going on to a better post in Africa. The evidence, however, as Syme is the first to admit, is thin and the case for such a procuratorship inconclusive.² See *supra*, pp. 67-9.

BOOK 3

7 references

A) Specific: (i) 59 (ii) 66

- (i) 59 'Mucianus ter consul'

This refers to 29th May-July/September 72.

1 Suetonius: *Vespasian*, 18. Woodside: *TAPhA* 73 (1942), 123-9.

2 *RP* 2.751, 764, 748-9.

- (ii) 66 '[On Rome] 'Moenia eius collegere ambitu imperatoribus censoribusque Vespasianis anno conditæ DCCCXXVI m. p. XIII CC complexa montes septem'.

The month in which Vespasian and Titus entered their censorship is open to debate, but is commonly accepted as April, the year being 73. As Zehnacker points out, this paragraph about Vespasian was obviously written after the rebuilding and refurbishing operations and is thus no earlier than the end of 73 or the beginning of 74.¹

Other Plinian references to AUC appear to confirm that he accepted 753 as Rome's foundation-date, even though there were several from which to choose. Atticus and Varro, for example, proposed 753 but the *Fasti Capitolini* chose 752. Polybius, Cicero, Livy and Cato accepted 751; Fabius Pictor, 747; and Cincius Alimentus, 729.² Forty-four examples of Pliny's usage, however, reveal that in three out of four cases he supports his AUC date with reference to something else, usually a consular year but sometimes an Olympiad or an archonship at Athens.³ When this happens, we can see clearly that he regarded 753 as the foundation-year of the City.

Thus, we may date this passage to 73 or perhaps early 74.

1 See Jones: *Titus*, 83. Zehnacker: *Helmantica* 37 (1986), 319-20.

2 See Bickerman: *Chronology of the Ancient World*, 77-8. For Fabius Pictor, see Dionysius of Halicarnassus 1.74. For a more detailed account of the variations in calculating the foundation-date, see Samuel: *Greek and Roman Chronology*, 250-2.

3 The references are as follows:

- | | |
|-----------------------------|---|
| (a) AUC and Olympiad: | 2.37, 53, 90; 34. 7; 36.47. |
| (b) AUC and archonship: | 3.58; 33.113. |
| (c) AUC and consuls: | 8.19; 9.137; 15.2; 29.12; 30.12; 33.32, 44;
34.20; 35.12, 14; 36.49. |
| (d) AUC and other dating: | 3.66; 8.16; 10.5; 14.73, 95; 15.1; 16.44;
17.3; 18.107; 19.32; 29.15; 33.27, 148,
149; 34.14. |
| (e) No supportive evidence: | 8.16; 14.87, 94; 15.1, 2, 77; 16.216, 235;
33.20; 35.19, 22. |

B) Vespasianic: (i) 30

(i) 30 'Universæ Hispaniæ Vespasianus imperator Augustus iactatum procellis rei publicæ Latium tribuit'.

It is widely, but not universally, accepted that the Flavian grant of Latin rights to the whole of Spain can be assigned to the censorship of Vespasian and Titus, dated April 73 to April 74.¹ Bosworth, however, has argued that this ascription is unjustified and that a more likely date is 70-1. This is not the place to rehearse his proposition in detail, but his main points may be summarised thus: (i) There is no warrant for extending the census of 73-4 to embrace the whole Roman world; (ii) granting Latin rights was an Imperial prerogative and not an associated power of the censorship; (iii) epigraphical evidence from Spain is inconclusive; (iv) Pliny's 'iactatum' is an odd Teubner reading and one should re-adopt the reading universally agreed before, 'iactatus' [R(?)^ava.]. *cfr.* U52]. He says,

If this variant reading is accepted the passage becomes perfect Latin and much less obscure; 'Vespasian when tossed about by the storms of state gave Latin rights to the whole of Spain'. Now there is only one period in which Vespasian could be said to have been 'iactatus procellis rei publicæ', and that is the early part of his reign, when the Rhine rebellion was still raging . . . The description is certainly grossly inappropriate if it refers to a period later than 71 AD. What is more, late 70 or early 71 would have been an ideal period for the grant of Latin rights. Spain had been quick to embrace the Flavian cause, and Vespasian had no need to be dilatory in rewarding the province.²

¹ The censorship did not necessarily last for a fixed period of time, as censors took office in order to perform specific duties. See Suolahti: *The Roman Censors*, 26-7. It is Censorinus who tells us that this Flavian *lustrum* was completed in 74, *De die natali* 18.14. Pliny's reference to the census 'quem intra quadriennium imperatores Cæsares Vespasiani pater filiusque censores egerunt', (7.162) must mean four years before the date on which he was writing. See Jones: *Titus*, 82-3, who discusses the matter fully. We do not know, however, exactly when Pliny was writing Book 7, but the phrase argues a later rather than an earlier start to composition in the seventies. In support of Latin rights to Spain at this point see Wiegels: *Hermes* 106 (1978), 213. Mackie: *Administration*, 215-17. Watkins: *CJ* 84 (1988-9), 125.

² *Athenæum* 51 (1973), 54-5. Earlier points are taken from pp. 50-4.

In rebuttal of these points, Mackie refers to inscriptions from Spain itself. These commemorate the donors' acquisition of Roman citizenship after the expiry of their term of office as magistrate, and as they run from 75 onwards, 'this means that the grant is unlikely to have been made later than Vespasian's censorship of AD 73-74'.¹ An inscription from Bætica, honouring Vespasian after his death, places emphasis upon the censorship and thus, says Mackie, helps to create 'a slight presumption that the grant was made during the censorship itself'. She argues further that Vitellius had been lavish with his grants of Latin rights and may have set a precedent which Vespasian was happy to follow in relation to Spain in particular; and she acknowledges that Pliny: *NH* 3.30 offers no certain interpretation which can lend to positive dating.² Her only acknowledgement of Bosworth's linguistic point comes in her note 3: 'As the text stands, Pliny alludes delicately to a sensitive subject. *Iactatus*, understood as referring to the situation in AD 70-1, is . . . on the contrary disconcertingly explicit'. Bosworth, however, has answered this objection: 'The participle *iactatus* need have no causal force. It is probably purely temporal; "Vespasian gave *Latium* at a time when he was buffeted by the storms of state"'. There is no necessary implication that the storms of state *caused* the donations. The first year of Vespasian's reign was tempestuous by any reckoning, and the Emperor was caught in the storm like any of his subjects. There is no reason why Pliny's description should have caused offence.³

Watkins, in pursuit of a slightly different topic, accepts the suggestion made by Conole and Milns that Titus Plautius Silvanus Ælianus was legate of a specially combined Spanish province consisting of Bætica, Lusitania and Tarraconensis, and during 70-71 laid 'the groundwork for the extension of Latin rights, which must already have been in the planning stage'.⁴ Assuming that Vibius Crispus was Silvanus's successor, and assuming that the census which Crispus undertook was mentioned in his career-description because it was unusual, Watkins concludes that the Flavian census of 73-74 is still the most likely date for Vespasian's granting Latin rights to Spain.⁵ As Conole

1 *Op. cit.*, n. 25, p. 215.

2 *Op. cit.*, p. 215-16.

3 *Athenæum* 51 (1973), 55, n. 26.

4 *CJ* 84 (1988-9), 124-5. Conole-Milns, *Historia* 32 (1983), 192-4.

5 *Op. cit.*, *supra*, 125.

and Milns point out, however, 'neither the exact date nor the geographical limits of Plautius's Spanish *legatio* can be determined with any precision', and although this suggestion of an unusually comprehensive *legatio* is very attractive, the conclusion that he was merely laying the groundwork for a grant of Latin rights is a *non sequitur*. As Bosworth demonstrates, granting these rights was an Imperial prerogative and not an associated power of the censorship. 'Iactatus' still makes best sense if it refers to the earliest period of Vespasian's reign.¹

Nevertheless, 'iactatus' does not pass without criticism. Zecchini has recently drawn attention to the paucity of manuscript support for it and suggests that Bosworth's point is thus 'filologicamente insussistente'.² 'Baseless' is putting it rather strongly. Well before Bosworth, Henderson drew attention to the linguistic problem posed by 'iactatum' and wondered if 'iactatae' might not provide better sense.³ Undoubtedly it would make the sentence easier to translate: 'iactatae', however, has no manuscript authority, whereas 'iactatus' does even if, as Zecchini says, it may come from the hand of a corrector.

Zecchini goes on to point out that *Latium* is both a geographical and a juridical expression, and that whereas only the former can be tossed by storms, only the latter can be granted to Spain. Pliny, he says, deliberately employed the word for its ambivalence, for during the end of the first century BC and the beginning of the first century AD, there was an increasing tendency to use *Latius* as an adjective meaning 'Roman' in its broadest sense, and hence to equate *Latium* with Rome, Italy, Empire.⁴ So

if Pliny used *Latium* as "Latin right" but also as "Rome, Italy, etc.", his statement would imply that Vespasian had extended to

¹ *Historia* 32 (1983), 193. Bosworth: *Athenæum* 51 (1973), 57. Sherwin-White makes the slightly odd remark that 'the grant of Latin status to the Spanish province was made by Vespasian before or during his censorship in 75', *The Roman Citizenship*², 361; but also comes to the conclusion that 'the grant should have been made soon after AD 70, if it was intended to quieten Spanish opinion after the civil wars, as Pliny suggests ambiguously the *NH* 3.30', (p. 361, n. 2).

² *ZPE* 84 (1990), 140.

³ *JRS* 32 (1942), 13.

⁴ *Op. cit., supra*, 142-4, and especially 144, n. 28: 'mi sembra che la progressiva assimilazione semantica di *Latius* a *Romanus* quale emerge dall'uso poetico latino tra I sec. a C. e I sec. d C. sia parallela all'assimilazione giuridica'. The following quotation comes from 144, and the rest of the remark refers to 145-6.

Spain the identical right which obtained in Rome, in Latium, and in Italy, in other words in the centre of Empire.

Theoretically in the years after the crisis of 69, one could not do this. In practice, however, the situation was quite different and Pliny, who was not, after all, writing a legal text-book, managed to assimilate the two ideas in one. Zecchini is thus prepared to see the grant of Latin rights following soon after 69-70.

In general, therefore, one may say that there are sufficient reasons to question the assumption that Vespasian's grant was made during his censorship, and to say that a somewhat earlier date is perfectly plausible, but that the question still remains open.

C) Possibly Seventies: (i) 25 (ii) 120 (iii) 139-40 (iv) 146

(i) 25 'ex colonia Accitana Gemellense, ex Libisosana cognomine
Foroaugustana, quibus duabus ius Italiae datum'.

It has been argued that Pliny's is the earliest use of the phrase *ius Italicum* and that creation of the *ius* probably belongs to the early Flavian period.¹ The argument is a little tenuous, hanging upon (a) Pliny's furnishing the earliest use, (b) Pliny's unfamiliarity with the term—*ius Italicum* in 3.139, *ius Italiae* here—thus arguing its relative newness, and (c) noticeable activity of Vespasian's government in the areas Pliny mentions.

(ii) 120 [Various mouths of the River Po]. 'Omnia ea fossa Flavia'.

One may reasonably assume that although the canal itself was ancient ('quam primi a Sagi fecere Tusci'), the name was changed to honour the new Imperial dynasty. These geographical Books frequently record changes of name. A nagging doubt perhaps remains with this one, since Pliny does not say that it was called anything else before. Acceptance of such a change for 'fossa Flavia', however, would mean that the reference is datable to the seventies.

(iii) 139-40 'Arsiae gens Liburnorum iungitur usque ad flumen Tityum . . .
ius Italicum habent ex eo conventu Alutae', etc.

¹ Watkins: *CJ* 84 (1988), 117-19.

The arguments which applied to 3.25 are similarly applicable here.¹

(iv) 146 'Flavium Solvense'

Similar arguments to those for 3.120 apply here. The main difference between 3.120, 3.146 and 4.47 which mentions 'Flaviopolis' is that the latter is given as a change of name whereas the other two are not.

BOOK 4

4 references

A) Specific: none

B) Vespasianic: (i) 45 (ii) 47 (iii) 102 (iv) 110

(i) 45 'Develcon, cum stagno quod nunc Deultum vocatur veteranorum'.

This is on record as a Vespasianic creation in an inscription of 82.²

(ii) 47 'Intus . . . regio Cænica, colonia Flaviopolis ubi antea Cæla oppidum vocabatur'.

The geographical region with which Pliny is dealing at this point is the Chersonese. Cæla, between Sestos and Madytus on the Hellespont, appears to have had the status of a city as early as 55 AD, and was probably the headquarters of the procurator of the Chersonese. Flaviopolis, on the other hand, in spite of what Pliny says, is likely to have been a different place altogether: perhaps Aphrodisias not far from Lysimacheia on the neck of the Chersonese. If this is so, Pliny may have confused Cæla and Flaviopolis while trying to combine information derived from two different authorities—a type of mistake he made elsewhere.³ But however Flaviopolis is to be identified, the name implies a city founded or newly-named in the seventies.

(iii) 102 [On Britain] 'xxx prope iam annis notitiam eius Romanis armis

non ultra vicinitatem silvæ Calidoniæ propagantibus'.

(Calidoniæ RAϣ(D). Calyd- r. Caled- L. add. ac AE²y)

1 See further Watkins, *op. cit., supra*, 129-31, 132, 135.

2 'Colonia Flavia Pacis Deultensium', *ILS* 6105, quoted by Birley: *ZPE* 64 (1986), 210.

3 See Jones: *The Cities of the Eastern Roman Provinces*², 16-17. For examples of Pliny's mislocation of other cities, see Hoyos: *Historia* 28 (1979), 439-69, especially 449-50 and 453.

'Caledonia', it is clear, refers to the north of Britannia, that is to say, Scotland. Ptolemy's summary of its position (*Geographica* 2.3.8) is recognisably in agreement with the geography of Tacitus.

On the face of it, Pliny seems to be referring to Claudius's campaign of 43. 'Nearly thirty years ago'—and the manuscripts agree on 'xxx' as the correct reading—would then give us a date in the mid-seventies, quite consistent with the kind of dating we have already found in the early Books of the *NH*. But Claudius's British campaign got no further than the south of England,¹ and therefore the reference to Caledonia seems to make no historical sense.

The clue to what I take to be Pliny's meaning here lies in the words 'notitiam, non ultra', and in the fact that Vespasian played a part in this Claudian campaign, especially in that operation which subdued the Isle of Wight.² Any reference to Britain with the directive 'xxx prope iam annis' must have been meant to include an oblique glance at the part Vespasian played there—a touch of flattery, in fact. But was this flattery slipped in with a touch, too, of wry humour? Since Vespasian did not actually get further north than the south of England, 'a point not beyond the Caledonian Forest' sounds like a delicate joke: not impossible, since Vespasian, as we know, was not a vain man and had a fine sense of humour himself.³

However, there may be no need to conjecture this at all, since 'notitiam' implies that knowledge of or information about Britain was available to the Roman armed forces, but only as far as the Scottish border,

¹ See Salway: *Roman Britain*, 82-5. His Map III gives a very clear indication of the exact extent of Roman conquest in the forties, fifties, sixties and seventies. From this one can see that Roman arms came nowhere near Scotland until the eighties. Scouting parties, of course, could have got further than the main army, but not—at least, not in 43—as far as Caledonia. There is no evidence, at any rate, that they did.

² Dio Cassius 60.20.3. Tacitus: *Agricola* 13.3. Suetonius: *Vespasian* 4.

³ We can see the same sort of thing happening in Valerius Flaccus when he addresses the unnamed, but unmistakable, 'tu . . . sancte pater' who had sailed upon the Caledonian ocean—Vespasian again, to be flattered by the suggestion that his exploits had extended to the far north of Britannia, *Argonautica* 1.8. We do not know the exact dates of Flaccus's life, but he died in about 93, so it is possible he was a much younger contemporary of Pliny. The *Argonautica* is addressed, in the first instance, to Vespasian and contains references to the fall of Jerusalem in 70 and the eruption of Vesuvius in 79.

where it stopped. Under either of these circumstances, we are probably dealing with Claudius's campaign and in consequence a date in the early seventies is appropriate for this passage.¹

(iv) 110 'Amanum portus ubi nunc Flaviobriga colonia'.

As the change of name coupled with 'nunc' indicates, Pliny must be referring to a colony founded in the seventies.²

C) Possibly Seventies: none.

BOOK 5

4 references

A) Specific: (i) 38 (ii) 73

(i) 38 'Proxumo bello, quod cum Cæensibus gessere initiis Vespasiani imperatoris, compendium viæ quadridui deprehensum est'.

The war involving the people of Cæa in Africa took place in 70, for which see Tacitus, *Historiæ* 4.50. Cæa was in the Tripoli region, far removed from that region of Africa apparently known to Pliny from personal experience.

(ii) 73 'Infra hos Engada oppidum fuit, secundum ab Hierosolymis fertilitate palmetorumque nemoribus, nunc alterum bustum'.

The upper city of Jerusalem was burned on 8th September 71. See Josephus: BJ 6.354-5.

¹ If we take Pliny literally, however, there is a problem because Roman *arms* did not extend even into the Lowlands of Scotland, far less the Highlands, until Agricola's third term of service in Britain between 78 and 84. He arrived in the late summer of 78 and immediately began campaigning in Wales, and it was not until 79 that he turned his attention to the north of England, and not until 81 that he made his way into Scotland; Tacitus: *Agricola* 22-24. He did not reach the Highland Line until the campaigns of 83 and 84. So Pliny had been dead for several months before 'Roman arms', in the sense of a conquest, actually got as far as anything which might be called 'the Caledonian Forest'.

² See further Etienne: *La culte impériale dans la péninsule ibérique* 188. Knox-M^cElderry, *JRS* 8 (1918), 99-100. The termination *-briga* appears to be Celtic. See Garáa y Bellido: *ANRW* I.1 (p. 478).

B) Vespasianic: (i) 20

- (i) 20 [Grant of Latin rights]. 'A Vespasiano imperatore eodem munere donatum Icosium'.

A dedicatory inscription from Icosium to Vespasian, discovered in 1896, enables us to work out the approximate dating for this—approximate because, unfortunately, the lettering is damaged at crucial points in the text. The key words are as follows:

[I]mp(eratori) Cæsari/Vespasiano/A[u]g(usto)/
 [p(ontifici)] m(aximo) tr(ibuniciaë) p(otestatis)
 [V]I or [VI] Im[p(eratoris) . . .] co(n)s(uli)
 V[I or II] p(atri) [p(atriæ)].

Vespasian's fifth consulship ended on 13th January 74; his sixth, either on the same date or perhaps a little later in 75; and his seventh at a similar time in 76. From what the inscription goes on to say about the naming of Flavius, a Roman magistrate belonging to the city, we can deduce that these rights had been granted by the time the dedication was made. Pliny's reference, then, can be dated to some time between 70 and 74, or between 70 and 76 at the latest.¹

C) Possibly Seventies: (i) 69

- (i) 69 'Inde Apollonia, Stratonis turris, eadem Cæsarea, ab Herode rege condita, nunc colonia Prima Flavia a Vespasiano imperatore deducta, finis Palæstines'.

This is clearly a reference to the period of Vespasian's Judæan campaign which took place between July and about September 69. From then until the end of the year, Vespasian and Titus were in Syria and Palestine, arranging both immediate provincial and Imperial affairs, and then in Alexandria. Pliny's 'nunc colonia Prima Flavia' sounds like a note made not long after the event, but that could mean 69 itself just as well as early in the seventies. The latter, however, is the more likely.

¹ The text given is by Le Glay in *Antiquités Africaines* 2 (1968), 20. For the dates of Vespasian's consulships, see Gallivan: CQ 31 (1981), 188-9. For full details about Icosium, see the Budé note *ad locum*.

BOOK 6

1 reference

A) Specific: none.B) Vespasianic: none.C) Possibly Seventies: (i) 122.

(i) 122 'Nuper Vologesus rex aliud oppidum Vologesocertam in vicino condidit'.

This new foundation was built near Seleucia-upon-Tigris as a commercial rival to it by King Vologeses I of Parthia. There is slight disagreement over the King's dates: 51-78 (PW 9A¹.769) or 52-c. 80 (*Oxford Classical Dictionary*).¹ The reference is included here because of the possibility that the King founded the town at some point during the seventies. Debevoise's observation that—'the date of this foundation or re-foundation was probably between 55 and 65, since it is mentioned in Pliny, *NH* 6.122. The tenth book of Pliny's work was published in 77—makes little sense.² The notion that Book 10 was published in 77 is quite mistaken (see *infra*, pp. 161-2) and Pliny's reference gives no clue, direct or indirect, which could suggest either 55 or 65.

BOOK 7

3 references

A) Specific: (i) 162

(i) 162 'Accedunt experimenta recentissimi census quem intra quadriennium imperatores Cæsares Vespasiani pater filiusque censores egerunt',

As I have mentioned earlier, Vespasian and Titus began their period as censors in 73, probably April.

¹ The eleventh edition of *Encyclopædia Britannica* suggests 51-77; the latest, 51-80. Debevoise proposed c. 51-c. 79, *A Political History of Parthia*, 174 and 213-14; Colledge, c. 51-c. 80, *The Parthians*, 50-1.

² *Op. cit.*, *supra*, 204. He refers to Ammianus Marcellinus (23.6.23), but this does not help as it merely mentions the city as one of several in a list.

Pace Mommsen who wished to interpret 'intra quadriennium' as 'four years ago' rather than 'within the last four years',¹ Pliny's use of 'intra' does seem to be consistent with the latter meaning. Four other examples will illustrate the point.

(i) 2.57 'Intra ducentos annos Hipparchi sagacitate conpertum est et lunæ defectum aliquando quinto mense a priore fieri', etc.

What Pliny seems to be saying is that 'within a period which is no more than two hundred years from the time of writing', Hipparchus made his discovery. 'Less than two hundred years ago', as the Loeb translation puts it.

(ii) 12.13 'Primus C. Matius ex equestri ordine, divi Augusti amicus, invenit nemora tonsilia intra hos lxxx annos'.

'Intra' indicates that we should not interpret the number as exact, but approximate. The invention was made 'within these eighty years', that is, 'within the last eighty years'.²

(iii) 12.118 [Of the balsam-tree] 'DCCC HS amputatio ipsa surculusque veniere intra quintum devictæ Iudææ annum'.

This does not mean 'at the conquest of Judæa five years ago' but 'within five years after the conquest of Judæa'.

(iv) 36.109 [On Lepidus's Roman house considered, in 78 BC, to be among the finest in the city] 'At, Hercules, intra annos xxxv eadem centensimum locum non optinuit'.

Again, 'within a period of thirty-five years' is the only translation which makes sense.

So Pliny's 'intra quadriennium' in 7.162 probably means 'within the last four years'. Now, according to Censorinus, Vespasian and Titus completed their censorship in 74,³ again perhaps in April, so we may date this passage to some time in 77.

¹ *Römisches Staatsrecht* 2.350, n. 3.

² Similarly, 9.26 'intra hos annos' = 'within the last few years'; 14.49 'in hisce xx annis' = 'within the last twenty years'. Cf., Petronius, 'intra hos dies' = 'within the last few days', *Satyricon* 38.4. There is agreement among the Plinian manuscripts about 'LXXX', except for *r* which has 'XXX', an obvious and simple error which does not affect the point under discussion here.

³ *De die natali* 18.14. See also Jones: *Titus*, 82-3.

B) Vespasianic: (i) 74

(i) 74 'Tam vero ante annos prope mille vates ille Homerus', etc.

The Budé edition *ad locum* cites Cornelius Nepos in Aulus Gellius, NA 17.21.3, who says that Homer lived about 160 years before the foundation of Rome, i.e., about 913 BC. A date in the seventies, the later the better, will produce a year approximate to Pliny's 'prope mille annos'.

C) Possibly Seventies: (i) 210

(i) 210 'Veteres Græcas fuisse easdem pæne quæ nunc sint Latinæ indicio erit Delphica antiqui æris (quæ est hodie in Palatio dono principum', etc.

Tacitus refers to the appointment of commissioners in 70 whose various tasks included examination and restoration of bronze tablets inscribed with laws, which had started to disintegrate through age.¹ These, however, are entirely different from the antiquarian piece here mentioned by Pliny. 'Principum' hardly makes sense if we imagine Pliny meant that the Julio-Claudians and/or Flavians made a kind of joint gift of this particular tablet. But 'Vespasian and Titus' makes sense as a concept, if we allow that Pliny knew both of them as Emperors and may have associated them so closely during Vespasian's reign that 'principum' was used as shorthand for both.

BOOK 8

1 reference

A) Specific: (i) 6

(i) 6 'Mucianus ter consul auctor est'

This refers to 29th May-July/September 72.

B) Vespasianic: none.

¹ *Historiæ* 4.40. Cf., Suetonius: *Vespasian* 10. This particular measure could not be attributed directly to Vespasian because he had not yet arrived in Rome. Domitian may have ordered it of his own accord or under instruction from his father or Mucianus.

C) Possibly Seventies: none.

BOOK 9

1 reference

A) Specific: none.

B) Vespasianic: none.

C) Possibly Seventies: (i) 89-90

(i) 89-90 'Non sunt prætereunda et L. Lucullo proconsule Bætici comperta de polypis quæ Trebius Niger e comitibus eius prodidit'.

It has been suggested both that this Lucullus could have been L. Sallustius Lucullus and that he can be assigned office in Bætica in c. 75.¹ The evidence for both suggestions is, however, slim. Certainly there are cogent reasons for rejecting Pliny's Lucullus as L. Licinius Lucullus of the second century BC. Nothing, unfortunately, is known independently of the life of Trebius Niger.²

BOOK 10

1 reference

A) Specific: none.

B) Vespasianic: (i) 120

(i) 120 'Cum hæc proderem, habebant et Cæsares iuvenes sturnum, item lusciniæ, Græco ac Latino sermone dociles, præterea meditantés assidue et diem nova loquentes, longiore etiam contextu'.

The Budé, the Loeb, and the König-Winkler editions have notes to the effect that these 'Cæsares iuvenes' were Britannicus and Nero, son and stepson of Claudius, an assumption which appears to date the passage to the fifties and to imply that Pliny was in some fashion working on the *NH* well before Vespasian's reign, an implication which the editors do not appear to have noticed or upon which, at any rate, they offer no comment. There is, however, the alternative view that the 'Cæsares iuvenes' were

1 Conole-Jones: *Latomus* 42 (1983), 630-33.

2 See Bardon: *La littérature* 2.145-6.

Titus and Domitian; so it is important to see whether one can confirm either this or the earlier hypothesis, since the implied dating of 'cum hæc proderem' must depend upon who the young men were.

Pliny gives four examples of talking birds in this section:

(i) a thrush belonging to Agrippina—'Claudii Cæsaris', as she is designated. This may mean that one can date the reference to between 49, when she married Claudius, and 59, when she died (120), although 'Claudii Cæsaris' may also simply be the standard way of referring to her, without necessarily meaning that she was Claudius's wife at the actual time of the story;

(ii) the starling and nightingales belonging to the 'Cæsares iuvenes';

(iii) a raven belonging to a cobbler during Tiberius's reign. It used to salute Tiberius, Germanicus, and Drusus by name every morning, and was given a state funeral on 28th March 35 (121-3);¹

(iv) a crow belonging to a Roman *equus* came to Pliny's attention, 'nunc ... erat in urbe Roma hæc prodente me', (124)

This last example is obviously of no help in dating either the sequence of stories or Book 10 itself, but since (i) and (iii) clearly belong to the reigns of Tiberius and Claudius, and since the Claudian anecdote immediately precedes the one about 'Cæsares iuvenes', it can readily be understood why the aforementioned editors decided that (ii) also belonged to Claudius's reign.

Is the word 'iuvenes' of any help in deciding who these young men were? Technically, *iuvenis* refers to any adult male beyond the age of about 14 up to about 45, and usage seems to indicate that although *iuvenis* was most frequently applied to men at the younger end of the scale, it could still encompass quite a variety of ages.² When Quintilian wrote of 'iuvenes nondum scholam egressi', he probably had in mind boys in their

1 'Hoc gestum M. Servilio C. Cestio cos. a. d. V kal. Apriles', (123). The Loeb edition has '36 AD', which may be a misprint. Germanicus died in 19 and Drusus in 23, so to pick up their names the raven must have been old enough to learn them prior to 19. This would make the bird at least seventeen when it died, not an impossible age. The maximum recorded age for a *Corvus brachyrhynchos*, for example, is fourteen, and for a *Corvus frugilegus*, twenty. See J. C. Welty: *The Life of Birds*³ (New York, 1982), 425.

2 Under the Roman Kingdom, according to Tubero, men were divided into (i) *pueri*, 'qui minores essent annis septem decem'; (ii) *iuniores*, aged from 17 to 46; and (iii) *seniores*, men beyond the age of 46. See Aulus Gellius: NA 10.28.1.

mid-teens.¹ Tiberius, we are told, did not make public the death of Augustus until 'Agrippa iuvene interempto'.² Agrippa was 26 at the time. Nero instituted *Iuvenalia* in honour of his first shave when he was twenty-two.³ Tiberius Sempronius Gracchus remarked of his wife that 'iuvenis est et parere adhuc potest', which, given the life expectancy of ancient Rome, probably means that she was in her mid-teens.⁴ This *iuvenis* is meant to stand in contrast with his own age, and we have another similar example from Pliny the Younger who says that he became a consul and an *augur* at a much younger age than Cicero, 'multo etiam iuvenior'.⁵ Cicero was 43 when he was consul and 53 when he gained the augurate: Pliny was 39 and 43 respectively—'iuvenior', certainly, but only just within the normally accepted range of *iuvenis*.⁶

In the light of these examples, then, what can be said of Pliny's 'Cæsares iuvenes'? Britannicus died in early 55, at about the age of fifteen, Nero being then in his eighteenth year. Titus, however, was sixteen and Domitian only four—definitely not a *iuvenis*—and neither, of course, was *Cæsar* at that time. But if we accept, for the moment, that Pliny was writing Book 10 at some time in the seventies, Titus would have been in his thirties and Domitian in his twenties. So *iuvenis* could fit either set of princes. Still, there is no need to assume that the story necessarily referred to circumstances in the seventies. Pliny might have collected the story earlier, and the editors be right in their suggestion.

The answer to the problem, then, must lie in his phrase 'cum hæc proderem'. What does 'prodo' mean? Does it mean 'publish', in which case the implication that the anecdote belongs to the same period as the writing of Book 10 is quite strong? Or does it mean 'record, write down, make a note of', in which case the implication would be that it belongs to a period earlier than the actual composition of Book 10? Here the Budé and Loeb translations differ slightly. 'At the time when I was recording these cases', clearly supports the latter notion; 'au moment où j'écris ceci', is not so clear, but does not really imply 'publish'.

1 *Institutio* 5.10.96.

2 Suetonius: *Tiberius* 22.1

3 Suetonius: *Nero* 11.1 and 12.4.

4 Pliny: *NH* 7.122. See also Syme, *Historia* 36 (1987), 318 with the literature there cited in notes 1 and 2.

5 *Ep.* 4.8.5. See also Sherwin-White: *Letters*, 78 and 79-80.

6 See the references in *TLL* s.v. 'Iuvenis' and Axelson in *Mélanges Marouzeau*, 7-17.

One clue to the meaning, before we look at Pliny's usage of 'prodo' perhaps lies in Pliny's 'Agrippina . . . habuit' as opposed to 'habebant et Cæsares iuvenes'. The perfect tense leads us to infer that Agrippina no longer had the bird at the time Pliny was recording his information, whereas 'habebant' suggests that the princes did still have their birds. Indeed, they certainly did, as Pliny adds, 'cum hæc proderem' to that particular story. So it looks as though the two anecdotes should be kept separate and not assigned to the same period. Still, there is plenty of time between 49 (the date of Agrippina's marriage to Claudius) and early 55 (the date of Britannicus's death) to fit them both in and yet keep them separate.

I have examined 190 other examples of Pliny's use of 'prodo' and suggest that it can be divided into three groups: (a) where 'prodere' is accompanied by 'auctor', 'auctores' or the actual name of the author, thereby making it quite clear that 'prodere' refers to a source already published; (b) where the context makes it quite certain that 'prodere' refers to a published author, even though no name or designator such as 'auctor' appears in the sentence; and (c) where the context admits of some doubt, albeit in most cases very small, whether 'prodere' refers to a written or a verbal report. In the first group there are 97 examples, in the second 50, and in the third 42.¹ Now, the third group is artificially large because I have included therein any use of 'prodo' which might conceivably admit of non-written interpretation; for example, 'restant immensæ subtilitatis animalia, quando aliqui ea neque spirare et sanguine etiam carere

¹ The references are as follows:

Group A	Group B	Group C
2.117; 3.16,114; 4.66(b), 81, 99, 118, 121; 5.7, 9, 14, 16, 36, 39; 6.15, 23, 27, 37, 52, 57, 58, 60(a, b), 63, 76, 81, 96, 97, 104, 139, 171, 183(b), 199, 200, 201, 206; 7.10, 11, 17, 23, 26, 36, 153, 171, 180, 213; 8.194, 201; 9.7, 11, 68, 90, 94, 123, 175; 10.4, 5(a, b), 7, 134, 172; 11.167, 273, 281; 12.9; 13.42, 70, 84, 88; 14.2, 53, 54; 15. 122; 16. 64(b), 81; 17.244, 267; 18.23, 47, 212; 19.12, 87; 25.8, 11; 28.21, 64, 78, 81, 181; 29.65; 30.3, 18; 31.51; 32.11; 33. 50; 34. 30, 36.	2.3, 83, 94, 100; 3.1; 4.66(b), 83, 98; 5.6, 8, 10, 55, 83; 6.164, 183(a), 208; 7.92, 128, 155; 10.51; 12.5, 56, 112; 14.3; 16.64(a); 18.166, 216, 279; 19.45; 24.168, 177; 25.12; 27.6; 28.13, 29, 112; 30.137; 32.6, 16; 33.52; 34.33, 37, 139, 152; 36.70, 79, 108; 37.33, 118, 133.	2.24; 6.7, 95, 181, 188, <u>191</u> , 197, 198; 8.61, 137, 164, 229; 11.1, 69, 135; 12.88; 13.91, 117; 14.117, 121; 16.110, 113, 130; 19.63, 84; 20.18, 142; 23.137; 24.103; 25.39; 26.26; 28.40, 44, 45, 67; 29.63; 31.8, 53; 33.78; 35.167; 37.53, 99. (6.191: [Of Egyptians at Æsar]. 'In eo produntur annis $\overline{\text{ccc}}$ habitasse'. The alternative reading 'prodente se' would refer the passage to a named author, Aristocreon, and thus transfer this reference from Group C to Group A.

prodiderunt' (11.1). That is almost certainly a reference to a written source, and is typical of the majority of inclusions in Group (c). But even if we stick rigidly to the above definitions, 147 usages out of 190 leave us in no doubt that in most cases when Pliny uses 'prodo' he is transmitting information which he has got via a written rather than a verbal medium—in other words, a book—and in consequence we should understand 'cum proderem' in the sense of 'when I was making known in writing'. That, in plain English, is *publication*, provided we do not interpret the word with modern implications.

Perhaps one or two specific examples will help to make this clear: (i) 2.117, 'Viginti amplius auctores Græci veteres prodidere de his observationes'; (ii) 5.9, 'Polybius . . . prodidit a monte eo ad occasum versus saltus plenos feris quas generat Africa'; (iii) 6.23, 'in quo multa aliter ac veteres proditurum me non eo infitias'. This 'proditurum' refers to the information about the interior of Asia, information which Pliny proceeds to give at once. It is based, he tells us, on the answers to questions put to Domitius Corbulo who knew the region well, and to royal visitors and hostages from there, easily accessible in Rome for interrogation. This usage, therefore, begins with verbal communication, almost certainly recorded in the form of notes, and now transmitted in writing to Pliny's readers. It is this third stage Pliny means by 'proditurum'.

So now let us look at six usages directly relevant to the passage under discussion. Four appear as Ablatives Absolute with the present participle:

(i) 7.23 'Auctor est Megasthenes [that on certain Indian hills live dog-headed humans] horum supra $\overline{\text{CXX}}$ fuisse prodente se'.

(ii) 8.194 '[Wool several hundred years old] in templo Sanci durasse prodente se auctor est M. Varro'.

(iii) 10.5 'Prodit . . . Manilius [information about the coincidence of the Great Year and the life cycle of the phoenix, a key-date being the day on which the Sun enters Aries], et fuisse eius conversionis annum prodente se P. Licinio Cn. Cornelio coss. ccxv'.

In each of these cases, the phrase 'prodente se' must mean 'at the time he was publishing this information', since that, as we have seen, is the regular meaning of 'prodo' in Pliny. Indeed, we can be certain that 'prodente' here must refer to written information because we know that both Megasthenes and Varro were the authors of books which Pliny

consulted, and so it is an inescapable inference that Manilius, too, was an author.¹

Therefore, when we read (iv) 10.124 'Nunc quoque erat in urbe Roma hæc prodente me equitis Romani cornix e Bætica', etc., we must take it that Pliny was including among his list of anecdotes about talking birds a story which was absolutely up-to-date: 'hæc prodente me', 'at the time I was publishing these things', i.e., Book 10. 'Nunc' here means not so much 'at this very moment' as 'what follows is a much more recent example', since his previous example—an extended tale about a talking raven—refers to the early years of Tiberius's reign: and the 'erat' will be a kind of Epistolary Imperfect, dating the writing down of the information as if it were the time when the *NH* had been finished and was being consulted by a future reader.

That leaves two more passages worthy of note, both based on one construction, 'cum proderem':

(i) 6.104 [On the Indian port, Muziris] 'Regnabat ibi, cum proderem hæc, Cælobothras';²

(ii) 13.42 [On a rare palm-tree] 'Eratque, cum proderem, fertilis'.

Now, in view of what has gone before, one must come to the conclusion that in both cases Pliny is saying, 'when I was publishing this' and that he actually does mean 'publish' as opposed to 'make a note of'. Oddly enough, both these references look rather like marginal notes which were later incorporated into the text, and indeed, one might suggest that the third example (and the one with which we began), 10.120 'cum hæc proderem, habebant Cæsares iuvenes sturnum', etc., may also have started life as a marginal note. But whether it did or not, the conclusions one must draw in relation to it from one's review of Pliny's use of 'prodo' are perfectly clear. First, Pliny's 'prodo' means 'publish'; secondly, the 'Cæsares

¹ Pliny tells us that Manilius produced an account of the phoenix 'de eo prodidit Manilius' (10.4), and we can date the consulship of Licinius and Cornelius to 97-6 BC. Manilius was therefore not a contemporary whom Pliny could have questioned. See further Bardon: *La littérature* 1. 177. The Varro passage is more clumsily expressed than the other two. If 'prodente se' means 'while he was publishing his book', 'auctor est' is more or less superfluous. I take the sense to be, 'Marcus Varro is the source of this information. He says that at the time he was publishing his book, Tanaquil's wool was still in existence in the Temple of Sancus'.

² This is probably not the name of a monarch but a group of people, (or possibly of a geographical region) in the north of India, Kailāvata. See Varāhamihira: *Brihat Samhitā* 14.26.

iuvenes' in this passage must have been Titus and Domitian, not Britannicus and Nero, since Pliny did not publish the *NH* until some time in the seventies, too late for the earlier princes; and thirdly, the implication of the Loeb, Budé and König-Winkler notes, that Pliny was working in some fashion on the *NH* during the fifties or sixties cannot be sustained by this passage.¹

C) Possibly Seventies: none.

BOOK 11

0 references

A) Specific: none.

B) Vespasianic: none.

C) Possibly Seventies: none.

BOOK 12

5 references

A) Specific: (i) 9 (ii) 94 (iii) 111 (iv) 113

(i) 9 'Licinius Mucianus ter consul et nuper provinciæ eius legatus'.

This refers to 29th May-July/September 72. 'Nuper' and similar expressions meaning 'recently' are not as straightforward as they seem in Pliny's usage. Often they cannot be dated but, more seriously, even when

¹ A brief history of 'prodo' before Pliny shows that his usage was not peculiar. In Cæsar it probably refers to oral rather than written communication more often than *vice versa*, largely because it appears frequently in contexts which refer to Gallic rather than Roman practice. See *BG* 1.13.7; 6.18.1; 6.20.3; 6.25.5; 7.77.3. Thereafter, however, the overwhelming evidence is that 'prodo' refers to written information. Cicero: *Tusculanæ* 1.29; *Pro Plancio* 94; *Pro Archia* 15; *De Re Publica* 2.31.54; *De Divinatione* 1.121; *Ad Familiares* 5.16.3 = SB187. Varro: *De Lingua Latina* 5.148. Nepos: *Alcibiades* 1.1; *Hannibal* 13.3. Livy: 8.18.2; 27.26.13. Celsus: *De Medicina* 4.22.4. Mela: *Chorographia* 2.104. Q. Curtius Rufus, 5.1.26, 35; 6.1.7; 7.8.11; 8.4.14; 9.1.13. (I am aware that Curtius's dates have been much disputed, but I accept the arguments of J. E. Atkinson: *A Commentary on Q. Curtius Rufus, Historiæ Alexandri Magni, Books 3 and 4* [Amsterdam, 1980], 19-73) Columella: *De Re Rustica* 2.13.4. Authors slightly later than Pliny show much the same usage, e.g., Frontinus: *Strategemata* 4.2.1; 4.5.20. Tacitus: *Annales* 11.21, 13.20.

they are accompanied by information which seems to provide a date, Pliny appears to be using them as part of a literary device whereby he may draw a deliberate contrast between different events in the past, those which are distant and those which are not so distant.

For example, 6.23: 'anxia perquisitis cura rebus nuper in eo situ gestis a Domitio Corbulone regibusque inde missis supplicibus aut regum liberis obsidibus'. This is a reference to the Armenian War (58-60 AD) or perhaps to diplomatic exchanges which took place four years previously in 54.¹ But Pliny is also contrasting this recent information about Armenia with that of older writers ('veteres') with whose accounts his new information disagrees in several points.

Or 6.181: 'certe solitudines nuper renuntiavere principi Neroni missi ab eo milites praetoriani cum tribuno ad explorandum, inter reliqua bella et Aethiopicum cogitanti'. This expedition is mentioned by Seneca (*NQ* 6.8.3) and as his Book 6 can be dated to 62-3 because of its reference to an earthquake in Campania (6.1 and 6.27), the expedition must have taken place before that; and Pliny's passage again seems to draw a contrast between knowledge of the Egyptian desert in the time of Nero and that of an earlier period, mentioned by Pliny in the following sentence, when Roman soldiers penetrated the region during Augustus's reign.

Now, the anecdote of 12.9 tells us that Mucianus was able to hold a dinner for eighteen inside a huge plane-tree. The incident happened when he was Governor of Lycia in about 58. Pliny says that Mucianus himself was the source of this information ('prodendum etiam posteris putavit'), so it might be argued that 'nuper' was part of Mucianus's text as opposed to Pliny's. On the other hand, Pliny does contrast this ('nunc est clara in Lycia') with a similar plane-tree used in similar fashion by the Emperor Caligula (12.10), and so it is likely that this 'nuper' is another of Pliny's datable but contrasting usages.

(ii) 94 'Coronas ex cinnamo interrasili auro inclusas primus omnium in templis Capitolii atque Pacis dicavit imperator Vespasianus Augustus'.

The Temple of Peace was begun in 71 and dedicated in January of February 75.² 'Dicavit' clearly suggests that Pliny was thinking of 75.

¹ Tacitus: *Annales* 13.9

² Dio Cassius, 65.15. Josephus: *BJ* 7.158-62. For the months, see Gallivan: *CQ* 31 (1981), 188 and 214. Anderson: *Historical Topography*,

(iii) 111 [On balsam of Mecca] ‘Ostendere arborum hanc urbi imperatores Vespasiani’.

This is almost certainly a reference to the joint triumph of June 71, since Pliny informs us that the only place in which this plant can be found is Judæa (‘uni terrarum Iudææ concessum’), and the one occasion on which the ‘imperatores’ would show it to the City is the triumph.

(iv) 113 [The balsam plant] ‘Sæviere in eam Iudæi sicut in vitam quoque suam; contra defendere Romani et dimicatum pro frutice est’.

The context makes it quite clear that this is a reference to an incident of the Jewish campaign of 68-70 and may be dated, in fact, to 68 which saw the principal assault on Jericho where the richest balsam-groves were to be found.¹ We may take it that the exhibition of balsam at the joint triumph of Vespasian and Titus stemmed from this Roman attack, and in consequence the reference is datable to 70 or 71, probably the latter.

B) Vespasianic: (i) 118

(i) 118 [Of the balsam tree] ‘DCCC HS amputatio ipsa surculusque veniere intra quintum devictæ Iudææ annum’.

I have already suggested (*supra*, p. 124) that this means ‘within five years after the conquest of Judæa’, and therefore dates the reference to 73 or 74, which is not to say, of course, that it was necessarily *written* at that time.

C) Possibly Seventies: none.

101-112. Offerings of cinnamon in both temples do not provide as definite a date as, say, dedications of works of art in one; so there may be a reference here to more than one occasion.

¹ See Josephus: *BJ* 4.451 and 469.

BOOK 13

2 references

A) Specific: (i) 88

- (i) 88 'Mucianus ter cos. prodidit nuper se legisse, cum præsideret Lyciæ, Sarpedonis ab Troia scriptam in quodam templo epistolæ chartam'.

'Ter cos.' refers to 29th May-July/September 72. Once again, 'nuper' is not as easy to understand as one would like. If it is attached to 'prodidit', it will belong to Pliny's text and imply that Mucianus had published his *Mirabilia* not long before. If, on the other hand, (and perhaps more likely) it is part of the Accusative and Infinitive clause after 'prodidit', it probably belongs to Mucianus's text and will therefore mean that he had read Sarpedon's letter 'not long ago' when he was Governor of Lycia in 58.

B) Vespasianic: none.C) Possibly Seventies: (i) 83

- (i) 83 'Tiberi Gaique Gracchorum manus apud Pomponium Secundum vatem civemque clarissimum vidi annos fere post ducentos'.

Tiberius Gracchus died in 133 BC, which would give us a date of 67 AD for the exact two hundred years. Gaius died in 121 BC, and that gives us 79 AD. Pliny's 'fere', of course, means that the two hundred is not intended to be exact. So it is possible that Pliny was writing in the seventies or sixties about documents he had seen much earlier at the house of his good friend, Pomponius.¹ The reference is vague because we have no means of telling exactly when Pliny made this note.

BOOK 14

7 references

A) Specific: (i) 45 (ii) 54

- (i) 45 [Cato's opinion on growing vines is to be treated separately] 'ut in omni genere noscamus quæ fuerint celeberrima anno DC

¹ Speculation about Pomponius Secundus's death has produced dates in the late fifties and late sixties. See Otto, *Philologus* 90 (1935), 490-3 objecting to the late date of Cichorius: *Römische Studien*, 425-6.

urbis . . . cum supremum is diem obiit, et quantum postea
CCXXX annis vita profecerit'.

Cato actually died in 149 BC, but the date 154 which is given here allows us to calculate that '230 years afterwards' produces the year 76 AD as the date of this reference. The manuscripts are in agreement about 'DC', but perhaps I should add a possible caveat. If the original date had been 'DCV', one can envisage that 'V' might easily be lost before the initial 'v' of 'urbis', and arithmetic with 'DCV' gives us 148 as the date of Cato's death—or 149, if we allow for the fact that the foundation year of Rome ran from 21st April 754 to 20th April 753. Should 'DCV' be the correct reading, an exact 76 AD no longer becomes possible. But as 'DCV' is conjectural, without any manuscript justification, I have allowed 'DC' to stand, along with the subsequent calculations dependent upon it.

(ii) 54 'Mucianus ter consul'.

This refers to 29th May-July/September 72.

B) Vespasianic: (i) 18 (ii) 49

(i) 18 [Of a certain type of vine] 'Non pridem hæc inlustrata atque Vergilii
vatis ætate incognita, a cuius obitu xc aguntur anni'.

Vergil died on 21st September 19 BC. Pliny's ninety years later brings the reference to 70 or 71 AD, depending on whether or not one makes allowance for the Roman habit of including the starting-number in the calculation of dates, as opposed to our way of starting with the number next to it in sequence. One must also make allowance for the possibility that, even though the manuscripts are in agreement over 'xc, Pliny may have rounded his figure up (or, indeed, down) to produce a tidy 10 x 9.

(ii) 49 'Maxima [fama] ... Remmio Palæmoni, alias grammatica arte celebri,

in hisce xx annis mercato rus \overline{DC} nummum in eodem
Nomentano decimi lapidis ab urbe deverticulo'.

Palæmon was a grammarian and child molester who was still alive in Claudius's reign.¹ Pliny goes on to mention (51) that Seneca bought the estate after Palæmon had managed it for ten years, so we must presume that Seneca managed it for part of the subsequent ten. As Griffin points

¹ Suetonius: *De Grammaticis*, 23.

out, in connection with *NH* 14.51, 'since Pliny's work was written between 70 and 77,¹ the earliest possible date for Seneca's acquisition of the villa is 61. The latest is 64, for it is mentioned in Seneca's *Ep.* 104 and 110 dated to the autumn of that year. The period 61-2 best suits Columella's quotation of a normal figure for the yield from that estate while Seneca was alive (*RR* 3.3.3).²

Bearing in mind, once again, that 'xx', although assured by all the manuscripts, may represent a round rather than an exact figure, especially in this context—'within the last twenty years' does not sound like an attempt to be absolutely precise—74 will indicate a *terminus post quem non* for Pliny's note.

C) Possibly Seventies: (i) 43 (ii) 55 (iii) 143

(i) 43 'Septem his annis in Narbonensis provinciae Alba Helvia inventa est vitis uno die deflorescens, ob id tutissima; carbonicam vocant, quam nunc tota provincia conserit'.

'Within the last seven years' places the reference in the early seventies if Pliny was writing the *NH* between 76 and 78, as some evidence seems to suggest; or in the late sixties if he began as early as 72.

(ii) 55 'Anno . . . L. Opimio cos., cum C. Gracchus tribunus plebem seditionibus agitans interemptus est . . . natali urbis DCXXXIII: durantque adhuc vina ea CC fere annis'.

The year of Caius Gracchus's death was 121 BC which would give 79 AD as the exact bicentennium. 'Fere', however, makes the number approximate and although a date in the seventies is possible, so also is one in the reign of Nero.

(iii) 143 'Tiberio Claudio principe ante hos annos XL', etc.

The manuscripts are in agreement over 'XL'. A reference to Tiberius's reign 'forty years ago' gives us a date of 77 if we choose as a starting-date Tiberius's final year. But there are twenty-three others to choose from, so the reference is not actually datable with any precision.

1 Or, of course, 78, as I have pointed out *supra*, p. 109.

2 *Seneca*, 289, n. 4.

BOOK 15

1 reference

- A) Specific: none.
- B) Vespasianic: none.
- C) Possibly Seventies: (i) 69

(i) 69 [The African fig] 'De Africanis . . . magna quæstio est, cum id genus in Africam nuperrime transierit'.

It has been suggested that here Pliny is informing us about an Italian fig taken to Africa during Vespasian's principate, an idea whose dating depends upon our knowing what Pliny meant by 'nuperrime'.¹ In Pliny's work, we are told, 'nuperrime is rare; but in two places (NH 14.54 and 19.12, cf., 37.37), it is dated by its context. In both cases *nuperrime* means *Vespasiano principe*.² Clearly we must look again at Pliny's usage to see if this suggestion is plausible.

There are five other examples of the word in the *NH*:

(i) 7.9 'Indicavimus . . . nuperrime trans Alpibus hominem immolari gentium earum more solitum'

Rabenhorst has tried to argue that the whole of Book 7 is little more than a series of plagiarised extracts from Flaccus's *Factorum et Dictorum Memorabilium Libri*, and that this passage in particular does not make sense unless it be dated to the reign of Tiberius.³ One of the principal arguments for this notion seems to be that Book 7's *exempla* do not go further forward in date than the reign of Tiberius, particularly those *exempla* in the latter part of the Book. But it is not difficult to show that this view is mistaken. Note the following references—

- (a) 'Claudius Cæsar scribit . . . nos principatu eius vidimus' (35),
 (b) 'Gaium . . . Domitium Neronem principes' (45),
 (c) 'Neronem . . . toto principatu suo hostem generis humani' (46),
 (d) 'M. Silvanum, qui cum Asiam obtineret post consulatum Neronis principis successione' (58),

1 Naiditch: *Hermes* 105 (1977), 249-51.

2 *Op. cit.*, 251, n. 6.

3 *Der ältere Plinius als Epitomator des Verrius Flaccus*, 118 and 31-2. His arguments were accepted, more or less *in toto*, by Schilling, the editor of the Budé edition of Book 7. See his 'Introduction', xv-xvi.

- (e) 'Divo Claudio principe' (74),
- (f) 'Fonteio et Vipstano coss' (84) = 59 AD,
- (g) 'Tiridatem . . . quem Nero II i $\overline{\text{CXXX}}$ manumisit' (129),
- (h) 'Nuper L. Volusius Saturninus' (156) = died in 56 AD,¹
- (i) 'Claudio principe' (158),
- (j) 'Claudius Cæsar consulatu suo quarto' (159) = 51 AD,
- (k) 'Censum Claudii Cæsaris' (159) = 47-8 AD,
- (l) 'Census quem intra quadriennium imperatores Cæsares Vespasiani pater filiusque censores egerunt' (162) = 73-4 AD.²

Now, unless one is going to argue that all twelve references must be later interpolations, the argument that Book 7 is little more than a plagiarism or epitome of Verrius Flaccus will not hold water. One may also note further that Pliny does not mention Flaccus until (180). Of course, it could be argued that Pliny does not always name his sources even though they are acknowledged in Book 1—Alexander Polyhistor is a prime example—but then one is left to explain why Pliny should have chosen to use Flaccus without acknowledgement until (180) when due acknowledgement does take place. The argument is not a happy one.

Pliny's 'nuperrime', in fact, is probably his own word, rather than a word from whatever source material he had in front of him at the time, and seems to be fulfilling a function of contrast between 'very long ago' and 'very recently'. The Scythian cannibals he has mentioned just before 'indicavimus' and the Cyclopes and Læstrygones just before the Alpine tribes, go back to Herodotus and Homer. So any examples of cannibals or human sacrifice coming from any time within the first century AD could be described as 'nuperrime' in simple contrast.

- (ii) 14.54 'Cum Mucianus ter consul ex iis qui nuperrime prodidere', etc.

On the face of it, this looks as though one might date 'nuperrime' by the reference to Mucianus's third consulship, but one must also bear in

¹ See the Budé note *ad* 7.62.

² Note also a reference to *Aviola consularis* (173). The Budé note goes in for special pleading at this point, arguing that *consularis* must be wrong because it does not appear in Valerius Maximus who used Verrius Flaccus as a source, neither of whom could have known about the honour; and, as Pliny was dependent on Flaccus, he must be referring to *Aviola père* who is not recorded as consul. The argument is unconvincing since it depends on accepting Rabenhorst's proposition and that, as my twelve examples show, is probably mistaken.

mind that Pliny's reference is made by way of contrast with information explicitly derived from Homer, 'Maroneum . . . miscendum Homerus prodidit', and 'Mucianus . . . præsens in eo tractu', etc., (both of them recording a difference in the proportion of wine in water).

(iii) 19.12 'Nuperrime prodidit Mucianus ter cos.'

Again we find a contrast between the very distant and the very recent. A linen breastplate belonging to one of the Kings of Egypt can be seen in the Temple of Minerva on Lindos: Mucianus examined it. What makes this reference especially ambiguous is the relationship between 'nuperrime' and 'prodidit'. As I have pointed out already (*supra* p. 135) in connection with 13.88, if 'nuperrime' belongs to the accompanying Accusative and Infinitive clause, it is part of Mucianus's text. If it goes with 'prodidit', it belongs to Pliny. In the latter case, 'nuperrime' can be dated to the mid-seventies. In the former, it could belong to any time in the fifties or sixties.

(iv) 36.145 'Hæc est sententia eorum qui nuperrime scripsere'.

There is no indication in the section preceding this sentence of who these writers were, and the next section begins with a reference to 'vetustissimi auctores'. So the process of contrast between 'now' and 'then' is what 'nuperrime' illustrates here. No dating is possible.

(v) 37.37 'Xenocrates . . . qui de his nuperrime scripsit, vivitque adhuc'.

The identity of this Xenocrates—*pace* the editorial notes *ad locum* in the Loeb and Budé editions both of which, in any case, are in disagreement—is not at all certain. Nor, unfortunately, is that of the 'Theochrestus' with whose view on amber, according to Pliny, Xenocrates concurred. If the observations about the contrasting function of 'nuperrime' hold good for this example as they did for the previous four, the most one can say is that Theochrestus would have lived considerably earlier than the Vespasianic period.

Now, with these five examples in mind, what can one say about 15.69? Contrast there is, certainly. Pliny has just been mentioning figs which 'ad nos ex aliis transiere gentibus' and then goes on to the so-called 'African', saying that 'id genus in Africam . . . transierit'. But whether he means to imply that the earlier figs came into Italy a long time before Italy

exported this particular brand to Africa is not altogether clear. What we can say, however, is that 'nuperrime' does not date the transition as unmistakably as Naiditch would like. Six examples of Pliny's usage, including the one under discussion, are too few to create reliable dating information. Moreover, the examples themselves largely fail to bear out what Naiditch is suggesting. Neither 7.9 nor 36.145 can be dated accurately; 14.54, despite its reference to Mucianus's third consulship, simply includes him with other 'recent' writers who are contrasted with the very ancient writer, Homer. 19.12 may belong to the seventies but could equally well belong to an earlier decade; and 37.37 is ambiguous in a way similar to 14.54. In consequence, 15.69 turns out to be more or less undatable after all.

BOOK 16

4 references

A) Specific: (i) 213

(i) 213 'Mucianus III cos.'

This refers to 29th May-July/September 72.

B) Vespasianic: none.C) Possibly Seventies: (i) 215 (ii) 216 (iii) 235

(i) 215 [In the Temple of Diana at Ephesos] 'valvas esse e cupresso et iam

C'CCC prope annis durare materiem omnem novæ similem'.

This information comes from Mucianus whom Pliny describes as 'III cos. ex iis qui proxime viso scripsere' (213).¹ It clearly refers to the second Artemision begun in 334 and not completed until 250 BC; and if one cares to do some simple arithmetic, four hundred years after 334 gives one the date 66 AD. However, the doors would not be hung until much later than 334, although how much later—and what Pliny means by

¹ This 'proxime' is used more or less in the same way as 'nuperrime' in 7.9, 14.54 and 19.12. In other words, Mucianus is last in a long line of travel-writers who have recorded their impressions of the Artemision. Cf., 6.96, 7.33 and 28.19. This is not to say that *proxime* cannot give some notion of a date; 6.40, for example, certainly refers to 58-60 AD, and 31.62 to about 55 AD. But it frequently performs the same sort of contrast as *nuperrime* and therefore cannot always be taken purely as a dating adverb.

'prope'—is open to considerable guesswork. In other words, the reference from Mucianus really cannot be dated with accuracy.¹

- (ii) 216 'Memorable et Uticæ templum Apollinis, ubi cedro Numidica trabes durant, ita ut positæ fuere prima urbis eius origine, annis MCLXXVIII'.

The manuscripts are thoroughly confused over the number of years which are given as follows:

Book 16. 216: Manuscript variants

<u>Manuscript reading</u>	<u>Source</u>	<u>Manuscript reading</u>	<u>Source</u>
(i) MCLXXVIII ²	<i>d</i>	(ii) MCLXXXIX	<i>T</i>
(iii) CLXXXVIII	<i>D</i> ²	(iv) CXCLXXVIII	<i>D</i> ¹ <i>E</i>
(v) CXCLXXVIII	<i>e</i>		

Figure 9

Four of these, *i*, *iii*, *iv*, and *v* look like fairly close variants of each other, and *ii* can be explained as a careless rendering of *iv*, as well. We may be able to take it, therefore, that 1178 is a reasonable approximation of the figure Pliny intended. The fact, however, that 1178 is not a firm figure must not be laid aside in subsequent calculations.

Pseudo-Aristotle tells us that Utica was founded by Phœnicians 287 years before Carthage; and the historian Timæus of Sicily, that Carthage and Rome were both founded in the thirty-eighth year before the First Olympiad.³ Since the First Olympiad is shakily dated to 776 BC,⁴ Timæus's calculation produces 814 as the foundation-date for Carthage, and if we add pseudo-Aristotle's 287 years to 814, we arrive at 1101 as the supposed

1 Charles Texier suggested that Mucianus was there in 75, but gives no reason for saying so: *Asie Mineure* (Paris, 1882), 319.

2 The Budé apparatus gives 'MCLXXXVIII', which may be a misprint, as one 'X' is lost in the text, as it is in the Teubner, König-Winkler and Loeb editions.

3 Pseudo-Aristote: *De mirabilibus auscultationibus* 134. Timæus, in *FGH* 3B.566, fr. 60 = Dionysius of Halicarnassus 1.74.

4 See Bickermann: *Chronology of the Ancient World*, 75 and the literature cited in his note 62.

foundation-date for Utica. Subtracting 1101 from Pliny's 1178 gives us 77AD and hence QED, a date for Pliny's passage.

That this line of reasoning is unsound should be obvious, and yet it was followed by André, the Budé editor of Book 16, with a startling inference. He begins his 'Introduction' (p. 7) by saying, 'La rédaction du Livre XVI peut être datée de 77 après J.-C., grâce au paragraphe 216', and then follows it with his note *ad locum* in which the qualifying 'peut être' is omitted. 'La date de la fondation d'Utique concorde avec celle, donnée par le Ps. Aristote, *De mir. ausc.*, 134, de 287 ans avant celle de Carthage, soit en 1101 a. C. Le livre 16 a donc été rédigé en 77 p. C.' But this, of course, one is quite unable to say. First, Pliny's figure of 1178 is uncertain; secondly, pseudo-Aristotle gives no indication of his source for the figure he uses; thirdly, nor does Timæus of Sicily, and indeed his date for the foundation of Rome is quite at odds with the traditional date apparently accepted by Pliny, as we can see from elsewhere in the *NH*; fourthly, not even the traditional date of the First Olympiad is as firm as it might be. But fifthly, and perhaps most important, it is one thing to date a single reference, and another to use the single piece of evidence to date a whole Book. There is no warrant for doing so in this instance, and in consequence I think we must regard André's conclusion as a *non sequitur*. We must also decline to date (216) with any precision.

(iii) 235 'Romæ vero lotos in Lucinæ area, anno qui fuit sine magistratibus CCCLXXIX urbis æde condita; incertum ipsa quanto vetustior; esse quidem vetustiore non est dubium, cum ab eo luco Lucina nominetur. Hæc nunc D circiter annum habet'.

Once again, the manuscripts offer variants upon the first number:

Book 16. 235: Manuscript variants

<u>Manuscript reading</u>	<u>Source</u>
(i) CCCLXIX	DEeL
(ii) CCCCLXIX	dT

Figure 10

We have more than one piece of information about 'the year without magistrates'. One comes from Livy: 'Licinius Sextiusque tribuni plebis refecti nullos curules magistratus creari passi sunt; eaque solitudo

magistratum . . . per quinquennium urbem tenuit', (6.35.10). Editors are not agreed when these five years fell. The Budé edition of Livy puts them between 377 and 372, the Loeb between 375 and 371. A second piece of information comes from Zonaras's epitome of Dio Cassius: καὶ τὸν κόσμον τῆς πολιτείας συνέχεον, ὡς καὶ ἐπὶ τέσσαρσιν ἔτεσιν ἀναρχίαν γενέσθαι τῷ δήμῳ, (*Epitome* 7.24). Diodorus Siculus (15.75.1) and Plutarch (*Camillus* 39.1) also mention the problem, but do not indicate clearly whether it lasted for one year or several. Pliny, on the other hand, specifically refers to a single year during which no curule magistrates were elected.

Without figures from other sources, we have to make do with Pliny's 379 or 479. It is actually quite simple to decide which of the two is correct: 379 years after Varro's traditional date for the foundation of Rome (753) gives us 375/4 as the year (or perhaps the first year) without magistrates; and 479 gives 275/4, too late to agree with the Livian or Cassian contexts. So 379 is obviously the correct reading.

But a date of 375/4 BC does not help us to come anywhere near dating Pliny's reference. Apart from the fact that other sources make it possible that his 'anno' could be any one of four or five, a subtraction of 275/4 from 500 gives 125/6 AD, leaving us with a margin of 49 or 50 years—even if we suppose the passage was produced in 77, as André would like¹—by which the tree could be older than Lucina's temple itself. The lotus can, apparently, live for between five and six hundred years; but we are not entitled on that account to assume that Pliny must have written his note in 77 and added fifty years to make the five hundred age complete.² Again, in spite of hopes to the contrary, no precise date can be assigned to this passage.

BOOKS 17 and 18

0 references

A) Specific: none.

B) Vespasianic: none.

C) Possibly Seventies: none.

1 'Comme le livre 16 a été rédigé en 77 p. C.'. note *ad locum*.

2 Which is, in fact, what André does in his note.

It is worth remarking, however, that 18.209 shows that Pliny was writing Book 18 later than the Spring of whatever year it was.

Sunt qui certissimum veris indicium arbitrentur, ob infirmitatem animalis, papiliones; sed eo ipso anno cum commentaremur hæc, notatum est, proventum eorum ter repetito frigore extinctum, advenasque volucres a. d. VI Kal. Febr. spem veris adtulisse mox sævissima hieme conflictatas.

BOOK 19

6 references

A) Specific: (i) 11 (ii) 12 (iii) 32

(i) 11 'Sicut paulo ante Iulio Lupo qui in præfectura Ægypti obiit'.

(an Fulvio Lupo? *cfr. Willmanns ex. inscr. Lat. nr 2198*)

Lupus was Prefect in Egypt in 71/2 and died soon after destroying the Jewish Temple in Alexandria-Leontopolis on the orders of Vespasian. His death seems to have taken place in February 73.¹

(ii) 12 'Quod se expertum nuperrime prodidit Mucianus ter cos.'

'Ter cos.' refers to 29th May-July/September 72. I have already commented on the problem posed by 'nuperrime' in this passage, (*supra*, p. 138).

(iii) 32 'Theophrastus . . . persecutus CCCXC annis ante nos',

Most manuscripts give CCCCXC, but this is clearly a mistake and was rectified by Hardouin. In 13.101, Pliny tells us that Theophrastus 'proximus a Magni Alexandri ætate scripsit circa urbis Romæ CCCCXXXX'. A traditional foundation-date of 754/3 will give 314 BC for Theophrastus's *Historia Plantarum*, and this in turn gives 76 AD as the year '390 years' later. Now, it is true that there are other dates suggested for the foundation of Rome, but none makes sense in this passage. For example, 751 produces 79 AD—not impossible if one posits revision by Pliny up to the moment of his death, but not consistent with other indications that he accepted 754/3 as the foundation-date. Compare the clear evidence of 14.55. Another possible year, 748, gives one a date after Pliny's death, and so is obviously out of the question.

¹ Josephus: BJ 7.434. *Jewish Encyclopædia* sv. 'Leontopolis.' PIR² I 390.

B) Vespasianic: (i) 3

- (i) 3 'Quodve miraculum maius, herbam esse quæ admoveat Ægyptum Italiae in tantum ut Galerius a freto Siciliae Alexandriam septimo die pervenerit, Balbillus sexto, ambo praefecti, aestate vero post XV annos Valerius Marianus ex praetoriis senatoribus a Puteolis nono die lenissimo flatu?'

Balbillus was Prefect of Egypt between 55 and 59, so this dates the reference 'fifteen years later' to 70-74. Pliny is talking here about a speed of something like 4.5 knots, obtainable when wind conditions were in the ship's favour. Figures which we have for other voyages show that his information is not exaggerated.¹

C) Possibly Seventies: (i) 4 (ii) 35

- (i) 4 [Africa is two days' sailing time from Ostia] 'Quod etiam mollissimo flatu contigit C. Flavio legato Vibii Crispi procos.'

There is disagreement about the date of Vibius Crispus's proconsulship. Vogel-Weidemann is the latest to argue for 71/2: Syme puts it in 72/3, arguing that he held the post just before returning to Rome to be consul for the second time in March 74.² Bosworth, however, disagrees with both schools of thought and suggests that the proconsulship is more likely to have been held much earlier, in Nero's reign. His arguments are (a) that Pliny's note *ad* 19.4 gives no indication of date and his comparable examples of fast voyages go back as far as the reign of Tiberius; (b) Crispus was a very old man in the seventies, either sixty or, if we are to believe Juvenal (4.92-3), seventy; (c) Crispus was *curator aquarum* at Rome from 68 to 71, Saturninus was proconsul in Africa from 72-3, and Crispus was back in Rome to be consul again in March 74. In consequence, there is no time in the seventies for him to hold an African

¹ See Casson: *Ships and Seamanship*, 282-8. André, the Budé editor of Book 19, dates Mucianus's voyage to 76, on the grounds that Book 19 was produced in 77. See his note *ad locum*. This suggestion, however, seems to be based on his note on 16.216, which, as we have remarked already, cannot be given the specific date which André attributes to it.

² Vogel-Weidemann, *Acta Classica* 18 (1975), 149-53. Syme *RP* 2.755. Thomasson: *Laterculi Praesidium* 1.377 (n^o 47) hedges: 'extremis Neronis vel potius primis Vespasiani annis'.

post.¹ For these reasons, which I find convincing, I have classified Pliny's reference under Possibly Seventies for the purposes of dating.

(ii) 35 'Larcio Licino prætorio viro iura reddenti in Hispania Carthagine paucis his annis scimus accidisse mordenti tuber ut deprehensus intus denarius primos dentes inflecteret'.

According to Syme, this event can be dated to 73/74. His argument runs as follows: (a) Pliny was procurator in Spain and while there was offered a huge sum of money by Licinus for his *commentarii*; (b) Vespasian's census of Spain is datable to 73-74, and Pliny gives very detailed census figures for each of the three *conventus* of the north-west.² Bosworth, however, counters by pointing out that Pliny may not have got his figures from the Vespasianic census. The alternative is the much earlier *Commentarii* of Marcus Agrippa who supplied Pliny with a good deal of material about Spain.³

As for the link between Licinus and Pliny in Spain, Pliny's nephew who tells us the story of the offer (*Ep.* 3.5.17) does not say they were in office at the same time, merely that it was while his uncle was procurator that Licinus approached him. The natural inference is that they were fellow officials, but that is not enough for dating purposes.⁴

BOOKS 20 to 27 inclusive contain no dating material.

BOOK 28

2 references

A) Specific: (i) 12 (ii) 29

(i) 12 [On prayer] 'Si quis legat, profecto vim carminum fateatur, ea omnia adprobantibus DCCCXXX annorum eventibus'.

¹ *Athenæum* 51 (1973), 70-1, 65. Thomasson: *op. cit., supra*, n^o 48.

² *RP* 2.755-6. Watkins is not so sure. 'Pliny describes a slightly earlier contemporary, Larcus Licinus in Hispania Citerior in 69-70 or 73-74, as *prætorius vir iura reddens*, as though the term *legatus iuridicus* was not yet established', *CJ* 84 (1988-9), 128.

³ *Athenæum* 51 (1973), 76-7.

⁴ Alföldy, the most complete authority on these posts in Spain, dates Licinus to 70. See *Fasti*, 71.

The manuscripts are in agreement about the number. If one takes Pliny's usual AUC date (753) from the 830 here mentioned, one gets 77 AD as the date of the reference.

(ii) 29 'Mucianus ter consul'.

This refers to 29th May-July/September 72.

B) Vespasianic: none.

C) Possibly Seventies: none.

BOOKS 29 and 30 contain no dating material.

BOOK 31

1 reference

A) Specific: none.

B) Vespasianic: none.

C) Possibly Seventies: (i) 24

(i) 24 'Dirum est non profluere eos aspicere volentibus, sicut proxime
Larcio Licino legato [pro praetore] post septem dies accidit'.

As the date of Licinus's time in Spain cannot be dated with certainty, this passage must be assigned to Possibly Seventies.

BOOK 32

1 reference

A) Specific: none.

B) Vespasianic: none.

C) Possibly Seventies: (i) 62

(i) 62 [On countries which produce oysters] 'Dicemus aliena lingua
quæque peritissima huius censuræ in nostro ævo fuit. Sunt
ergo Muciani verba quæ subiciam', etc.

Pliny's prefatory letter to Titus greets him as 'sexies consul', thus enabling us to date the *Preface* to some time between c. February 77 and the end of 78. 'Fuit' in the passage above implies that Mucianus was dead by the time Pliny wrote Book 32, so it follows that Mucianus died before c. February 77. According to a reference in Tacitus's *Dialogus* (cap. 37), Mucianus was still alive at the time in which the dialogue was set. This is generally agreed to have been 74 or 75.¹ Therefore it is possible to suggest that Mucianus may have died at some time between 74/5 and early 77.

C) Possibly Seventies: none.

BOOK 33

1 reference

A) Specific: none.

B) Vespasianic: (i) 41

(i) 41 [Privilege of access to the Emperor] 'quæ omnia salutaris exortus Vespasiani imperatoris abolevit æqualiter publicando principem'.

No precise date for this is possible, but Vespasian is likely to have taken this step right from the start of his reign.² Pliny has been discussing the privilege, granted to some by Claudius, of wearing a golden likeness of the Emperor on a ring and so having the right to speak to him. This was clearly a practice most relevant to the Emperor in Rome more than in camp, so as Vespasian did not reach Rome until the autumn of 70, we may perhaps assign his action to this or the next year, rather than to 69 or the later seventies.

C) Possibly Seventies: none.

¹ See Gudeman's edition (1894), xxiii-xxv. Syme: *Tacitus* (Appendix 28), 670-1.

² Cf., Dio Cassius: τό τε σύμπαν τῆ μὲν προνοίᾳ τῶν κοινῶν αὐτοκράτωρ ἐνομιζέτο, ἐς δὲ δὴ τ' ἄλλα πάντα κοινὸς καὶ ἰσοδιατὸς σφισιν ἦν, 65.11.1. Suetonius: *Vespasian* 12, and the anecdote about Helvidius Priscus: *Ibid.* 15.

BOOK 34

5 references

A) Specific: (i) 36 (ii) 45 (iii) 84

(i) 36 'Mucianus ter cos.'

This refers to 29th May-July/September 72.

(ii) 45 [The Colossus of Nero] 'qui dicatus Soli venerationi est'.

Dio Cassius tells us that this happened in the sixth consulship of Vespasian and the fourth of Titus, (65.15.1). Both entered their respective consulships in January 75 and seem to have held them until February the same year.¹

(iii) 84 'Ex omnibus, quæ rettuli clarissima quæque in urbe iam sunt dicata a Vespasiano principe in templo Pacis aliisque eius operibus'.

Vespasian dedicated the Temple of Peace in January or February 75,² and one presumes that the works of art to which Pliny has been referring were dedicated at the same time. Ten other examples of 'dicare' in Pliny show that he tends to use it of dedicating objects (12.3; 34.14; 34.16; 35.102; 36.27; 36.58; 37.27; 37.178) rather than whole buildings (7.97; 7.123). In 34.84, too, it is works of art which are the subject of the verb. Nevertheless, when Pliny refers to such things in the Temple of Peace in 36.27 and 36.58, he tells us that it was Vespasian who dedicated them, and one must ask whether Vespasian is more likely to have conducted several dedication ceremonies—one for the temple itself, another for the statue of Venus, another for the large specimen of 'basanites'—or whether, like a modern Head of State, he performed a single official opening ceremony for a building already complete with its various works of art and curiosities in place. Assuming the latter to be more probable, I have assigned the specific date of early 75 to this reference and to the other passages involving *Templum Pacis*.

B) Vespasianic: (i) 38 (ii) 55

(i) 38 [The Capitol] 'novissime conflagraret a Vitellianis incensum'.

1 See Gallivan: CQ 31 (1981), 188 and 214.

2 Gallivan: *loc. cit. supra*.

This incident happened in December 69 so one must infer that Pliny's reference belongs to the seventies.

(ii) 55 [A statue] '*Astragalizontes . . . sunt in Titi imperatoris atrio*'.

Titus was first hailed as *imperator* by his troops in Jerusalem in August 70. The reference is thus datable to some time thereafter.

C) Possibly Seventies: none.

BOOK 35

6 references

A) Specific: (i) 74 (ii) 102 (iii) 109 (iv) 164

(i) 74 [Timanthes] '*pinxit et heroa absolutissimi operis . . . quod opus nunc Romæ in templo Pacis est*'.

In view of the dedication of the Temple at the beginning of 75, one has a specific date *ante quem non*, even though one must bear in mind that Pliny could have made the note at any time thereafter up to the end of 78.

(ii) 102 [Protogenes] '*Palnam habet tabularum eius Ialysus, qui est Romæ dicatus in templo Pacis*'.

One conjectures the beginning of 75 for this, also, especially in view of 'dicatus' which suggests that the picture was in position and thus part of the completed temple at the time of the dedication ceremony. See note on 34.84 *supra*.

(iii) 109 [Nicomachus] '*Pinxit . . . Scyllam quæ nunc est Romæ in templo Pacis*'.

Again, as for 35.74, one conjectures 75 as a date *ante quem non*.

(iv) 164 '*Mucianus altero consulatu suo*'.

Mucianus was consul for the second time in 70, perhaps in July and August of that year.¹

B) Vespasianic: (i) 120 (ii) 163

¹ Gallivan: *loc. cit. supra*, 187 and note 9; 213. Syme: *RP* 1.387.

- (i) 120 'Fuere . . . Cornelius Pinus et Attius Priscus, qui Honoris Virtutis ædes Imperatori Vespasiano Augusto restituenti pinxerunt'.

Although fragments of the two painters' sepulchral inscriptions exist there is, unfortunately, no date or datable evidence attached.¹ Pliny's 'fuere' implies that both men were dead by the time he wrote. Nor do we have an exact date for Vespasian's restoration of the temple, but it is clear from Dio Cassius (65.10.1) that such work was not begun before the Emperor's return to Rome in August/September 70.

- (ii) 163 'At, Hercules, Vitellius in principata suo [X] HS condidit patinam', etc.

As Vitellius died on 20th December 69, and Pliny's note refers to his principate as a past event—and refers to it, moreover in terms which are critical of the Emperor's extravagance—we must infer that this passage was written at some time in the seventies.

C) Possibly Seventies: none.

BOOK 36

5 references

A) Specific: (i) 27 (ii) 58 (iii) 102

- (i) 27 'Ignoratur artifex eius quoque Veneris quam Vespasianus imperator in operibus Pacis suæ dicavit'.

'Dicavit' presumably refers to the dedication of the whole Temple in January/February 75.

- (ii) 58 [Of the stone *basanites*] 'Numquam hic maior repertus est quam in templo Pacis ab imperatore Vespasiano Augusto dicatus'.

'Dicatus', again, gives us a date *ante quem non* of January/February 75.

- (iii) 102 'Templum Pacis Vespasiani Imp. Aug.'

As in the previous examples.

B) Vespasianic: (i) 37 (ii) 106

¹ CIL 6.12745 and 16239.

(i) 37 'Sicut in Laocoönte, qui est in Titi imperatoris domo'.

As I said with reference to 34.55 *supra*, Titus was first hailed as *imperator* in August 70, so this passage also is datable to the seventies.

(ii) 106 [Cloaca Maxima and its branches] 'Durant tamen a Tarquinio Prisco annis DCC prope inexpugnabiles'.

'DCC' is the reading agreed by the manuscripts. The traditional dates of Priscus's reign are 616-597 BC. An addition of 77 or 78 to the former gives 693/4 which is a fair approximation to Pliny's 700 years. So round a figure as 700, however, leaves one with the suspicion that Pliny may not have intended it to be taken literally, and so all one can say of this passage is that it is datable to the seventies.

C) Possibly Seventies: none.

BOOK 37

0 references

A) Specific: none.

B) Vespasianic: none.

C) Possibly Seventies: none.

Addenda

Two brief points are worth noting here before I comment on this dating material and draw conclusions from it.

(a) I have avoided using *argumenta e silentio*, on the grounds that they are bound to be unsatisfactory. For example, we have evidence for a 'Flaviopolis' in Western Cilicia, which may be datable to 74 AD.¹ Now, in his review of the region (5.91-3), Pliny makes no mention of any such place, even though he does draw attention to two changes of name, 'Soloe Cilicii nunc Pompeiopolis' (92) and 'Anazarbeni qui nunc Cæsarea' (93). Are we, then, to understand that Pliny must have been writing this passage before 74; or do we merely assume that, as his source would

¹ Ruge in *PW* 6.2516.

probably not have known such a 'Flaviopolis', Pliny did not know it either?¹

(b) I have omitted the large number of personal observations made by Pliny, on the grounds that they are undatable to any period more exact than his own life-time. Syme gives several of these in his discussion of Pliny's possible African procuratorship, but concedes that none of them actually helps him in his attempt to date a term of office.²

Comments

Arrangement of these dates in diagrammatic form reveals two fairly straightforward facts. Figure 11 which includes all dates—Specific, Vespasianic, and Possibly Seventies—shows that there are too many references to the seventies to leave room for any doubt that Pliny did indeed compose the *NH* during Vespasian's reign. But Figure 12 which contains only the Specific dates, shows that narrowing the range of dates for composition is much more difficult. There are two predominant dates, 72 and 75, but one must bear in mind that each is caused by repetition of a

1 Cf., 5.95, 'in confinio Galatiæ atque Cappadociæ'. In the autumn of 72 Cappadocia was joined with Galatia, and Cilicia Campestris with Cilicia Trachea. (See Gwatkin: *University of Missouri Studies* 5 [1930] 61-2). Does Pliny's note imply that Galatia and Cappadocia had not yet been united for the purposes of administration; and do we therefore infer that he was writing before 72? Cf., 6.8, 'Neocæsarea', Pliny is the first to mention it. Or 6.9, 'Mazacus nunc Cæsarea nominatur'. Pliny is the first to call it this. Are we therefore entitled to assume that we can date these references to the seventies?

2 *RP* 2.754. See also my Appendix 7. It is also difficult to know what inferences one is permitted to draw from Pliny's possible but unacknowledged use of known published, but now no longer extant, material. For example, Vespasian and Titus produced a commentary on their Jewish campaign, which was probably published at some time between 75 and 79. See Lewis, *ANRW* II.34.1 (p. 641). Is Pliny's lack of acknowledgement, surprising perhaps in a highly-placed Flavian client, an indication that it had not appeared until after the completion of the *NH*? Or are passages on the Dead Sea derived from that work, as Lewis thinks (p. 645)? Does Pliny's acknowledgement of Titus as one of his sources for Book 2 relate entirely to the passage on a comet (89), or does it include information about Lake Asphaltitis (226)? But if the latter be so why does Pliny fail to acknowledge Titus for similar information in Books 5 and 7 (5.71-73; 7.65)? Or, indeed, why would he declare himself indebted to Titus and not to Vespasian? Problems such as these vitiate one's attempts to date much Plinian material.

single reference: 72 always represents a reference to the third consulship of Mucianus, and 75 always seems to refer to Vespasian's dedication of the Temple of Peace. What we must deduce, therefore—at least initially—is that 72 appears frequently because Pliny was using Mucianus as a source at that point, and 75 because Pliny was discussing works of art and the official opening of the Temple of Peace enabled him to see, or refer to, several works of art contained therein.

Figure 11: All datable references

Book	Year									
	70	71	72	73	74	75	76	77	78	
1	V									
2	V	S	S		P		S			
3		[V/	/V]S	S[V/	/V]					
4	V ²									
5	SVP	S			V					
6	[P?]									
7	V							S		
8			S							
9										
10	V									
11										
12		S ²	S	V/	/V	S				
13	P		S							
14	P ² V/	/V	S			V	S			
15	[P?]									
16	P ² [P?]		S							
17-18										
19	V[P?]		S	S	V		S			
20-27										
28			S					S		
29	[P?]									
30										
31	[P?]									
32					V			V		
33	V									
34	V ²		S			S ²				
35	V ² S					S ³				
36	V					S ³		V	V	
37										
Pref.								S		

S = Specific dates V = Vespasianic dates P = Possibly Seventies dates

Superscript numerals represent (also, in Figure 12 below) the number of times a date occurs, e.g., V² = V (twice). The symbol '/' represents that the references is datable to two years, e.g., V/ in one year followed by /V the next year places the date within either. A bracketed date, e.g., [V], implies that there is some question about the certainty of the date.

So here are two points for discussion: (a) the significance of 72 and 75, and (b) the implications of five late dates in early Books 2-19 especially, perhaps, Book 2.

(a) 72. Bardon, reviving a suggestion made by Klotz in 1906, suggested that Mucianus wrote and published after his retirement in 72, and that in consequence his *Mirabilia* can be dated to 73 or later.¹ If this were true, it might help to explain Pliny's frequent use of Mucianus as a source, but the suggestion appears to rest on the fallacious assumption that a busy politician needs leisure to engage in academic work, an assumption contradicted by Pliny's career, for one, not to mention Cicero or Dio Cassius. So it is unnecessary to imagine either that Mucianus *must* have waited for retirement before writing—and that he retired from active politics in 72 is, itself, an assumption—or that Pliny's acquaintance with his work *must* have depended on its being published after 72. What is significant about 72 is that Mucianus was then awarded the unusual distinction of being consul for the third time, an honour which Pliny notes and records as early as Book 2.

There is no pattern to the appearance of 'ter cos.' in the *NH*. Pliny uses Mucianus thirty-two times and refers to the consulship on only eleven of them. Otherwise he calls Mucianus 'Mucianus' *tout court*.² The eleven occasions are spread over the whole work: Books 2, 3, 8, 12, 13, 14, 16, 19, 28, 32, 34. So we cannot say that Mucianus had not yet attained the honour during one stage of Pliny's composition, and had done so at

1 *La littérature latine inconnue* 2.181-2.

2 Cf., the acknowledgements of Mucianus in Book 1. For Books 2, 8-13, 16, 19, 31, 33, 35, and 36 he is called 'Mucianus'. For Books 3-7, he is 'Licinius Mucianus'.

another. Moreover, in Book 8 he appears both as 'Mucianus' and as 'Mucianus ter consul'. Nor can we suggest that Pliny was using two different books which Mucianus had written at different stages in his career. The subject-matter is more or less of a piece—geographical information with occasional emphasis on the bizarre and extraordinary—and herein, I think, lies the explanation of the frequent appearance of 72 in Books 2-19 of the *NH*. The relationship between the subject-matter of the *NH* and Pliny's use of Mucianus can best be seen as follows:

Relationship between references to Mucianus and the subject-matter of *NH*

<i>NH</i> Subject-Matter	Books	<i>Mucianus ter cos.</i>	<i>Mucianus</i>
Cosmology	2	1	0
Terrestrial geography	3-6	1	6
Man	7	0	2
Other animals	8-11	1	8
Botany	12-19	5	0
Botany in medicine	20-27	0	1
Zoology in medicine	28-32	1	3
Metals and stones	33-37	<u>1</u>	<u>2</u>
Total:		10	22

Figure 13

Quite simply, the majority of these references (24/32) come in Books where geographical or anthropological data are most appropriate, and in consequence 72 loses much of its apparent significance as a guide to when Pliny began to compose the *NH*.¹

¹ This conclusion means that one must refrain from pressing the different ways in which Pliny refers to Mucianus to elicit conjectural information. The Budé note on 28.29, for example, suggests that there were two *Muciani*, one the consul, the other someone else. Apart from the fact that this would require two men of the same name to have written two books on very similar subjects, one must point out again that Pliny does not exhibit any consistency about his use of 'Mucianus ter cos.' and plain 'Mucianus'. Indeed, he also refers to a 'Licinius Mucianus' in Book 1 and again in 5.83; 7.36; 9.68; 12.9. Are we to follow Budé logic and assume that there were three people called 'Mucianus'? Cf., Pliny's reference to 'Xenocrates' and 'Metrodorus', where there are undoubtedly two men of the same name, but often no means of telling them apart in Pliny's text. Thus, 37.25 = *Xenocrates Ephesius* and 37.37 = *Xenocrates* (of

A similar explanation can be offered for the large number of blanks in Figures 11 and 12. Nearly half the Books of the *NH* contain no material datable to the seventies: 6, 9-11, 17, 18, 20-27, 29, 30, 37. This is more likely to be a matter of chance than of anything else. The largest gap, for example, Books 20-27, consists of Books which deal with botany and medicine derived from plants, and Pliny's choice of illustrative material contains nothing by way of assistance to any attempt at dating.

As for 75, I have already made a similar point. Apart from 12.94, the eight references to that year occur in Books 34-36, those dealing with works of art. Vespasian's dedication of the Temple of Peace early in 75 clearly made an impression on Pliny, and we may conjecture that this occasion enabled him to see examples of certain works of art which had hitherto perhaps not been available, or had not been of any special interest until the official opening of the temple drew people's attention to them.¹

(b) The late dates in the early Books: (i) 2.89, Titus's poem on the comet, composed in 'quinto consulatu suo' = 76. There are three ways in which one can attempt to explain this date. First, it represents an addition to the text made as part of a revision of the *NH*, or added in the margin when the information became available. Secondly, although our text uses the word 'quinto', the number may have appeared earlier as a 'v', a scribal error for 'ii', or simply 'ii' written badly. Titus's second consulship was held between January and April 72, so if one wanted a relatively early date in the seventies for Book 2 which is actually the opening Book of the *NH*, such a speculation would provide it. Thirdly, in spite of the fact that Pliny's references to the comet and Titus's poem about the comet are uncorroborated by anyone else, it is likely that 76 is a firm date, and one

Aphrodisias). Only one *Xenocrates* is cited for Book 37 in the bibliography of Book 1, and there he is recorded as *Xenocrates Zenonis*. So Pliny cannot be relied on to remain consistent in his citation of authorities; and if there were indeed two *Muciani*, there is no hope of proving it or even of showing that it is likely. My point about the context in which the name appears, however, renders much of this type of speculation unnecessary.

¹ 34.45 is not directly connected with the Temple of Peace, as it refers only to the dedication of Nero's Colossus to the Sun. Dio Cassius (65.15.1), however, implies that it was newly erected on the same occasion. Many works of art dedicated by Vespasian in the Temple of Peace had been looted from abroad by Nero and kept in the private rooms ('in sellariis') of the *Domus Aurea*. This might help to explain why they had not been seen by the public for several years, or indeed at all, until the official opening of the temple.

must therefore allow the possibility that Pliny did not begin composing the *NH* until that year.

(ii) 7.162, the censorship of Vespasian and Titus, which took place 'intra quadriennium' = 76 or 77. I have already argued (*supra*, pp. 123-4) that this phrase means 'within the last four years', so the date appears to be firm. April 76 represents an exact four years after the beginning of the censorship, and April 77 an exact four years after the end. There are two possible explanations. First, the reference is a later insertion: secondly, its date agrees with a late start to the *NH*, and helps to confirm it.

(iii) 12.94, Vespasian dedicated crowns of cinnamon in the Temples of the Capitol and of Peace = 75. I have dated this reference on the strength of the verb 'dicavit', but Pliny could, of course, be referring to an occasion *after* the official opening of the Temple of Peace, in which case we must be prepared to accept that the date could actually be later than 75. The explanations for its appearance in Book 12 are the same as those above in (ii).¹

(iv) 14.45, Two hundred and thirty years after 154 BC = 76 AD. It is possible that this was added to the text later, but it reads as though it were a remark integrated into its context, not an after-thought or a *marginale*. In consequence, its appearance in the text is difficult to explain satisfactorily, other than by the simplest and most obvious conclusion that the passage was actually written in 76 and therefore so was the whole section of Book 14 which contains it, i.e., 44-47.

(v) 19.32, Theophrastus's *Historia Plantarum*, written 'CCCXC ante nos' = 76. Given that Theophrastus published his lectures in 314 BC, arithmetic produces 76 AD as the date 390 years later, but 'CCCXC ante nos' depends on an emendation by Hardouin, and also upon our taking 390 as a completely accurate figure wherewith to produce 76 AD. As the manuscripts stand, with 'CCCCXC', they are clearly wrong. But what if the original mistake lay, not in adding an extra unnecessary 'C' at the beginning, but writing 'XC' instead of 'XL' at the end? There are two reasons for thinking this may have happened. In 13.101, Pliny says that Theophrastus wrote 'circa urbis Romæ annum CCCCXXXX', and in 15.1, 'Theophrastus . . . urbis Romæ anno circiter CCCCXL'. It is possible that in

¹ 12.118, dated 73/74 needs no special comment here. If Pliny began the *NH* in 72, it is no further advanced than one would expect by the time he reached Book 12, and if he began the *NH* in 76, it does not count as a late date, anyway.

19.32 Pliny is merely repeating that information. We know that he accepted our 753 BC as the foundation-date of Rome. 440 years later gives a date of 313, near enough 314 to make no difference, especially in the light of 'circa' and 'circiter'. 'Nos' in 19.32 can as well mean 'Rome' as 'us' or 'our day', and if this conjecture is right, it means that 19.32 would cease to provide an anomalous date in Pliny's text.

We have, then, a remarkably small number of late dates in the early Books. All five can be explained as additions to the text, and it may be worth noting in this connection that three refer to Vespasian and/or Titus. Are these flattering *marginalia* intended to add a small touch of gilt to the presentation text offered to Titus? It seems unlikely. They are not so long, nor so prominent, that Titus could pick them out immediately. It is more probable that they are simply pieces of information which came to Pliny after he completed that part of the text,¹ always supposing, of course, that we accept 72 as the initial year of composition. Against that are three firm dates, 7.162, 14.45, and 12.94, which might indicate that Pliny did not begin the *NH* until 76 at the earliest. Even if 2.89 and 19.32 can be explained away as dubious, these three pose a difficulty, albeit a small one, for the argument that 72 should be the starting date.

One more piece of dating-evidence needs comment, and that is the note 'editus post mortem' which, as I said earlier (p. 104 and note 2), appears at the end of several Books in two of the manuscripts. It is important to understand what 'editus' means here, since the note has helped to give rise to the theory that Pliny published only the first ten

¹ We do have one or two indications that Pliny may have added extra information to Books already completed. For example, Book 20 ends with a recipe against poisonous bites; Book 21 with details of weights and measures, after a paragraph which has been talking about Egyptian plants used for chaplets; Book 26 with extra medical recipes; and Book 27 with a few sentences on tape-worms in human beings, and the nature of animals and their potential for yielding medicines. This last, to be sure, is the subject of Book 28, but the transition between the two Books is extraordinarily laboured and awkward. Pliny usually stops dead, or announces the subject of the next Book in a simple sentence, e.g., Books 3, 5, 16, 17, 18 which illustrate the former, and Books 4, 8, 9, 10 which illustrate the latter. So the end of Book 27 does stand out as odd. We have no idea when such additions were made, of course. Some may have appeared as *marginalia*; some merely fitted neatly, if inelegantly, into a space conveniently available at the end of a papyrus roll. This, for example, might account for the addition to Book 27. For discussion of another type of insertion, see Kostomitsopoulos: *Eirene* 20 (1983), 97-100.

Books of the *NH* during his lifetime, leaving the rest for his nephew to release after August 79. Kenney has discussed the meaning of 'edo' and has suggested that it

connotes the resignation of rights and responsibilities . . .
 Publication . . . did not necessarily connote the making of
 arrangements for the multiplication of copies that might
 happen on occasion, but a work once relinquished by its
 author was public property, and in that sense published . .
 . What mattered was the author's intention.¹

This definition can be illustrated by several authors. Cicero, for example, writes that the historian Sisenna easily surpassed 'omnes adhuc nostros scriptores, nisi qui forte nondum ediderunt, de quibus existimare non possumus', (*De Legibus* 1.7). We are to understand by this that certain historians have books either completed or in process of composition, which have not yet been released to the general public. Martial makes the same point by his use of 'emitto' and 'edo':

Plena laboratis habeas cum scrinia libris,
 Emmittis quare, Sosibiane, nihil?
 'Edent heredes', inquis, 'mea carmina'.
 (4.33.1-3)

and Horace's famous injunction about keeping one's literary work in a drawer for eight years is followed by the warning:

delere licebit
 quod non edideris; nescit vox missa reverti.
 (*Ars* 389-90)²

¹ In *Cambridge History of Classical Literature* 2.19.

² This point about an author's releasing a manuscript from his control seems to have been missed by editors of Pliny the Younger's *Ep.* 5.5.5. Fannius, who had written three volumes of a work dealing with the death of those who had been banished or executed by Nero, had a dream in which Nero entered his house and read right through 'primum librum quem de sceleribus eius ediderat'. Nero read the second and third volumes, too, but it is only the first which is described by Pliny as *editus*, beyond the author's control. Are we to understand that it was fear caused by publication of this volume, which caused Fannius to have his prescient dream?

By 'editus', therefore, the writer means that a book has passed out of the author's control and become public property. It is thus not the same as 'proditus' which indicates simply that information has been transmitted in writing to a reader, (see *supra*, pp. 128-31). 'Prodo' may mean the same as the English word 'publish'; 'edo' certainly does. The implication of the marginal note in some of Pliny's manuscripts must be that Pliny had retained control of two thirds of the *NH* until the time of his death.

However, this theory depends upon our knowing that 'editus post mortem' is a note with a respectable and trustworthy tradition to support it, and this we do not know. How old is the note? On whose authority was it written? What corroborative evidence do we have that Pliny withheld any Books at all? His dedicatory letter to Titus gives every reason to suppose that Titus was being offered a complete work. Are we, then, to argue that Titus received a single presentation-copy of a work not yet destined for the general public? It is possible, perhaps, but in that case, what does Pliny mean by saying of his initial table of contents, 'tu per hoc et aliis præstabis ne perlegant', (*Præf.* 33)? Frankly, there are too many unanswered questions about 'editus post mortem' to allow one to treat it unreservedly as a piece of dating-evidence.¹

Conclusions

(i) The Books of the *NH* were composed, with the exception of Book 1, in the sequence in which we now have them. References to 'secundus liber', which is the same as our Book 2, however, clearly imply the existence of a Book 1, as does the reference to a table of contents in the prefatory letter.² The oldest manuscripts have separate bibliographies attached to each Book.

¹ There is an interesting, somewhat similar case in connection with Livy. The manuscripts of the *Periocha* of Book 121 begin with the information 'qui editus post excessum Augusti dicitur'. This does not mean that Books 121-142 were *written* after Augustus's death, but simply that they contained material which Livy was unwilling to release during Augustus's lifetime. He therefore retained control over his manuscripts until after 14 AD. See Syme: *RP* 1.412. Cf., *Ibid.*, 448-9.

² References to Book 2 are 6.171; 17.23; 18.239, 323; 35.179. *Præf.* 21 ('his voluminibus auctorum nomina prætexui') and 33 ('huic epistolæ subiunxi').

(ii) There are two possible set of dates for the composition of the *NH*. One runs from the end of May 72 until the end of 78 at the latest. The other runs from about April 76 until again, the end of 78. May 72, however, is not as significant a guide to Pliny's beginning to compose the *NH* as 76.

As discussion of his career in Chapter 1 has indicated, Pliny was outwith Italy for at least part of the early seventies, engaged upon a number of procuratorships. The longer of the two periods suggested above for composition almost certainly implies that Pliny must have done at least some of his research and composition while abroad. This raises questions about the resources available to him and these will be discussed in Chapter 4. The shorter of the two periods, on the other hand, may mean that Pliny was doing much more of this work in Italy but at a very much faster rate. The difference between 6.5 years and 2.5 years for composition of a lengthy and detailed book is obviously important. It will be the task of Chapter 3 to see if there are any indications in Pliny's working timetable and working methods which may help to determine which of these two periods is the more likely.

III

Pliny's Working Time-Table

The question of how Pliny managed to fit his literary work into his daily schedule has, on the whole, been answered either not at all or by reference to his nephew's letter to Bæbius Macer (3.5.7-16).¹ Commentators, editors, translators are in agreement that Pliny's output was prodigious, that he had an extraordinary capacity for work, that he devoted himself wholly to the labour of scholarship,² but none has yet tried to find out whether this extravagant language is justified, especially in comparison with other voluminous writers. In this chapter, then, I intend to try to answer the following questions: (i) Was there a routine Roman day, more or less standard over a long period of time, and have we reason to think that, if there were, Pliny would have followed it? (ii) How did someone like Cicero produce a large number of works in a short space of time, and how does this compare with the two possible time-tables for Pliny, 76-78 or 72-78, which we suggested in the previous chapter? Answers to the second question will help to provide us with a work-rate—how many words per day, on average, can one expect from a busy Roman author?—something which will have relevance for more than the study of Pliny alone.

The Roman Daily Time-Table

The standard reference for the way in which time was spent in Rome during the first century AD is Martial: 4.8 It works out thus:

¹ The Loeb introduction to the *NH*, for example, relies entirely on Pliny the Younger, so does the article in Pauly-Wissowa, so does the lengthy notice in the eleventh edition of the *Encyclopædia Britannica*, and so does Syme: *Tacitus* 1.62. The introduction to the Budé edition makes no direct comment, but prints Pliny the Younger's letter.

² Carcopino may be taken as typical when he refers to 'such monomaniacs as the elder Pliny [with his] morbid appetite for work, [who] toiled over his writing for sheer love of it twenty hours out of the twenty-four'. *Daily Life in Ancient Rome*, 184-5.

<u>Hours</u>	<u>Activity</u>
1-2	<i>salutatio</i> : receive clients.
3-5	lawyers go to the courts: ¹ business is done.
6-7	(<i>prandium?</i>): siesta.
8-9	Exercise.
9	Dinner.
10	Entertainment. ²

Comparison with time-tables both earlier and later in date show little variation upon this basic pattern: Cicero in Rome during early August 46 BC [*Ad Familiares* 9.20.3 = SB 193]; Horace, very lazy, in Rome [*Saturæ*, 1.6.122-3, 125-8, 113-15]; Spurinna at the age of seventy-seven, probably in the country rather than Rome [Pliny: *Ep.* 3.1.3-9]; two Imperial routines, that of Vespasian [Suetonius: *Vespasian* 21] and that of Septimius Severus [Dio Cassius 77.17]³ and perhaps pseudo-Martial, again in the country rather than Rome [*Epigrams ascribed to Martial* 1].⁴

Pliny's Routine

So how closely did Pliny's average day conform to this scheme of things? Fortunately, his nephew described his uncle's routine in a certain amount of detail, and so we can judge for ourselves the answer.

1 Cf., 8.67.3, and Horace: *Saturæ* 1.9.35.

2 Martial does not mention a meal earlier than *cena*. Presumably it should be fitted in between the end of business and the siesta. See 10.48.1-2. Cf., 11.52.3. For variations, see 10.70.5-14.

3 Why do historians bother to mention an Emperor's time-table if it conformed to the standard pattern? With a view, I suspect, to satisfying readers' curiosity about the daily life of the great, just as popular newspapers these days emphasise how 'normal' many aspects of the Queen's daily routine are.

4 These are included in Ker's Loeb edition of Martial's *Epigrammata* but are not in the Teubner, nor in the Budé editions, nor in the latest Loeb edition of Shackleton Bailey. Their provenance is 'manuscripts and old glossaries', according to the Loeb note. They are therefore highly suspect.

Pliny's routine compared with Martial's 'average day'Martial 4.8Pliny Ep 3.5.7-13¹

- | | |
|--|---|
| <p>(i) 'Prima salutantes atque altera conterit hora'.</p> <p>(ii) 'exercet raucos tertia caudicos; / in quintam varios extendit Roma labores'.</p> <p>(iii) 'sexta quies lassis: septima finis erit'.</p> <p>(iv) 'sufficit in nonam nitidis octava palæstris'.</p> <p>(v) 'imperat extractos frangere nona toros'.</p> <p>(vi) 'hora libellorum decuma est, Eupheme, meorum'.</p> | <p>(i) Rise between midnight-2am in winter [i.e., 11th November onwards, <i>NH</i> 2.125]; perhaps not much later in summer, [23rd August onwards]. 'Lucubrare Vulcanalibus incipiebat non auspicandi causa sed studendi, statim a nocte multa, hieme vero ab hora septima vel, cum tardissime, octava, sæpe sexta'.</p> <p>(ii) 'Ante lucem ibat ad Vespasianum imperatorem'.</p> <p>(iii) 'Inde ad delegatum sibi officium. Reversus domum, quod reliquum temporis, studiis reddebat'.</p> <p>(iv) 'Post cibum, sæpe . . . æstate, si quid otii, iacebat in sole, liber legebatur, adnotabat excerpebatque'.</p> <p>(v) 'Post solem plerumque frigida lavabatur, deinde gustabat, dormiebatque minimum; mox quasi alio die studebat in cenæ tempus'.</p> <p>(vi) '[Cena] Super hanc liber legebatur, adnotabatur et quidem cursim'.</p> <p>(vii) Surgebat æstate a cena luce, hieme intra primam noctis'.</p> |
|--|---|

This makes one or two things clear. First, Pliny worked at his books well before the usual time for rising; secondly, he used spare time after work, siesta, meal-times, and bathing for the same purpose. Thus, his

¹ For the times see Appendix 8.

careful disclaimer to Titus, that he had worked upon the *NH* only at night and had spent the day in public duties (*Præf.* 18) is true in spirit if not quite true in fact. Certainly it was his own time and not Vespasian's, which he was using for private study.¹ Nor is his reference to being satisfied with the minimum amount of sleep necessary for good health (*Ibid.*) any less disingenuous. We know he cat-napped during the day,² so we may be sure that Pliny slept quite as much as he needed and hardly less than other Romans who did not follow his demanding time-table of personal study.³

This, then, was Pliny's routine in Rome, but what of the country? In Pliny's day there were between 135 and 159 holidays per year,⁴ and it seems to have been the custom for Roman gentlemen to have taken at least some of that time to visit their country houses and get away from the noise and press of people in the City. If we look at the setting of Cicero's dialogues, for example, we see that some of them take place in a country house during one such holiday or another: *De Re Publica* [1.9 (14)], *De Finibus* [3.2.8], *De Natura Deorum* [1.6 (15)], *De Oratore* [1.24]. Others make no mention of holidays, but only of the country retreat: *De Legibus* [1.1.1], *De Divinatione* [1.5.3], *De Finibus* [1.5.14, 3.2.7], *Academica* [1.1, 2.9], *De Fato* [1.2], not forgetting *Tusculanæ Disputationes* which were supposed to be a record of the conversations held during five days at Cicero's villa in Tusculum. Now, it is true that all these are settings for conversation rather than solitary academic work, but they do show that not every Roman gentleman spent his whole time in the country hunting, shooting, and fishing.

1 Reference to one's labours at night became something of a literary convention, as Janson points out, *Latin Prose Prefaces*, 97-9, 147-8. But in Pliny's case, at least, there was truth behind the convention.

2 'Erat sane somni paratissimi, non numquam etiam inter ipsa studia instantis et deserentis', Pliny: *Ep.* 3.5.8.

3 He also worked while he was travelling, whether by carriage, or sedan-chair in Rome, both winter and summer, Pliny: *Ep.* 3.5.14-16.

4 At the time of Claudius, the calendar contained 159 days marked as holidays of one kind or another. Marcus Aurelius restored the business year to 230 days, (*SHA Marcus Antoninus* 10.10), so in Pliny's time, one presumes that the business-calendar stood between 206 and 230 business-days. See Carcopino: *Daily Life in Ancient Rome*, 205. Carcopino, referring to Tacitus: *Historiæ* 4.40, says that Vespasian cut down the number of holidays. Actually, Tacitus does not say this. He says that Vespasian considered a senate proposal to name months after Emperors was gross flattery and ordered not only that this practice should cease but also that previous such entries in the calendar be expunged.

So if we allow that Pliny had a good one third of the year at his disposal to get away from Rome if he so desired, how did he spend the time? According to his nephew, 'in secessu solum balinei tempus studiis eximebatur (cum dico balinei, de interioribus loquor: nam dum destringitur tergiturque audiebat aliquid aut dictabat), [Ep. 3.5.14]. It sounds as though his régime had become much more rigorous, but in fact, if we remind ourselves of his winter time-table, what we notice is, first, that Pliny would have no *salutatio* and no 'officium sibi delegatum' in the country, and so those three and a half hours¹ could be devoted to personal study. Secondly, because of the increased daylight during summer at any rate, his retiring to bed would take place later than it did in winter, thus affording him—at least, in theory—more time to work. Indeed, there is an overall difference of five hours' daylight between summer and winter in the Roman calendar, and this could have made a considerable difference to the quantity of work Pliny was able to do at that time—unless, of course, he chose to work at night, as he protested to Titus he did (*Præf.* 18). This need not, however, necessarily be taken *au pied de la lettre*.²

One catches a brief glimpse of his routine at Misenum on 24th August 79. 'Usus ille sole, mox frigida, gustaverat iacens studebatque', (Pliny: *Ep.* 6.16.5). It must have been about 1 pm that his attention was drawn to the eruption.

So it looks as though Pliny's day did not, on the whole, differ all that much from the standard Roman pattern. What he seems to have done is to use his time more efficiently than perhaps many, and to devote more of his leisure more regularly to personal work than was usual among his contemporaries. Nevertheless, that comparison itself invites us to ask what others actually did outside business-hours which, as the time-table on page 167 shows were not particularly long.

1) Before Dawn

Letters were written, Cicero: *Ad Atticum* 6.2 = SB 116, 13.38 = SB 341; *Ad Familiares* 1.1 = SB 12; 1.2 = SB 13; *Ad Quintum* 2.3.7 = SB 7; 3.2.1 = SB 23; 3.7.2 = SB 27.

¹ Or just over two hours during the winter.

² Compare Cicero's equally determined attitude to make the best use of the time available to him. 'Subsiviva quædam tempora incurrunt, quæ ego perire non patior, ut, si qui dies ad rusticandum dati sint, ad eorum numerum adcommodentur quæ scribimus', *De Legibus* 1.3.9.

It is possible that Horace was moved once to compose verse at that hour, but he may have been referring to correspondence, *Epistulæ* 2.1.112-13.

2) Siesta

The younger Pliny composed verses during the siesta in summer (*Ep.* 7.4.4), as perhaps did pseudo-Martial (*Epigrams ascribed to Martial* 1).

3) Baths

Augustus wrote a short collection of epigrams, most of which he had composed at the baths, Suetonius: *Augustus* 25.

4) Travelling

Julius Cæsar wrote two books on 'Analogy' while he was returning to Italy through the Alps from Cisalpine Gaul, and a long poem during the twenty-four days he spent on the road between Rome and Western Spain, Suetonius: *Cæsar* 56. Cicero wrote letters in a carriage and on board ship, *Ad Atticum* 5.17 = SB 110; 11.1 = SB 211; 16.7 = SB 415; *Ad Familiares* 12.17.2 = SB 204. During a sea voyage from Velia, he also began work on a summary of the *Topica* of Aristotle, *Ad Familiares* 7.19 = SB 334. Pliny the Younger made up some poems while travelling between Rome and Tusculum, *Ep.* 9.10.2, and Juvenal noted that while a rich Roman was being carried about in a closed litter, he could read, write or sleep, *Saturæ* 3.241.¹

5) Dinner

Letters could be written or dictated during the latter part of the meal, Cicero: *Ad Atticum* 14.6 = SB 360; 14.12 = SB 366; 14.21 = SB 375' 15.13 = SB 416' 15.27 = SB 406; *Ad Familiares* 9.26.1 = SB 197.

So could verses, Persius 1.53; Horace: *Saturæ* 1.10.60-1; Pliny the Younger: *Ep.* 4.14.2. (This also includes information that he wrote verses while travelling and while at his bath). Celsus advised certain people, for reasons of health, not to read or write poems *post cenam*, (*De Medicina* 1.4.6). This, of course, was probably intended

¹ One should not forget the Roman habit of taking notebooks (*ceræ, pugillares*) on a picnic or a hunt. Pliny: *Ep.* 1.6.; 5.18.2; 6.5.7; 9.36.6. Seneca: *Epistulæ Morales* 87.3. Juvenal: *Saturæ* 1.63.

to refer to work during the evening or night rather than during the latter part of the meal.

6) Evening/Night

Nox referred to the period between sunset and sunrise and might, therefore, include what we should call 'late evening'. Letters were often written at this time. Cicero: *Ad Atticum* 8.3 = SB 153; 12.30 = SB 270; *Ad Familiares* 9.2.1 = SB 177; 16.6.2 = SB 125; Suetonius: *Augustus* 50; Seneca: *Epistulae Morales* 123.1.

Reading and study took place then. Aulus Gellius: *NA* 9.4.5; Seneca: *Epistulae Morales* 8.1, 122.3. Cf., *NQ* 3 *Præf* 2; Quintilian: *Institutio* 10.3.27; Columella: *RR* 10 *Præf.* 5; Philostratus: *VS* 565. Books and verses were written. Cicero: *Ad Atticum* 13.26 = SB 286; Persius 5.62.

Pliny, then, was not unique or, it appears, even unusual in being prepared to employ his leisure-time for private work. Therefore we must modify our earlier assessment yet again, and put down his industriousness to the habit of *regularity* in using private time thus. Under the circumstances, his modern reputation as a workaholic begins to look over-stated.¹ Nevertheless, thirty-six Books of the *NH* in 2.5 or 6.5 years looks like a remarkable achievement. But what does it mean in terms of composition, the sheer labour of getting the material down on papyrus in coherent form? How intensive a labour is it in comparison with the literary achievement of other writers? In order to have some notion, let us examine the only person who has left us a detailed record of his literary progress over a fairly long period of time, namely Cicero.

¹ It is instructive to compare his town day with his nephew's country régime, *Ep.* 9.36. Pliny the Younger obviously filled his time with varied activities, including both business and private work, and seems to have been called *studiosus* by his friends. Yet he himself regarded his day as idle in comparison with that of his uncle, *Ep.* 3.5.19. Perhaps there was something about the relentlessness with which the elder Pliny drove through his time day after day regardless, which impressed the younger as remarkable. Perhaps, too, there is a touch of pious exaggeration in the comparison between himself and his uncle. The letter to Bæbius Macer is, after all, something like an obituary notice, in which the virtues of the dead are not minimised and the achievements of their posterity tactfully spoken of as modest.

Cicero

Between February and November 45 BC, Cicero wrote eight works and began a ninth before the year was out. These were:

- (i) *Consolatio* (now lost),
- (ii) *Hortensius* (now lost),
- (iii) *Academica* (first in two books, then expanded to four),
- (iv) *De Finibus*,
- (v) *Tusculanæ Disputationes*,
- (vi) *Laudatio Porciæ* (now lost),
- (vii) *De Natura Deorum*,
- (viii) *Pro Rege Deiotaro*,

His treatise, *De Senectute*, he may have started in mid-December.

At an extremely rough computation, including the unknown length of *Consolatio*, *Hortensius*, and *Laudatio Porciæ*, one can suggest that Cicero wrote something like 250,000 words between February and November. This does not take into account the 111 extant letters Cicero wrote during the same period. Now, if we apply the same rough counting to the NH, we produce a word-total of about 16,600 words for Book 37 and therefore 18.5 Books of the NH as the equivalent of Cicero's output in that single year. On the face of it, therefore, it seems possible that Pliny could have produced the NH in only 2.5 years.

However, 45 was an unusual year for Cicero. This great burst of composition followed the death of his daughter Tullia in February, and Cicero, deeply shocked, retired from Rome and from public life, and gave himself up to private grief and work. We must therefore ask ourselves whether or not a comparison between his output in 45 and Pliny's is fair. The only way to judge that will be to follow Cicero in detail as he himself recorded the year in his letters.

In the middle of February, Tullia died at Tusculum and her father spent the next three weeks at the house of his friend Atticus in Rome. On 6th March he left Rome and went to his own house at Astura, probably resting in Lanuvium overnight. He had obviously devoted himself to work during the previous four weeks, for on 7th March he wrote to Atticus that 'litteris non difficilium utor quam si domi essem', (12.13 = SB 250). By 8th, he was able to say that he had finished a piece of work (i.e., the *Consolatio*) and was having it copied. Whether this was in the form of a

letter or a pamphlet we do not know.¹ He also says he found consolation in writing all day ('totos dies'), an observation he repeats on the following day ('mane . . . vesperum', 12.15 = SB 252). During the evening of 9th, however, he had a visitor (12.16 = SB 253) who called again next day before returning to Rome (12.18 = SB 254).

On 11th, he wrote to Brutus; on the next three days, only to Atticus, (12.18 = SB 254; 17 = SB 255; 18a = SB 256; 19 = SB 257). Again, on 15th he makes another reference to spending all his time on literary works, and this letter includes a request that Atticus check certain references which Cicero wants for the *Consolatio*, (12.20 = SB 258).² It sounds as though he was revising it. We should also take into account his treatise *Hortensius* which he probably started at the end of 46 and finished round about the middle of March 45.³ On 16th and 17th we have only letters to Atticus. On 18th, however, he was checking further details in *Consolatio*, (12.22 = SB 261)—at least, that is my assumption. The draft which was probably sent to Atticus after 8th may not have been the final version. We know, for example, that Atticus often acted as Cicero's editor and sounding-board,⁴ and we also know that Cicero did not hesitate to rewrite a work, even substantial in its form, if he thought it was susceptible of improvement. The *Academica* is a case in point. So a reasonable explanation of these continued inquiries is that he was checking points in a work already completed. The subject-matter is the same as that he was checking on 15th and there he says openly that it is relevant 'ad eum librum quem de luctu minuendo scripsimus'.⁵

¹ See Shackleton Bailey's note *ad* 12.14 = n^o 251 in his edition. See also Vitelli: *RAL* 28 (1973), 673-81. Lepage: *LEC* 44 (1976), 255. I have used Shackleton-Bailey's dating throughout this discussion.

² See Shackleton Bailey's note *ad locum*. *PW* 7².1123. Vitelli: *op. cit.*, *supra*.

³ Ruch: *L'Hortensius*, 38. Grilli (ed): *Hortensius*, 173 supporting Philippson's article in *PW* 7².1126. In *De Divinatione* 2.1, Cicero gives a small list of his philosophical works in chronological order: (i) *Hortensius*, (ii) *Academica*, (iii) *Tusculanæ Disputationes*, (iv) *De Natura Deorum*, all written just before *De Divinatione* itself. Broad suggestions for dating are given by MacKendrick: *The Philosophical Books of Cicero*, 109, 114, 131, 149, 169.

⁴ *Ad Atticum* 14.17 = SB 371; 16.3 = SB 413; 16.6 = SB 414.

⁵ The tense of the verb clearly indicates a completed work. Shackleton Bailey *ad* 12.23 = SB 262 also seems to think that Cicero was referring to the *Consolatio*.

In his letter of 19th, (12.23 = SB 262) he was still asking for information, but appears to have been preparing for the *Academica* which was therefore begun at about this time. Perhaps, as Ruch observes, the appearance of the same characters in *Hortensius* and in the first version of *Academica* indicates that the latter flowed naturally from the former, at least in inspiration.¹ Cicero also wrote a letter to Sicca, although he must have done that on an earlier day, as he refers to Sicca's reply.

A letter of 20th contains yet more request for historical information similar in tone to that needed for the *Consolatio*, (12.24 = SB 263). The next two days produce only letters to Atticus. On 23rd, however, Sicca arrived for a week's visit (12.28 = SB 267). A reference to the 'Litteræ' by which Cicero was 'consolatus' seems to indicate that the *Consolatio* was now, at last, completed. For the remainder of Sicca's visit we hear no more about work. Cicero wrote to Atticus on 24th, 25th, and 26th, (12.28 = SB 267; 29 = SB 268; 33 = SB 269): on 27th he wrote to Egnatius as well in accordance with Sicca's advice, (12.30 = SB 270). He put off at least one visit on 28th (12.32 = SB 271), and in a letter dated 29th we infer that Sicca was still with him (12.31 = SB 272). By 30th, however, Sicca had gone and Cicero was making plans to stay with Sicca the following night, and to go thence to Ficulea, (12.34 = SB 273).

March, therefore, saw him write 28 letters, *Consolatio*, and the remainder of *Hortensius*; begin work on the first version of *Academica*; and receive two visits which probably lasted no more than an hour or two in the evening, and a third which lasted a week. It may or may not be significant that we hear nothing more of incessant literary work while Sicca was staying with him. Perhaps he needed a rest: perhaps he was simply reading and taking notes.

We almost lose sight of him in April. This is because he stayed with Atticus in a villa near Nomentanum and so daily correspondence became verbal. Three letters, however, survive. One to Servius Sulpicius in the middle of the month, (*Ad Familiares* 4.6 = SB 249), refers to fathers of the past who lost their sons, and contrasts their loss with his own. Cicero looks forward to Servius's visiting him in the near future. Another to Torquatus (*Ad Familiares* 6.2 = SB 245) says that Cicero has been ill but is recovering somewhat. The date may be assignable to a day

1 *L'Hortensius*, 36.

before 20th.¹ Thirdly, a letter to Dolabella (*Ad Familiares* 9.11 = SB 250), datable after 20th, refers to his lack of *hilaritas* and *suavitas* which has rendered him 'nondum satis confirmatus . . . ad scribendum [litteras]'. Had he suffered a form of nervous breakdown? 'Valetudo', his word in 6.2, can refer to mental or emotional incapacity, but it is not usual in this sense in Classical Latin, and would normally be accompanied by *animi* if that is what the writer intended. Still, a nervous *crise* is not without physical symptoms, and we are therefore entitled to wonder whether Cicero fell ill for two or three weeks in April as a result of the continuing emotional strain brought on by Tullia's death. If so, how much work did he do? The chances are, very little.

In May, however, we catch up with his daily life again. On 1st or 2nd he left Atticus's villa and returned to his own at Astura. On 3rd or 4th he wrote to Brutus as well as to Atticus; on 5th to Atticus; on 6th he mentions once more that he has devoted himself entirely to writing ('ego hic scribendo dies totos').² Presumably this refers to the first version of *Academica* finished only a few days later. On 7th he draws attention to 'quid litterarum et cuius generis conficiam' (12.38a = SB 279) and mentions a work by Antisthenes, which he has been reading. On 9th (12.40 = SB 281) we learn that he has read a pamphlet against him by Cæsar and intends to make a reply. This *Epistula ad Cæsarem* was finished by 13th, but we have no idea whether it was merely a long letter such as he might have written by way of normal correspondence, or whether it was a pamphlet, in which case it could have taken up more of his time. It was never sent or published.³ Cicero had beside him the letters of Aristotle and Theopompus to Alexander as guides. Again he mentions the amount he has written ('tam multa non possunt [legere] quam ego scripsi').

On 10th he wrote to Atticus that he was thinking of leaving Astura on 16th and going to Tusculum, Rome, or Arpinum (12.42 = SB 282); and to Luceius, that he was still wrapped up in literary work ('litteris utor, in quibus consumo omne tempus') (*Ad Familiares* 5.15 = SB 252). A letter of 11th to Atticus reiterated his travel proposals (12.41 = SB 283), as did another of 12th (12.43 = SB 283). Now, on 13th he announces that he has

¹ A suggestion of Shackleton Bailey in his note *ad locum*. He points out that there is no news of the Battle of Munda, which was known in Rome on 20th.

² These letters are *Ad Atticum* 12.35 = SB 274, 36 = SB 275, 37 = SB 276, 37a = SB 277, 38 = SB 278.

³ See Shackleton Bailey, note *ad locum*.

completed 'two large sections' ('duo magna συντάγματα absolvi'), meaning a treatise in two 'Books'.¹ This was the original version of the *Academica* and so we have a chance to do some computation and speculation.

The *Academica* as we now have it—one original Book and one revised—consists of about 32,000 words on very rough counting. If Cicero began *writing* on 19th March and wrote every day until 13th May, this gives us an average of about 600 words per day, which comes to only a little more than the 560 words of the two letters for 19th and 20th March. If we allow a fortnight's non-writing in April because of his illness, the daily total rises to c. 800. Three weeks' allowance gives us c. 1,000; and if we presume he managed no literary composition at all in April, the daily total of words is still only c. 1,300, the equivalent of his six letters of 19th-24th March. To these totals, of course, must be added the letters he wrote, largely to Atticus; but even so, the longest letter in March has about 400 words, and the shortest just over 90, so we are still postulating a daily total of c. 1,000 if he worked every day and 1,400 if he did nothing in April. It hardly seems to coincide with the impression of long, unremitting toil which he mentions several times during the course of those two and a half months unless, of course, we wish to argue that 1,000 or 1,400 words a day may represent unremitting toil for some people and that Cicero happened to be one of those people.

What this composition does not allow for, of course, is reading. Cicero cannot have written *Academica* without research or preparation, and we are therefore not entitled simply to count words and days, and then work out an average without taking preparation into account. Let us go back, for a moment, to what he says in the letters. Reading and research are first mentioned on 19th March, with further research on 20th. The earliest reference to *writing* after 19th, however, does not come until after 20th April, followed by others on 6th, 7th, and 9th May, the last two being accompanied by pointed remarks about the quantity of work he was producing. If we suggest, therefore, that he began writing (or, more probably, dictating)² the *Academica* on or just before 20th April, it means

¹ See Shackleton Bailey, note *ad locum*. The letter is 12.44 = SB 285.

² Every so often Cicero draws attention to the fact that a letter is written in his own hand, e.g., *Ad Atticum* 5.19 = SB 112; 7.14 = SB 138; 12.32 = SB 271, *Ad Quintum* 2.2.1 = SB 6; 2.16.1 = SB 20. But more frequently he refers to dictation, *Ad Atticum* 4.16 = SB 89; 5.17 = SB 110; 7.13 = SB 136; 8.13 = SB 163; 10.17 = SB 209. Some of this was necessitated

he had 22 or 23 days in which to finish it. This gives nearly 11,000 words per week, or almost 1,500 per day, to which must be added the daily total of his letters. It is quite fast work, but let us keep it in perspective. For example, the average length of a novel by George Simenon is 45,000 words. When he was writing the *Maigret* series, Simenon produced one novel per month. Later that production was reduced to one every two months, and finally one every three. Even so, the rate fluctuated. In 1955 he wrote three novels in five months, and in eleven months between 1957 and 1958 he wrote five.¹ In other words, it looks as though Cicero was writing or dictating at about the rate of a prolific modern novelist.

Academic work, of course, is not always the same as fiction and we must also bear in mind that he was probably planning the first book of *De Finibus* at the same time.² Was the work of composing the *Academica* laborious? It is difficult to be sure. Reid came to the conclusion that 'it was composed of two long fragments of Antiochus taken from different works, two of Philo from the same work, four of Clitomachus from three or four different works', and that Cicero had merely translated these

by inflammation of his own eyes, (cf., 7.2 = SB 126 which refers to Atticus), but often, one may guess, he dictated because his own handwriting was so poor, on which see *Ad Familiares* 16.22.1 = SB 185. His use of the verb *scribo* does not always indicate that he himself had written something, e.g., *Ad Atticum* 14.21 = SB 375, 'hæc scripsi seu dictavi'. His secretaries varied in their efficiency. Tiro, however, was especially competent, being able to take down whole clauses at a stretch, *Ad Atticum* 13.25 = SB 333.

¹ See Gothot-Mersch: *Lire Simenon*, 86-7. The time he took over each varied. *La Porte* was written in eight days, *La Chambre Bleue* in thirteen, *Maigret et le Fantôme* in seven. It is interesting to compare this with T. E. Lawrence's claims for his composition of *The Seven Pillars of Wisdom*. L. Hart records them thus:

He has told me that he wrote in great bursts that lasted as long as twenty-four hours with only a single break for food. During these sittings he averaged from a thousand to fifteen hundred words *an hour* [my italics, M-S] and in the longest wrote over thirty thousand words. Between the bursts there were long intervals, employed in revision,

T. E. Lawrence, 399. Such an extraordinary rate of work, achieving in one hour what Cicero averaged usually in one day, helps to keep in perspective the claims of modern writers that Cicero and Pliny were somehow *prodigious* word-smiths. It really all depends on what one means by *prodigious*.

² *Ad Atticum* 12.12 = SB 259 (16th March) and Shackleton Bailey, note *ad locum*.

passages from the Greek and provided appropriate settings, historical anecdotes from Roman history, and connecting links wherever necessary.¹ It is not a view with which everyone agrees. As Rawson has said,

It has proved impossible to show that Cicero was merely copying out large chunks from lost Greek philosophers of the third to first centuries BC. He doubtless drew on memories of the wide reading of his youth (and possibly lecture notes?) . . . He had never . . . given up reading philosophy . . . He had at his disposal the libraries of his friends.²

So what am I suggesting? Something like the following time-table seems possible.

March	19	research (for <i>Academica</i> ?)
	23-29	Sicca's visit
	31	staying with Sicca
April	20	recovery after illness <i>chez</i> Atticus
May	1/2	return to Astura
	6	writing (<i>Academica</i> ?)
	7	engaged on literary/philosophical work
	9-13	(a) <i>Epistula ad Cæsarem</i> (b) two-book version of <i>Academica</i> completed.

Now, if we say that he had four days' full work before Sicca arrived, seven days' partial work during his visit, and lost one day in travel, that leaves nineteen days in April, an unknown number of which may have been lost through illness. With a possible starting-date for writing on 20th April, that gives us thirty days' preparation time at most, the likelihood being

¹ *M. Tulli Ciceronis Academica*, 53. The implication is that Cicero needed to have had no more than six or seven books in Greek in order to assemble all the material he wanted. That his command of Greek was excellent we need have no doubt. He translated a whole range of authors, both prose and verse—Plato, Aratos, Homer, the Attic tragedians, Xenophon, Æschines, Demosthenes—as well as writing an account of his own consulship in Greek. Soubiran's Budé edition of the *Aratea* and *Fragments poétiques* has an excellent introduction giving details of many of these. See also Plutarch, for details of Cicero's close association with Greek as a student, *Cicero* 2.2; 4.1, 4; 5.2.

² *Cicero*, 233. See also Süss: *Cicero*, 32-51.

that Cicero may have had fewer. So, with six or seven Greek books to read during that time, we are saying he need have read and made notes on no more than about 1.5 books per working week. Indeed, if we go further, and postulate half a book before Sicca's arrival, and one and a half during his visit, we can also suggest that he could have read two per week during his stay with Atticus and still have had time to be ill! Dictating about 1,500 words a day after 20th, rising to perhaps 2,000 or so with his letters, and perhaps slightly more between 9th and 13th May because of his *Epistula ad Cæsarem* (whose length remains unknown),¹ therefore represents a feasible working-model for Cicero's day.²

I do not pretend, of course, that this is anything more than conjecture, but it does agree with the few specific references which Cicero affords us, and may therefore serve as some kind of an hypothesis when we come back to consider Pliny.

It would be tedious and unnecessary to rehearse the remainder of Cicero's year in this much detail, but a brief summary of events in the rest of May, June, July and August will help clarify this suggested picture of his *modus laborandi*.

On the 14th May, Cicero was working hard, presumably at *De Finibus*. 'Equidem credibile non est quantum scribam, quin etiam noctibus; nihil enim somni', (*Ad Atticum* 13.26 = SB 286). On 15th, he left Astura and went to Tusculum, and on the 18th he had a visit from Atticus (*Ad Atticum* 12.46 and 12.50 = SB 287 and 291). Between 20th and 26th he had at least one house-guest, and we can be confident that he had two until 22nd (*Ad Atticum* 12.51 = SB 293; 13.1 = SB 296; 13.28 = SB 299).³ By 25th he had decided not to re-write his *Epistula ad Cæsarem* in accordance

¹ On 13th May, however, Cicero 'drafted a letter to Cæsar', ('effeci epistulam ad Cæsarem'), and if this was the pamphlet (?) to which he made reference earlier, it means that Cicero did not really turn his attention to it until *after* he had finished the *Academica*. See *Ad Atticum* 13.26 = SB 286.

² In *Ad Atticum* 12.52 = SB 294, written on 21st May, Cicero says, of his present academic work, 'ἀπόγραφα sunt, minore labore fiunt; verba tantum adfero, quibus abundo', which seems to imply that *De Finibus* upon which he was working and perhaps also the *Academica* were largely extracts adapted without much deep cogitation, and cast in the form of a treatise. Note, however, Rawson's *caveat* on this point, *loc. cit. supra*, p. 179, note 2.

³ Most of 13.28 = SB 299 was dictated. It is not until the final paragraph that Cicero writes 'manu mea'.

with criticism he had received since this seems to have annoyed him (13.27 = SB 298). On 28th we learn that he has a new project in hand, a *Dialogue* in the manner of Dicaearchus for which he must do some reading and asks Atticus to lend him some books (13.30 and 13.32 = SB 303 and 305). He has been reading Polybius and Libo in preparation for it. This information makes us presume he must have finished at least one Book of *De Finibus*, and indeed on 29th he tells Atticus as much. The First Book (Torquatus) is in Rome, waiting to be copied. Cicero has also written two new prefaces for the two Books of the *Academica* (13.32 = SB 305).

Now, the first Book of *De Finibus* is about 9,000 words long. If we suggest that he wrote it between 14th and 27th May, thereby allowing 28th for it to be sent to the copyists, so that on 29th his phrase 'Torquatus Romæ est' will make sense; and if we remove one day to account for time spent on the journey to Lanuvium, where he had broken his removal from Astura to Tusculum, and for time spent with his various guests, the word-total for each day is about 1,300, to which must be added an appropriate amount for the 29 letters he wrote to Atticus and others during the fortnight.

This is an interesting possibility, as it paints a picture of a work-load very similar to the earlier working-period. Let us now see what happens in June. Between 6th and 8th he had a visit from Atticus and on 9th he asked for books by Brutus and Panætus, neither of which appears to be relevant to his immediate concerns (13.8 = SB 313). He also had a visit from Sestius and Theopompus. On 11th he himself paid a visit to the politician Brutus (13.7a = SB 315) and on the following day asked Atticus for more information for his Dicaearchan *Dialogue* (13.5b = SB 316). He never mentions this particular project again, so one must assume he dropped it. Altogether, it had taken him sixteen days of thought from 28th May to 12th June. On 16th he had another visit from Atticus (13.9 = SB 317) and on 17th Dolabella came to see him and stayed all day (*Ibid.*). On 18th we have the first reference of the month to his literary work (13.10 = SB 318); then on 21st, Cicero left Tusculum for Arpinum (13.10 = SB 318).

From now until the end of the month comes a flurry of information about his literary activity. On 23rd, he agrees to re-dedicate the *Academica* to Varro, at Atticus's suggestion (13.12 = SB 320); on 24th he has already re-planned *Academica* in four Books. It is to be 'breviora', he says, (13.13-14 = SB 321). He was still working at this on 26th (13.16 = SB 323) and had finished it by 28th (13.18 = SB 325). Even more significantly,

by 29th he had completed *De Finibus* and sent the manuscript to be copied (13.19 = SB 326). The schedule thus revealed indicates that Cicero was working hard.

If we allow that he was most likely to have tried to work on *Academica* and *De Finibus* at the same time, we can suggest that he wrote Books 2-5 of *De Finibus* between about 29th May and 22nd June, and then sent away the text to be copied. This would make sense of his remark on 30th that Book 5 of *De Finibus* had already been copied from the manuscript in Atticus's possession, (13.21a = SB 327). Within those 25 days, Cicero lost a whole day to Dolabella (and, indeed, to another visitor who arrived at the same time), and we must make some allowance for the two visits from Atticus and the journey from Tusculum to Arpinum. Call it the equivalent of two days' loss.¹ This gives 23 days for writing, which works out at about 2,300 words per day—actually slightly more, if one takes into account his letters to Atticus. One week (23rd-28th) is left for re-editing the *Academica*. Notice that it is a question of editing rather than composition. Cicero would not have to do more than lay his plans, and then, had he wished, give instructions and leave the labour of re-writing to his secretaries and copyists. Under the circumstances, one week was probably quite sufficient. By 30th, the new version had already been sent to Rome for copying (13.21a = SB 327).

It is interesting, then, both that his work-rate appears to have increased and that he is making much less fuss about it. Perhaps the immediate pain of Tullia's death had begun to wear off and with its gradual cessation his energies started to come back. July and August, therefore, are worth examining to see if this trend continues.

Unfortunately, however, at this point data relevant to our needs begin to run out. There are several references in July to the 'proof-reading' and 'publishing' states of both the *Academica* and *De Finibus*,² but no

¹ The time could have been made up by Cicero's being confined to his house on 26th by heavy and incessant rain (13.16 = SB 323), but imponderables such as this cannot be stretched too far, otherwise one strays over the border between reasonable conjecture and fiction. Cf., Reid: 'It happened that continual rain fell during the first few days of Cicero's stay at Arpinum, so he employed his whole time in editing afresh the *Academica*'. *M. Tulli Ciceronis Academica*, 34. Cicero's letter does not actually say this.

² *Ad Atticum* 13.21a = SB 377 (perhaps datable to 30th June), 13.22 = SB 329; 12.23 = SB 262; 13.24 = SB 332; *Ad Familiares* 9.8 = SB 254; *Ad Atticum* 13.21 = SB 351.

mention whatever of current literary work. On 6th he left Arpinum and on 7th arrived in Tusculum again;¹ on 14th he went to Rome and stayed there for an unknown length of time, although he must have been back in Tusculum by about 28th.² On 28th he asks Atticus to lend him books by Cotta and Casca, for what purpose again we are not sure.

August tells us a little more. The first eleven days are a blank and then we learn that Cicero has just been to Lanuvium to meet Pollex and Balbus (13.46 = SB 338). On 13th he writes 'ea quæ in manibus habebam adieci, quod iusseras edolavi', (13.47 = SB 339) although what he had been writing and what he was now writing at Atticus's suggestion remain unknown.³ Before day break on 15th, Cicero was writing 'contra Epicureos', a remark which has been taken to refer to the first Book of *De Natura Deorum*, largely on the grounds of a request in the letter to Atticus dated 16th, that Atticus send him 'libros . . . de quibus ad te antea scripsi . . . et maxime Φαίδρου περὶ Θεῶν et †ΠΑΛΙΔΟΣ†' (13.38 and 39 = SB 341 and 342). On 28th July, he had asked for books by Cotta and Casca. Cotta is one of the principal speakers in *De Natura Deorum* and certainly Book I contains much criticism of the Epicureans. Are we to take it, then, that Book I at least belongs to the beginning of August? Perhaps. The 16th and 17th also saw Cicero busy: 'in scribendo hæreo', (13.39 = SB 342), 'in libris hæreo', (13.40 = SB 343). On 19th and 20th he was probably in Rome,⁴ and by the next day, when he was back in Tusculum, he was able to report that his *Laudatio Porciæ* was finished, (13.48 = SB 345). This eulogy in honour of Domitius Ahenobarbus's widow, may have come rather late after her death, since Varro and Ollius had already published theirs, and Cicero asks

1 See Shackleton Bailey's note *ad* 13.33a = SB 330.

2 13.25 = SB 333 ('ego Romam prid. Id.'). 13.44 = SB 336 begins with a reference to the procession which probably took place on the first of the last four days of the *ludi victoriæ Cæsaris* = 27th July. 'Etsi acerba pompa', he writes. This is either a reminder to Atticus of something they witnessed together, or Cicero's reaction to news in a letter from Atticus. If it is the former, perhaps the letter should be dated 29th in order to give Cicero time to travel to Rome and Tusculum. This may also mean that Brutus—'Brutus apud me fuit'—met Cicero in Rome. If the second interpretation is true, however, Cicero could have left Rome at any time before 28th and Brutus would therefore have been more likely to visit him in Tusculum.

3 It has been suggested that the new work was to be some composition in honour of Cæsar. See Shackleton Bailey's note *ad locum*.

4 See Taylor: *CPh* 32 (1937), 235.

for copies so that he can refresh his memory of what they said. Perhaps his visit to Rome had made him realise he should have contributed something. If so, he must have written in haste, because on 21st he sent a corrected version to Atticus. On the same day, he had a visit from Balbus Minor (13.37 = SB 346). On 23rd we hear of a letter which Cicero had written to Cæsar about Cæsar's book on Cato, (13.50 = SB 348). How lengthy this *epistula* was, we do not know. Finally, on 25th he left Tusculum for Astura, resting at Lanuvium for three hours because of the heat (13.34 = SB 350) and apparently intended to be in Rome in early September. On 30th he left Astura for Antium, dined with Atticus in Rome on 31st, and was back in Tusculum on 1 September, (13.47a = SB 352).

None of this, with the exception of the possible reference to Book I of *De Natura Deorum* gives us any firm data for the composition of two works we know he wrote in 45, *Tusculanæ Disputationes* and *De Natura Deorum* itself. So what can be done by conjecture? We know that *Tusculanæ Disputationes* was written first.¹ But Cicero tells us, 'quibus rebus editis tres libri perfecti sunt *de Natura Deorum*', indicating that once *TD* had made its appearance, *ND* was completed, implying that some work on it had already been done. This fits the mention of Phædrus, Epicureans, and heavy literary work in mid-August. Now, *TD* 1.4.7 gives us the following information about its genesis: 'ut nuper tuum² post discessum in Tusculano, cum essent complures mecum familiares, temptavi quid in eo genere possem'. The *genus* had been explained earlier: 'scholas Græcorum more'. On five successive days they all debated a variety of subjects, and it was recollections of these discussions which Cicero then put together in five Books ('libros contuli'). *TD*, then, was probably conceived between 27th and 31st July. If he began to write it immediately, the following dates were available. 1st to 11th August; 24th-29th August; the whole of September and October about which we know next to nothing; November during which the speech *Pro Rege Deiotaro* was written and, at only just over 4,000 words need not have occupied him for more than two or three days; and the first fortnight of December, after which he was writing *De Senectute*.

1 See *De Divinatione* 2.1

2 I.e., Brutus, to whom these remarks are addressed. The mention of Tusculum indicates that Cicero was probably *not* present in Rome for the procession of 27th July.

Let us return to 13th August, when Cicero wrote to Atticus that he had changed from one piece of writing to another at Atticus's suggestion. If we propose that Cicero had been working on *TD* and now switched to Book I of *ND*, that would allow him six days (13th to 18th) before he went to Rome to write 15,000 words, which works out at 2,500 words per day—precisely the work-rate I have suggested for *De Finibus* in June. So, the 67,500 words of *TD* could have been written at the same rate between 1st and 11th August, 24th and 29th August, and 2nd-4th September. In view of the complete blank in our knowledge of what Cicero was doing in September, October and much of November that year, this work-rate may well be too heavy and a smaller figure of words per day should be proposed. Even so, composition of *TD* lasting until the end of September would not contradict the pattern we have seen emerging. A lower figure would merely reflect the work-rate of March and April.

There remain *De Natura Deorum*, Books II and III. They consist of about 32,000 words and so could have been written in 16 days at the work-rate of 2,000 words per day or 23 days at 1,500 words per day. If one makes allowances for days lost to visitors, Cicero's own travel, and so forth, one could assign *TD* to September, and *ND* to October, and thus leave plenty of time for *Pro Rege Deiotaro* which was probably delivered in November. We have a reference to the speech, datable to mid-December (*Ad Familiares* 9.12 = SB 263).¹

Comments

What relevance, then, does all this have for one's discussion of Pliny's working habits? First, there are clear indications in Cicero's letters that his retirement in 45 was partial, not complete, and that his interest and involvement in political affairs increased, especially as the summer wore on and the immediacy of Tullia's death receded. Secondly, his philosophical works of this year tend to be a mixture of compilation and original commentary, in a fashion broadly similar to the *NH*. Thirdly, it seems possible to establish a work-rate for Cicero, which is manageable within the framework of a *normal* Roman day in the country. To be sure, Cicero occasionally says he has been writing very late at night or very early

¹ Should Cicero's version of Plato's *Timæus* be included in this schedule? It is more likely datable to early 44 than to 45, so on the whole, probably not. See Pini: *M. Tulli Ciceronis Timæus*, 14.

in the morning, but this is clearly not his regular practice, and in any case, as we have seen, such times were used by others, also, for composition. In order to construct a time-table for Cicero, then, we have not had to distort his day nor burden him (or his secretaries) with a work-load abnormally heavy.

So what may have been true for Cicero would also have been true for Pliny, for his schedule, too, seems to have differed in degree rather than kind from that of his contemporaries, (*supra*, p. 167). To be sure, we must make allowances for the possibility that between mid-72 and the end of 78 Pliny might have been in Rome much more often than was Cicero in 45, and therefore his time-table would have been that of the city rather than that of the country; but we must also bear in mind that for part of that time he was abroad on procuratorial duty. Even if Cicero's retirement was partial rather than complete, therefore, his commitments were still far short of what Pliny's are likely to have been while he was procurator or prefect. Still, bearing in mind his reputation for consistent hard work we may still suggest that he could have composed at a work-rate of, say, 1,500 words per day and worked thus every day; or he could have composed in intense bursts, in which case one is talking of a work-rate of perhaps 2,500 words per day. If, as is much more likely, he divided his time between Rome or provincial capital and a country villa, the work-rate available to him would differ accordingly; and I have also pointed out that he would have had the possible benefit of an extra five hours of daylight at his disposal in summer, (*supra*, p. 169). Either way, we are speaking of his being able to produce a Book in a matter of 13 or 23 days, depending on the work-rate one assumes for composition.

Does this bring one any closer to deciding whether the *NH* was composed between the end of May 72 and the end of 78, or about April 76 to the end of 78? Let us take the first case first. It is interesting to notice that the subject matter of the *NH* divides naturally into six parts: (i) Cosmology (Book 2) and terrestrial geography (Books 3-6); (ii) Man (Book 7) and other animals (Books 8-11); (iii) Botany (Books 12-19); (iv) Botany in medicine (Books 20-27); (v) Zoology in medicine (Books 28-32); (vi) Minerals and Stones (Books 33-37). Now let us, merely for the sake of argument, impose a rigid time-table upon this. What we produce is the following schedule for composition:

<u>Year</u>	<u>Subject-Matter</u>	<u>Books written</u>
72 (half year)	Cosmology and Geography	5
73	Man and Animals	5
74	Botany	8
75	Botany in Medicine	8
76	Animals in Medicine	5
77	Metals and Stones	5

Figure 14

This is highly artificial, of course, and I am not suggesting that Pliny actually did work to this time-table. But it provides a useful model to illustrate the possibilities of a composing work-rate and what this means in terms of word-count and rates of composition can be seen in Appendix 5. For at the rate of one Book in a fortnight, he would have needed only 10 or 16 weeks in a particular year to fulfil the above 'quota', and at the rate of one Book in 3.5 weeks, he would have needed only 17.5 or 26 weeks. Bearing in mind that sizeable sections of the botanical Books consist of lists or recipes and need not have taken up much of Pliny's time, however much they may have required of his secretaries', one can suggest that the figures of 16 and 26 weeks are actually inflated. Nor does the half year of 72 present a problem. June to December can easily accommodate 10 or even 16 weeks of composition. Moreover, the scheme leaves out of account 78 which may also have been available to Pliny.

So if one is suggesting the longer period for composition of the *NH*, it looks as though Pliny would be able to proceed at a pace which could hardly, under any circumstances, be called prodigious.

But what of the shorter period? Once again, let us impose a strict time-table for the sake of illustration, bearing in mind that this does depend on the availability of 78 for completion of the work.

<u>Year</u>	<u>Subject-Matter</u>	<u>Books written</u>
76 (eight months)	Cosmology, Geography, Man and Animals	10
77	Botany and Botany in Medicine	16
78	Animals in Medicine, and Metals and Stones	10

Figure 15

The division of subjects into self-contained blocks is not quite as neat here, but the work-rate is simply double that of the longer period: 10 Books in 20 or 36 weeks, 16 Books in 32 or 56 weeks, and 10 Books in 20 or 36 weeks again. The 56 week period is impossible for a single year, of course, but I am not suggesting that Pliny wrote to a rigid *schema*, anyway. Moreover, the lengthier times, especially for the botanical Books, are over-long. The year 78 would have to provide time for the compilation of Book 1, which means, of course, that the *NH* must have been finished before that and, indeed, before the end of the year, since Pliny could not have addressed Titus as 'sexies consul' in 79. But periods of twenty or thirty-two weeks are still perfectly feasible as times of composition—much less leisurely than the other model, but perhaps more consistent with the picture one has of Pliny eager to devote every spare minute of his private time to research and study.¹

It should be noted that the shorter period leaves Pliny very little time for extensive research during composition, although he would probably have had better facilities in Italy while he was Prefect than while he was procurator abroad. We must therefore suppose (a) that his material had been largely collected by the time he began, (b) that he employed secretaries to undertake a sizeable amount of the necessary research for him, (c) that he already had a large body of research-work on

¹ Cf., Porcius Latro: 'cum se ad scribendum concitaverat, iungebantur noctibus dies, et sine intervallo gravius sibi instabat, nec desinebat nisi defecerat', Seneca the Elder: *Controversiæ* 1 *præf.* 13-14. Cicero says that Cato used to read a book in the Senate House while he was waiting for senators to arrive, *De Finibus* 3.7. This did not go down well with others who criticised him for it. Secundus produced a biography of Julius Africanus and his friends hoped for many more similar volumes, even though Secundus was a busy lawyer at the time, Tacitus: *Dialogus* 14.

certain topics and therefore needed to bone up quickly on those other topics where knowledge and notes were lacking. This last best fits the facts as we have them reported by Pliny the Younger—that his uncle had extensive *commentarii* by the time he was procurator in Spain and that they had been much added to since then; and that he himself read and took notes, as well as asking secretaries to undertake work (*Ep.* 3.5.17 and 10-13).¹

The younger Pliny gives the impression that his uncle always worked incessantly and at top speed. Perhaps, of course, he did. But perhaps he did not—at least, not as extraordinarily hard as it seemed to the seventeen year old youth—and increased his pace enormously simply because he was doing extra research for the *NH*, a work which he wished (for whatever reason) to produce as soon as possible. If this were so, it would undoubtedly account for the rate which his nephew found prodigious.²

Conclusions

(i) Pliny's daily time-table in Rome differed little in broad outline from the regular daily time-table followed by most Romans of his class. His time-table in the country, likewise, was probably similar to theirs.

¹ Cf., Dio Cassius who spent ten years gathering material for his *History* before settling down to write it ten or twelve years later. See Millar: *Cassius Dio*, 30 and 32. Livy worked for over forty years at the rate of at least ten books every three years, Walsh: *Livy*, 9. Luce: 'by and large Livy worked through his material quickly and wrote it up quickly . . . There is no way of proving this, but it is the simplest and most obvious explanation of the infelicities, contradictions, and doublets', *Livy*, 187.

² Syme (*RP* 1.415) says of Livy, Postulating a continuous period of regular labour for nearly forty-five years . . . some scholars have deduced an average output of about three books a year. But the author's rhythm may not have been steady or unbroken. Nor is there anywhere a sign to show that he spent as much as four months on any single book . . . It would be a bold man who argued that Livy needed more than two or three weeks to produce Book 31.

Cf., Pelling on Plutarch. '[His] research for these six Lives was systematic, sensible, and quite extensive; but the whole production might still be a comparatively speedy process . . . [and] probably occupied months rather than years', *JHS* 99 (1979), 96. See further Appendix 9.

(ii) It was common practice for Romans to use early and late hours of the day, meal times, bath times, and travelling time to write letters or verses, or to read. Pliny differs only in the fact that he made *regular* use of these times for the purposes of study or composition.¹

(iii) Cicero's work-rate of 45 BC may help to provide a model for Pliny. At the rate of between 1,500 and 2,500 words per day, Pliny could have finished the *NH* between mid-72 and the end of 78 at a leisurely pace, or between mid-76 and the end of 78 at a busier. Authors, especially busy ones, may well not work regularly or steadily, of course.

On balance, I am inclined to favour 76-78 as the more likely composition-period, since it creates just those conditions of work consistent with Pliny the Younger's description of his uncle. Such an inclination brings with it two questions. First, why would Pliny have been in such a hurry? Suggestions have been made that something had proved amiss with his continuation of the *Historiæ* of Aufidius Bassus, and that the *NH* was rushed out to smooth over a potentially embarrassing *gaffe*, (*supra*, pp. 99-100). Secondly, what resources did Pliny have for the prosecution of his research? These will be discussed further in Chapter 4.

¹ What can be achieved by regularity of endeavour is well illustrated by Trollope who wrote:

Three hours a day will produce as much as a man ought to write. But then he should so have trained himself that he shall be able to work continuously during those three hours ... It still is my custom ... to write with my watch before me, and to require from myself 250 words every quarter of an hour. I have found that the 250 words have been forthcoming as regularly as the watch went.

Autobiography, 217.

IV

Resources Available to Pliny for Research

The preceding investigations have enabled one to make suggestions about Pliny's career and about alternative periods within which he could have composed the *NH*. What one needs to do now is to look at the ways in which Pliny collected his material and put it together.

Let us begin, therefore, with other ancient writers' practice, in as far as this may be determined, to see if it sheds light on Pliny. Cicero, for example, with the pre-formed notion of writing a text-book on rhetoric, said:

non unum aliquod proposuimus exemplum cuius omnes partes, quocumque essent in genere, exprimendæ nobis necessarie viderentur; sed, omnibus unum in locum coactis scriptoribus, quod quisque commodissime præcipere videbatur excerpimus, et ex variis ingeniis excellentissima quæque libavimus, (*De Inventione* 2.4.4).¹

Diodorus Siculus describes his method of preparing his *Historiæ* thus:

διὸ καὶ διερριμμένων τῶν τε χρόνων καὶ τῶν πράξεων ἐν πλείοσι πραγματείαις καὶ διάφοροις συγγραφεῦσι δυσπερίληπτος ἢ τούτων ἀνάληψις γίνεται καὶ δυσμνημόνευτος. Ἐξετάσαντες οὖν τὰς ἐκάστου τούτων διαθέσεις ἐκρίναμεν ὑπόθεσιν ἱστορικὴν πραγματεύσασθαι τὴν πλεῖστα μὲν ὠφελῆσαι δυναμένην, ἐλάχιστα δὲ τοὺς ἀναγινώσκοντας ἐνοχλήσουσαν, (1.3.5).

In Diodorus's case, the impulse for composition was divided. He began observing that historians are held in some esteem (1.3.1) and then, after consulting various authorities, decided to write his own account and planned it in the light of his extensive reading.²

Wide preliminary reading is a claim made quite frequently by ancient authors. *Ælian*, for example, says, ἐγὼ δὲ ταῦτα ὅσα οἶόν τε ἦν ἀθροίσας, *NA, præf.*; and Dio Cassius's *Roman History* opens with the remark that, ἀνέγνω μὲν πάντα ὡς εἰπεῖν τὰ περὶ αὐτῶν τισι γεγραμμένα, συνέγραψα δὲ οὐ πάντα ἀλλ' ὅσα ἐξέκρινα, (1.2). Small wonder, then, that Valerius Maximus, bearing in mind

¹ One can see a similar process at work when he was contemplating other books, since he frequently wrote to Atticus, asking him if he could borrow preliminary reading-material. See *Ad Atticum* 2.2.2 = SB 22; 2.3.4 = SB23; 2.4.1, 3 = SB 24; 2.6.1 = SB 26; 2.7.1 = SB 27.

² Cf. *legendis auctoribus, qui sunt innumerabiles [tempus] datum est*, Quintilian: *Institutio*, Introductory Letter to Trypho, 1. Cicero: *Ad Atticum* 12.14.3 = SB 251. Seneca: *Dialogi* 12.1.2.

the labour of long research, tried to assist future writers by putting together a collection of about a thousand stories and anecdotes culled from a wide range of authors (*Facta et Dicta*, preface to Book 1).¹

Pliny himself is more explicit than any of these.

Viginti milia rerum dignarum cura ... lectione voluminum circiter duorum milium, quorum pauca admodum studiosi attingunt propter secretum materiæ, ex exquisitis auctoribus centum inclusimus triginta sex voluminibus, adiectis rebus plurimis quas aut ignoraverant priores aut postea invenerat vita', (*NH*, *præf.* 17).

Two thousand volumes sounds like a huge number, but one must try to keep it in perspective. First, *volumen* refers to a scroll and is not to be confused with the modern 'book' which tends to carry with it a certain notion of length; and secondly, two thousand scrolls may represent little more than one man's personal library. When the House of the Papyri at Herculaneum was excavated in 1752, for example, the explorers uncovered a small room about twelve feet square lined with bookshelves, which could have held up to 1,600 volumes either on the shelves or in pigeon-holes or in boxes.²

These examples, then, illustrate the following points: (i) an author tended to claim that he had read widely before embarking on a particular piece of work; (ii) this reading was usually undertaken with a specific end in view; (even Diodorus who says he made up his mind how to write his *History* after reading the histories of other people, ἐξετάσαντες ... ἐκρινάμεν implies that he *intended* to write some kind of historical work, before he began his reading). A further point is that notes of

¹ Not everyone gives an indication of his reading, let alone makes a claim to have explored a large number of sources. Neither Sallust nor Tacitus does so, for example. On the other hand, Seneca might be added to the list of those who did make an effort to read widely before starting to write; see Hine: *Seneca, Natural Questions, Book Two*, 56. Livy is not so easy to categorise. Luce says that he certainly did read extensively, *Livy*, 183 and Ogilvie makes the claim that Livy himself claimed to have read all the available Greek and Roman annals, *Commentary on Livy*, 5. This is perhaps stretching the evidence too far. Book 32.6.8 says merely, 'ceteri Græci Latinique auctores quorum quidem ego legi annales etc', and 7.21.6, 'ut per omnium annalium monumenta' cannot be taken at face value, as acquaintance with Livy's method of attribution makes perfectly clear. Walsh: 'In citation of sources, the historian tends to exaggerate the number consulted, speaking of *auctores* where *auctor* would be more accurate', *Livy*, 142.

² M. Brion: *Pompeii and Herculaneum*, 187-88. For numbers, Kleve-Stoermer: *Cronache Ercolanesi* 7 (1977), 126. The precise number of books is a matter of disagreement. Six hundred is the lowest estimate, sixteen hundred the highest. The discrepancy, as Kleve and Stoermer say, may represent the difference between the total number of surviving rolls and the number which has actually been unrolled.

some kind were made for future use. This last point can be illustrated from various sources. Plutarch introduced his essay *De tranquillitate animi* by observing to Paccius, its dedicatee, that he had only just received Paccius's request for something original on peace of mind, and a commentary on the more obscure sections of the *Timæus*. As he had very little time in which to put something together he improvised: ἀνελεξόμην περὶ εὐθυμίας ἐκ τῶν ὑπομνημάτων ὧν ἐμαυτῷ πεποιημένος ἐτύγχανον, (*Moralia* 464f) Such a collection seems to have arisen from Plutarch's natural habit of excerpting while he read: καὶ συνάγειν ἅει πειρώμαι καὶ ἀναγινώσκειν οὐ ταῦτα δὴ μόνον τὰ τῶν φιλοσόφων ... ἀλλὰ μᾶλλον τὰ τῶν βασιλέων καὶ τυράννων, (*Moralia* [De cohibenda ira 9] 457d). Notice ἀεί.¹ Marcus Aurelius read like a Trojan during one short period: 'feci tamen mihi per hos dies excerpta ex libris sexaginta in quinque tomis', (Fronto: *Epistulae* 2.8.3).² Lucian's advice to a would-be historian was to collect as many facts as possible, put them down in the form of a ὑπόμνημα, and then write up a polished version later, (*Quomodo historia conscribenda est* 48). Aulus Gellius is frank about the way he composed *Noctes Atticae*: 'usi autem sumus ordine rerum fortuito, quem antea in excerpendo feceramus. Nam proinde ut librum quemque in manus ceperam ... vel quid memoratu dignum audieram, ita quæ libitum erat cuius generis cumque erant, indistincte atque promise annotabam', (*Præf.* 2); and he adds later that these notes and *excerpta* of his were chosen with care, as opposed to the collections (presumably he means published collections) of others, especially the Greeks, who noted and excerpted everything without discrimination, (*Præf.* 11-12).³

Both Plinys were accustomed to make *excerpta* from their reading (*Ep.* 3.5.10; 6.20.5) and in due time I shall return to make a more detailed discussion of what *adnoto* and *excerpta* appear to have meant. For the present, however, let it simply be observed that neither man was doing anything unusual in either practice. Making *excerpta* from one's reading, and publishing collections of such *excerpta* for other people's education, delight, or convenience was well established by the time Pliny came to composing the *NH*. So was extensive reading—or at least the claim for

1 An excellent study of Plutarch's method of work in his composition of six of the Roman *Lives* has been made by Pelling: *JHS* 99 (1979), 74-96. Therein he suggests that there were three stages of composition: (i) preliminary reading, (ii) *ὑπομνήματα* or *ὑπομνήματα*, (iii) finished version. See *op. cit.*, 95.

2 Teubner ed. Van den Hout. On the Emperor's methods of excerpting, see further Rutherford: *The Meditations of Marcus Aurelius*, 29.

3 Cf., Philostratus who mentions a variety of materials by Herodes, including collections of excerpted passages (*καίρια*); *Vitæ Sophistarum*, 1.565. Galen, too, excerpted recipes from his Hellenistic predecessors for his book on drugs. See Jackson: *Doctors and Diseases*, 64. Cornelius Nepos also composed several volumes of *exempla*, since Aulus Gellius gives a quotation from Book Five, *NA* 6.18.11.

such—and thus it appears we should suggest that Pliny was no different from other people in conceiving the idea for a work before embarking upon the reading for it. Two considerations should give one pause, however, before coming to that conclusion. First, everyone's motive for writing a book is personal, and just because the limited information we have about a few authors from a very wide stretch of time seems to suggest a pattern, that is no reason for supposing that Pliny *must* have fitted into it. Secondly, an encyclopædia is a different type of work from a handbook on rhetoric, a history, or a philosophical treatise. Its nature is diverse, its material wide-ranging, and although the whole work may well have a unifying theme—as, it can be argued, does the *NH*—nevertheless, it is difficult (though not, of course, impossible) to envisage a man's *setting out* to write an encyclopædia as he might set out to write a history, however extensive the history might be. Pliny may have had the *NH*, or something like it in mind for many years before he put pen to papyrus, but he may equally well have rushed it together in a tumble of activity from material already available in his notebooks.

Sources of Information

Meanwhile, let us look at the various possible sources of his information.

These are five:

- (i) libraries, both public and private,
- (ii) archives,
- (iii) maps,
- (iv) autopsy,
- (v) oral evidence.

(i) LIBRARIES

(a) *Public libraries*

Plutarch observed that anyone who wanted to write a *History* whose source material was likely to be both obscure and difficult to obtain ought to live in a large city wherein he might have access not only to plenty of books but also to men's collective memory of the past (*Demosthenes* 2.1). This reminds one of Polybius who criticised Timæus for reading books only and not collecting evidence of history from witnesses who were still alive, and who went on to say that book-learning was easy provided one had access to a town rich in documents or to a library near at hand (12.27.3-4). Among the Romans, Julius Cæsar had intended to open up large public

libraries to the general public,¹ and assigned to Marcus Varro the task of creating and classifying a new public collection. Death, however, intervened and so it was Asinius Pollio who actually opened the first public library in Rome. It was housed in the *Atrium Libertatis* near the Forum and later, in company, it seems, with most libraries whether public or private, accumulated works of art as well as books. Its collection contained not only Latin volumes but also Greek.²

Augustus then made room for what was to become one of the principal libraries in Rome in one of the colonnades of his new Temple of Apollo, adjoining his own house on the Palatine. This, too, contained both Greek and Latin books, apparently kept separate since we are told of a *bibliotheca Græca* and a *bibliotheca Latina* which together made up the total collection. One of his freedmen, Hyginus, was put in charge of it and it is likely that this is the same Hyginus whom Pliny used as one of his sources for seventeen Books of the *NH*.³

Another library was to be found in the Porticus Octavia near the Theatre of Marcellus, another foundation made during the reign of Augustus. It, too, had a separate *bibliotheca Græca* and *bibliotheca Latina* and, like Pollio's library, contained a number of famous statues.⁴ Tiberius accommodated a library in the temple he built for the deified Augustus somewhere on the north-west side of the Palatine. Now, it is possible that both the Augustan and the Tiberian libraries were destroyed during the great fire of July 64. There is no direct evidence of this anywhere in the surviving literature, but Tacitus, echoed by Dio Cassius, does say that the Palatine, the Imperial palace and everything around them were consumed by the flames. He

1 One must be careful not to assume that 'general public' meant the same in the first century AD as it does now. The number of those desirous of making use of large reading facilities, or indeed able (whether meaning 'well enough educated' or 'entitled by civic or personal status') to do so, is likely to have been limited. See further Rawson: *Intellectual Life*, 45-51. She is talking principally about book-readers rather than book-borrowers. See further, R. J. Starr: *CQ* 37 (1987), 217-18. Harris: *Ancient Literacy*, 227.

2 Suetonius: *Iulius* 44. Pliny: *NH* 7.115; 35.10. Works of art, Pliny: *NH* 36.23, 24, 25, 33, 34. Greek and Latin works, Isidore: 6.5.1-2. See also Ovid: *Tristia* 3.1.67.

3 Suetonius: *Augustus* 29. Dio Cassius: 53.1. Horace: *Epistulæ* 2.1.214-18; 3.16. Ovid: *Tristia* 3.1.59-68. Greek library, *CIL* 6.5188. Latin library, *CIL* 6.5884. The position of the Library in relation to the temple and the palace is a matter for continuing discussion. See, for example, Lefèvre: *Das Bild-Programm des Apollo-Tempels auf dem Palatin*, figures 6, 7, and 9. Hyginus, Suetonius: *De Grammaticis* 20. Pliny cites him as a source for Books 3-6 and 10-22. Dix suggests that the books may have been largely legal and political works, *Public and Private Libraries at Rome*, 113.

4 Plutarch: *Marcellus* 30.6. Dio Cassius: 49.43. Ovid: *Tristia* 3.1.69. *CIL* 6.5192. Greek library, *CIL* 6.2348. Latin library, *CIL* 6.4431. Statues, Pliny: *NH* 36.22, 24.

does not, however, enumerate in precise detail all those buildings and artefacts lost to the conflagration.¹ So it is possible that their collections perished and had to be replaced. Certainly both the Tiberian Library and the Octavian were burned either during Vespasian's reign or that of Domitian; but Domitian restored them both at very great expense. Vespasian also created a library, housing it in his newly restored Temple of Peace, with separate Greek and Latin sections.²

From where were these books acquired? According to Suetonius, Julius Cæsar wanted 'bibliothecas Græcas Latinasque quas maximas posset publicare data Marco Varroni cura comparandarum ac digerendarum, (*Iulius* 44.2). The implications are clear. Varro was to collect, purchase, or otherwise obtain ('comparare') the books and then classify them in some fashion ('digerere').³ It sounds as though we are talking about a new foundation altogether and not simply

¹ Tacitus: 'neque tamen sisti potuit quin et Palatium et domus et cuncta circum haurirentur', *Annales* 15.39. 'Domuum et insularum et templorum, quæ amissa sunt, numerum inire haud promptum fuerit', *Ibid.*, 41. He goes on to mention specific places, to which he adds trophies, works of art, and 'monumenta ingeniorum antiqua et incorrupta', which may perhaps refer to the contents of the Palatine library. Dio Cassius: τό τε γὰρ Παλάτιον τὸ ὄρος σύμπαν, 62.18.2. It is possible that Pliny makes a reference to this fire when he notes the distillation of cinnamon in Augustus's temple, 'donec id delubrum incendio consumptum est', *NH* 12.94.

² Suetonius: *Tiberius* 74. Pliny: *NH* 34.43. Dio Cassius: 6.24. Suetonius: *Domitian* 20. Vespasian, Aulus Gellius: *NA* 16.8.2. Galen: *De comp. med.* 1.1. Gellius also mentions a library in what he calls the 'domus Tiberii', but whether this refers to that in the Temple of Augustus or to a separate institution is not quite clear. The latter is perhaps more likely, otherwise he would surely have called its house the 'Templum Novum' or 'Templum Augusti'. The architectural form and lay-out of these libraries is discussed in E Makowiecka: *Origins and Evolution of Architectural Form of Roman Library = Studia Antiqua*, (Warsaw, 1978), 30-9, 43-9. There is a plan of the Palatine library in figure 2 on p. 32. On libraries in general, see further Dziatazko in *PW* 3.415-21 s.v. 'Bibliotheken'; Clark: *The Care of Books*, 12-15; Platner-Ashby: *Topographical Dictionary*, 84-5. Rawson: *Intellectual Life*, 39-42. There is, however, an extensive literature on this subject, and the best general treatment along with an up-to-date bibliography (1986) is Dix: *Libraries*, 191-249 (public libraries). E. D. Johnson: *History of Libraries in the Western World*,² (Metuchen, 1970) is, however, still a standard work of reference.

³ Cf., Seneca: 'digerere in litteram senes orbos', *Epistulæ* 68.10. Books may have been presented. See Martial: 12.3.1-4 which could refer to the Palatine library. Cicero alone illustrates the various ways in which a collection could be built up through purchase, gift, and inheritance. See Dix: *Libraries*, 99-102, 107. There was also a flourishing book-trade. See R. J. Starr, *CQ* 37 (1987), 219-223 and *Phœnix* 44 (1990), 148.

the opening up of an existing collection to the general public.¹ It also looks as though Greek and Latin books were kept separate right from the start, a perfectly understandable arrangement.

The word βιβλιοθήκη, and therefore by extension *bibliotheca*, referred principally to a collection of books;² but it could also mean the room in which they were kept, or the shelves within such a room.³ Canfora envisages the Library of Alexandria as consisting of a bookshelf running the length of a wall of a large room; and this is also the picture one should probably envisage for the Palatine Library—'one large hall subdivided into Greek and Latin sections'.⁴ Books were kept not only *in bibliothecis* but also *in nidis* (pigeon-holes), *in forulis* (receptacles of a similar kind), *in loculamentis* (similar, again, to the preceding), *in pegmatibus* (shelves), and *in pluteis* (again, shelving)—that is to say, libraries consisted of 'rows of shelves standing against the walls (*plutei*) or fixed to them (*pegmata*). The space between these horizontal shelves was subdivided by vertical divisions into pigeon-holes (*nidi*, *foruli*, *loculamenta*), and it may be conjectured that the width of these pigeon-holes would vary in accordance with the number of rolls included in a single work'.⁵

How many volumes were there in these libraries? It is not possible to give more than a highly conjectural answer. Seneca writes disparagingly of the rich bibliophile who sits yawning 'inter tot milia librorum', and if we bear in mind the 600-1,600 books of the private library in Herculaneum and the noteworthy 30,000

¹ *Publicare*, as I have already suggested on p. 195, note 1 *supra*, must have had a restricted meaning. Private libraries were also open, but to an even more limited extent. When Plutarch observes that Lucullus's library in Tusculum was open to everyone (πᾶσι), he means all those Greeks from Rome, who wanted to use it as a meeting-place where they could relax and chat to their fellow-countrymen:

ἀνειμένων πᾶσι τῶν βιβλιοθηκῶν, καὶ τῶν περὶ αὐτὰς περιπάτων καὶ σχολαστηρίων ἀκωλύτως ὑποδεχομένων τοὺς Ἕλληνας ὡς περ εἰς Μουσῶν τι καταγωγίον ἐκεῖσε φοιτῶντας καὶ συνδιημερεύοντας ἀλλήλοις, ἀπὸ τῶν ἄλλων χρειῶν ἀσμένως ἀποτρέχοντας
Lucullus, 42.1.

² Polybius: 12.274. Strabo: 13.1.54. Josephus: *AJ* 12.2.1. Posidonius, fr. 253.150 [Kidd]. Cicero: *De Oratore* 1.195; *Ad Familiares* 13.77.3 = SB 212; *Tusculanæ* 2.6. Seneca: *Dialogi* 9.9.4. Petronius: 48.4. Martial: 7.17.1

³ Pliny: *Ep.* 2.17.8. Cf., perhaps Vitruvius: 6.4.1. Ulpian in *Digest* 30.1.41.9. Cf., Cratinus Junior fr. 11.

⁴ Canfora: *The Vanished Library*, 77-8. Quotation from Richmond: *JRS* 4 (1914), 201. For the location of the library *vis-à-vis* the temple and the *domus* see Richmond, *art. cit.*, 201 and figure 26, and the article by Lefèvre cited on p. 195, note 3 *supra*.

⁵ Clark: *Books*, 34. I am indebted to Clark (30-33) for the identification of the Latin terms.

which Pliny's contemporary, Epaphroditus, is supposed to have possessed, we may be justified in suggesting that when private collections could run to hundreds or even thousands of scrolls, so too, surely, did public.¹

As for the kind of works kept therein, once more no answer is possible. Ovid speaks of

quæque viri docto veteres cepere novique
pectore, lecturis, inspicienda patent
(*Tristia* 3.1.63-4)

to be found in the Palatine Library, from which we may infer that the works of older as well as modern writers were available there, an impression which is confirmed by Horace, *Epistulæ* 1.3.15-17; and the scholiast to Juvenal, 1.28 indicates that they covered civil law as well as the 'liberal arts' by which, if we may trust Hipparchus, were meant mathematics, music, literature, poetry, natural sciences, ethics, and public affairs.² Censorship, however, made sure that Cæsar's *juvenilia* and Ovid's erotic works were not available.³

Arrangements seem to have been made for the over-all supervision and arrangement of books in the Palatine Library and therefore presumably in the others also. A *procurator bibliothecarum Augusti* acted as chief librarian, so to speak, with two assistants, one for the Greek collection and one for the Latin.⁴ How the books

¹ Seneca: *De tranquillitate animi* 9.6. Herculaneum library, Gallo: *Greek and Latin Papyrology*, 36. Kleve-Stoermer: *Cronache Ercolanesi* 7 (1977), 126. Rawson makes an important point. 'The importance of catalogues suggests that the number of books [in Cicero's collections] might be considerable, and perhaps that outsiders would use them', *Intellectual Life*, 40. The observation may be applied equally well to public libraries. Epaphroditus, Suidas: s.v. Cf., the entry *Ibid.*, s.v. 'Tyrannion' in which this Greek of the first century B. C. is also credited with a personal library of 30,000 volumes. Is this coincidence or mistake? Cicero refers to his own library as a 'festiva copia', [*Ad Atticum* 2.6.1 = SB 26] and 'tantum librorum', *De Finibus* 3.10; and to the library of Lucullus as 'maxima copia', *Ibid.*, 3.7. Festus defines 'bibliotheca' as such a large number of books that the word is applied also to the place where they are kept, *De Verborum Significatu* 34 s.v. 'Bibliothecæ'.

² Cicero: *De Oratore* 3.127. Dix: *Libraries*, 113. Rawson: *Intellectual Life*, 117.

³ Rawson: *op. cit.*, *supra*, 42. Apuleius, on the other hand, indicates that his knowledge of magical writers and their works was picked up during the course of reading 'very well-known authors' (*apud clarissimos scriptores*) in the public libraries, *Apologia* 91.2. Cf., *Ibid.*, 41.4 re his reading of Aristotle. See further Dix: *Libraries*, 82-3, 112, 200, 208, 210, 220.

⁴ Clark: *Books*, 18. He says the information comes from inscriptions, but gives no references thereto. For these, see *PW* 3.418. See also Sherwin-White, *PBSR* 15

were catalogued is not known, but there are one or two pieces of evidence relating to other libraries which may be suggestive. Callimachus, for example, produced a kind of bibliographical guide to Greek literature in 120 Books, which appears to have divided literature into ten classes and then arranged authors in alphabetical order according to their appropriate class.¹ This, it is true, related to the Library at Alexandria, but we find hints of a somewhat similar arrangement in Ovid who says, in an address to his own book,

cum tamen in nostrum fueris penetrale receptus...
aspicies illic positos ex ordine fratres;²

and Cicero indicates that his books have been put into some kind of planned order, when he writes to Atticus, saying, 'offendes dissignationem Tyrannionis mirificam librorum meorum'.³ Division into Greek books and Latin, then, and subdivision of these into classes are likely features of public libraries in Rome, and perhaps an alphabetical arrangement of authors within these classes, too. Hard evidence for anything except separation of Greek scrolls from Latin, however, is rather slim.⁴

Those who used the libraries seem to have been private individuals pursuing personal scholarship; writers, both Greek and Roman; public figures improving their knowledge of history and law; freedmen and a few women.⁵ It is difficult to know to what extent they were allowed to borrow books. When Aulus Gellius stayed with a rich friend in Tibur, he became engaged in conversation with a second guest, a

(1939), 23-4. Johnson: *Libraries*, 81-2. Martial, 5.5.1. C. Melissus was put in charge of the Octavian library by Augustus. See Suetonius: *De Grammaticis*, 21.2. It has been argued that Tacitus was, for a while, librarian to Titus. See Reed, CQ 26 (1976), 309-14. Private libraries, as one might expect, had at least one person in charge. There must have been a librarian looking after Sulla's books, for example, because Tyrannio managed to get hold of some of them by flattering him. See Strabo 13.1.54. See also Dix: 'Cicero seems to have assigned the care of his library on an *ad hoc* basis to members of his household who, although educated, had been trained principally to perform some other task', *Libraries*, 133. Van't Dack: *Historia* 12 (1963), 174-84.

¹ Callimachus: *Pinakes* frs. 429-53 (Pfeiffer), and Pfeiffer: *History of Classical Scholarship*, 128-9.

² *Tristia* 1.1.105 and 107.

³ *Ad Atticum* 4.4a.1 = SB 78. Cf., *Ibid.*, 4.8.2 = SB 79, and 'requiro ... omnem totius operis dissignationem atque apparatus', *De Natura Deorum* 1.20. Both pieces of Latin evidence refer to private collections, but if these were arranged according to some kind of plan, it is hardly likely that public libraries were allowed to exist higgledy-piggledy. See also Segre: *RFIC* 13 (1935), 214-25.

⁴ See further Johnson: *Libraries*, 82. Rawson makes the interesting observation, 'we meet no complaints in the surviving literature that a particular book is impossible to track down', *Intellectual Life*, 44.

⁵ Rawson: *op. cit.*, *supra*, 45-50.

Peripatetic philosopher. In order to illustrate from Aristotle a point he was making, the philosopher went off to the local library which was housed in the Temple of Hercules and came back with the relevant volume.¹ It is interesting that the rich host did not possess a copy himself but not, perhaps, surprising. The number of titles of books one possessed must have depended on one's personal inclination then, just as it does now. As far as the philosopher's ability to borrow, apparently at a moment's notice, is concerned, one may ask whether this was the kind of thing that could be done anyway or whether (perhaps more likely) the borrowing was permitted because the philosopher was a guest of the local rich man who was therefore known to the temple authorities and could act as a guarantor of respectability? Not every library, however, was so accommodating. A dedicatory inscription for the Library of Trajan in Athens says: βιβλίον οὐκ ἐξενεχθήσεται ἐπεὶ ὁμόσαμεν. ἀν(οι)γήσεται ἀπὸ ὥρας πρώτης μεχρὶ ἕκτης.² This is also the only indication we have of opening hours.

In Rome, then, Pliny may have been able to use four large public libraries: (i) the Palatine, (ii) the Octavian, (iii) the Tiberian, (iv) the *bibliotheca Templi Pacis*. If the Palatine and Tiberian were destroyed by the fire of 64, it would have taken time for them to build up their collections again. This is not to say, of course, that Pliny could not have used them before the fire. Vespasian's library will not have been fully operational until the dedication of the temple at the beginning of 75 but, once again, there is no reason to suppose that Pliny could not have had access to the collection as it was being put together. The division of books between separate Greek and Latin sections, which operated in the Palatine and Octavian libraries and may well have occurred elsewhere too, may account for Pliny's division of his named sources in Book 1 into *auctores* (Latin) and *externi* (Greek).

Does Pliny give any indication that he knew these libraries from personal visits? He mentions works of art—whether statues, paintings, or objects—which were to be seen there: (i) in the Temple of Apollo on the Palatine, in the collections (*monimentis*) of Asinius Pollio, and in the library, (ii) in the complex of buildings dedicated to Octavia, in the porticoes, in the *scholæ*, and in the *curia*, (iii) in Tiberius's Temple of Augustus and in the library; (iv) in Vespasian's Temple of Peace.³ Clearly

1 NA 19.5.1-4.

2 Smallwood: *Documents Illustrating the Principates of Nero, Trajan and Hadrian*, n^o 395(b) = *Hesperia* 5 (1936), 41-2 = SEG xxi 500. Shear comments, 'The strong prohibition against removing books possibly indicates the irritation of the librarian at the abuse of this privilege by readers', *Hesperia*, loc. cit., 42.

3 *Palatine*: 34.14, 43; 36.23, 24, 25, 32, 33-4. *Octavian*: 34.31; 35.114, 139; 36.15, 22, 28. *Tiberian*: 34.43; 35.28, 131. *Vespasianic*: 34.84; 35.74, 102, 109; 36.58.

he was well acquainted with the contents of the buildings in which the libraries were housed, and it is unlikely that he derived his knowledge of them entirely from books. We may presume, therefore, that he had seen many, if not all, these works of art for himself and that in consequence he may well have availed himself of the opportunities afforded by such visits to use or consult the libraries as well.

(b) *Public libraries outwith Rome*

The evidence for these is limited and belongs largely to periods after Pliny's death. Within Italy there may be the remains of a large public library in a building open to the forum in Pompeii, and we know that Pliny the Younger opened a new one at Comum and visited another in Prusa. In addition to the great collections in Alexandria and Pergamum, by the time of Apuleius and Aulus Gellius there is evidence of libraries in Tibur and Patræ, and we know of others at Tingad in Africa, Ephesus, Athens, Patræ and Lepcis Magna.¹ There had been public libraries a long time ago in Carthage, but these were split up between the petty chiefs of Africa at the end of the Punic Wars.² Harris makes an important point about the need for public libraries outwith Italy. Greek and Latin, he says, were spoken, and therefore read, by only a minority. 'A provincial community would in general have had no practical need for more than a limited number of people capable of conversing in one of the dominant languages.'³

As far as Pliny is concerned, then, had he wanted to pursue a particular course of reading in, say, Africa (as opposed, for example, to the more Latinised Hispania), he may have had to rely more on private than public facilities. Still, what does Martial mean when he says that everyone in Vienna reads him, (7.88.1-4)? Presumably his *tout le monde* refers to the limited Latin-speaking community; but there is no indication that his books were in public, as opposed to private ownership in that city. The situation for Pliny, therefore, remains uncertain. Our evidence tends to suggest that there may have been a growth in public libraries after rather than during the first century A.D., but the evidence is sparse and one must not draw too solid conclusions from it. The possibility remains, however, that once he was

¹ Pompeii: Richardson: *Archaeology* 30:6 (1977), 400. Comum: Pliny, *Ep.* 1.8.2. Prusa: Pliny, *Ep.* 10.81.7. Tibur and Patræ, Aulus Gellius: *NA* 9.14.3; 18.9.5. Tingad, Pfeiffer: *MAAR* 9 (1931), 157-65 and plates 16-19. Apuleius: *Apologia* 91.2. Pfeiffer also discusses the library at Ephesus on pp. 157 and 163. Athens, (see *supra* p. 199, note 2) See also Dziatazko, 'Bibliotheken', in *PW* 3.419-20. Strocka: *Gymnasium* 88 (1981), 309. Harris: *Literacy*, 228 note 279.

² Pliny: *NH* 18.22

³ *Ancient Literacy*, 176.

outwith Rome itself, Pliny may have had to place greater reliance on private rather than on public libraries.

(c) *Private libraries*

Most large private houses are likely to have kept books of some kind before ever the fashion for extensive personal collections caught on. Pliny refers to the family archives and records kept in the *tablinum*: 'tabulina codicibus implebantur et monumentis rerum in magistratu gestarum'. (*NH* 35.7), although the context makes it clear he was writing of Republican times. An influx of private foreign libraries, plundered during the first century B.C. and brought to Rome as part of the conqueror's booty, may have stimulated a certain interest among wealthier citizens and turned their thoughts to acquisitions of their own.¹

Whatever the motive, individuals certainly began to collect books, and in Cicero's letters we can follow his attempts to buy books both for himself and for his brother, Quintus.² According to Dix,

Cicero seems to have maintained sizeable collections of books in at least two locations, in the villa at Tusculum and the house on the Palatine at Rome from the 60s B.C. It is possible that these two collections differed in contents and purpose. For a period after his return from exile in 57, Cicero's entire collection was taken to his house at Antium for restoration, repair, and safe-keeping. Cicero probably inherited his father's library and continued to keep it at the family estate at Arpinum. He may have purchased the library of Faustus Sulla and, if so, housed it in his own *Cumanum*.³

The proliferation of private libraries, therefore, may have resulted in more collections and, indeed, more accessibility to collections than we realise.⁴

Both Pompeii and Herculaneum have yielded evidence of private libraries and we have several literary references to others; for increasing fashion produced increasing numbers of private libraries, some of them extensive, and inevitably the growth of these private collections began to attract disapproval and criticism from those who maintained that there is no point in owning more books than one can

1 Plutarch, *Æmilius Paulus* 28.6. *Sulla* 26.1. *Lucullus* 42.1.

2 *Ad Atticum* 1.7 = SB 3; 1.10.4 = SB 6; 1.4.3 = SB 9. He lost money, later on, to a thieving slave, *Ad Familiares* 13.77.3 = SB 212. *Ad Quintum* 3.4.5 = SB 24. Cf., Martial 4.33.1.

3 *Libraries*, 120. On repairs, see T. Dorandi: *ZPE* 50 (1983), 25-8.

4 Dix gives a list of eighteen owners of private libraries during the second and first centuries BC, *op. cit., supra*, 267-71. He also records another five possible owners.

read.¹ One can see, however, that extensive libraries would have been extremely useful, especially outwith the main urban areas of the Empire. Suetonius, for example, remarks that the study of literature was widespread in the Roman provinces, and it can be (indeed, has been) argued that the presence of libraries stimulated and spread Roman education throughout the surrounding region.²

The problem for us is that we may not be able to recognise a library on an archaeological site when we see it. Why is it, for example, that only one library appears to have been preserved at Herculaneum? Conditions have to be right for carbonisation—witness the survival of carbonised furniture—so since most of the appurtenances of a library will have consisted of perishable or combustible materials, it is perhaps not surprising that if these were destroyed leaving only the room behind, excavators may have little or no guide to tell them what the room had been used for once.

There is an example in a fourth century AD house on the Esquiline. A large room, undecorated up to a certain height but then beautifully decorated above in stucco-work, was designated a library by its nineteenth century discoverer on the grounds that large medallions, of which only the frames are well-preserved, once contained the portraits of famous people and that the blank walls below had been

1 Pompeii. The House of Menander. Richardson observes: The room at the end of [one] wing is squareish; it was undecorated in the last period of Pompeii and fitted with shelves, a store-room. But there is a mosaic pavement of the period of the Second Style in which panels set off spaces where substantial pieces of furniture once stood against the back wall and east wall ... In view of the proximity of a reading alcove, I believe large cabinets for a library must originally have filled these spaces. *Archaeology* 30:6 (1977), 398. Strocka, *Gymnasium* 88 (1981), 300 and plate XIII. Herculaneum. M. Gigante: *Cronache Ercolanesi* 15 (1985), 5-30. Strocka, *op. cit.*, *supra*, 298-9. F. L. Auricchio and M. Capasso: *Cronache Ercolanesi* 17 (1987), 37-47. Collections. Aulus Gellius, *NA* 3.10.17 (referring to Varro). Pliny: *Ep.* 3.7.8; 4.28. Martial, *præf.* to Book 9; 7.17; 14.190. Petronius: *Satyricon* 48.4. Criticism. Seneca, *De Tranquillitate Animi* 9.4-7. Lucian: *Adversus Indoctum*. [The whole story is a diatribe against pretentious and unintellectual book-collectors]. Libraries in private houses were supposed to face East so they might catch the morning light, Vitruvius: *De Architectura* 1.2.7; 6.4.1; 6.7.3. Not everyone's motive for having a personal library was suspect. Pseudo-Plutarch thought such a thing was capable of being an important educational tool, *Moralia* ('De liberis educandis', 10) 8b.

2 Suetonius: *De Grammaticis* 3. F. H. Stanley: *REA* 93 (1991), 316, 317-18. Note also pseudo-Plutarch's point, *supra*.

hidden by furniture containing books.¹ This is guesswork, of course, but one can see how easy it must be to miss recognition of an erstwhile library.

Books were acquired in three different ways: (i) one received copies of one's friends' literary endeavours; (ii) one borrowed a book and had it copied; (iii) one could buy them, whether via the agency of friends, as we have seen Cicero doing, or directly from bookshops.²

The range of books to be found in these private libraries must have depended upon the current educational programme (which designated certain authors as 'Classics', Homer and Vergil being the most obvious examples), personal taste, and the actual availability of books, a consideration worth bearing in mind since, although books themselves were quite hardy and therefore long-lasting, creatures such as mice, fire, and chance whether separately or together diminished the number of volumes of any particular author in circulation at any particular moment. As Russell has pointed out in connection with Plutarch, for example, libraries 'contained only a chance selection of the enormous possibilities' and

few books existed in many copies. It follows, [therefore], that an individual scholar could only hope to see a few books that he had heard of; and from this it was inevitable that he should often repeat opinions and references at second or third hand. To be able to cite impressive references (*marturia*) conferred prestige.³

Thus, Pliny's 'viginti milia rerum' collected from 'voluminum circiter duorum milium' were actually culled from only 'auctoribus centum' (*Præf.* 17) and we shall return to this matter of authors later, (See p.304). It is obvious, however, that

¹ Reported in Clark: *Books*, 22-3. Note also the tentative way in which Richardson has identified the library in Pompeii, *Archaeology* 30:6 (1977), 398: quoted above in p. 203, note 1.

² Presentation. Catullus 1.1. Tacitus, *Dialogus* 21.6 (referring to Cæsar and Brutus); Martial 7.17.1-6. Cf., 4.10.3; 4.72.1; 5.18.4l; 10.19.1-6. Juvenal 3.219 (replacement of books after a big fire). Borrowing. Cicero: *De Finibus* 3.2.7-8; 3.3.10. Scribonius Largus: *Compositiones* 97. Martial 1.117.1-4; 7.97. Copying. Quintilian: *Institutio* 10.1.57. Cf., Jackson: *Doctors and Diseases*, 64. Marshall, *Phœnix* 30 (1976), 253-4. Book trade. Starr, *CQ* 37 (1987), 219-23.

³ *Plutarch*, 42-3. When Rawson says 'we meet no complaints ... that a particular book is impossible to track down', (*Intellectual Life*, 44) she is no doubt correct. But such a complaint is not one we should expect to come across—it is uncommon in modern literature—and Russell's point about prestige is important. Confession of failure to find a work causes loss of face rather than conferring admiration.

collections such as the *Facta et Dicta* of Valerius Maximus would be invaluable to any author.¹ Plutarch made full use of them,² and we should not be surprised if Pliny did as well.

Analysis of literary remains from one or two private libraries indicates, as one might expect, a wide range of interests. Those in Oxyrhynchus during the first centuries BC and AD seem to have tended towards poetry rather than prose;³ the whole of Lucretius's work was present in one collection in Herculaneum,⁴ and Lucius Calpurnius Piso had a special interest in Philodemus as well as collecting works on medicine and literary criticism.⁵ The library of Lactantius contained no Greek classical prose or poetry, but did have oracular literature and anthologies, and an interesting range of Latin authors: (verse) Lucretius, Horace, Vergil, Ovid, Persius; (prose) Cicero, Livy, Sallust, Seneca, Valerius Maximus.⁶

Horace says he carted Plato, Menander, Eupolis and Archilochus into the country with him, presumably as inspiration for work he had in mind.⁷ We cannot be sure, however, that these were his own copies. He could easily have borrowed some or all from friends.⁸ Martial's series of epigrams 14.183-196 is intriguing. Ostensibly they are verses accompanying copies of Homer, Vergil, Menander, Cicero, Propertius, Livy, Sallust, Ovid, Tibullus, Lucan, Catullus and Calvus, which Martial was sending to friends and acquaintances. If they were real presentation-pieces, we may have evidence of how people filled gaps in their libraries. But, of

1 Valerius's work, indeed, was designed to save others trouble. 'Ab inlustribus electa auctoribus digerere constitui', he says, 'ut documenta sumere volentibus longæ inquisitionis labor absit', 1.1. See further Maslakov: *ANRW* II 32.1, pp. 437-57.

2 Russell: *Plutarch*, 26. Cf., Starr, *CQ* 37 (1987), 218. Dihle: *Greek and Latin Literature*, 65-6, 82. An exchange between Cicero and Cato illustrates the limitations of even a large private library. 'Tum ille [Cato], "tu autem cum ipse tantum librorum habeas, quos hic tandem requiris?" "Commentarios quosdam", inquam, "Aristotelios, quos hic sciebam esse"', *De Finibus* 3.10. Cf., his request to Atticus for books he needed for works still in the planning stage, *Ad Atticum* 4.14.1 = SB 88; 13.31.1 = SB 302; 13.32.2 = SB 305.

3 Kenyon: *JEA* 8 (1902), 131.

4 K. Kleve: *Croniche Ercolanesi* 19 (1989), 5.

5 For a detailed discussion, see M. Gigante: *La Bibliothèque de Philodème et l'épicurisme romain*, 34-70. See also Johnson: *Libraries*, 76. Gallo: *Papyrology*, 37.

6 Ogilvie: *The Library of Lactantius*, 109.

7 *Satires* 2.3.11-12. Cf., Martial 8.72; 10.104; 11.3, and Catullus 68(a).33-6 who regrets he does *not* have his books with him. Cf., Scribonius Largus: *Compositiones* ep. ded. 14.

8 Cf., Martial 1.2.4; 12.2.

course, the verses may be no more than poetic exercises, variations on the theme of miniature editions.¹

As for what constituted the 'Classics', copies of which a gentleman may or may not have had at home, but which he had certainly studied at some time during his schooling, the evidence is difficult to interpret with certainty. Quintilian recommended Homer, Menander, Vergil, Cicero and Asinius as suitable authors for a boy to study; and it seems likely that Terence, Nævius, Sophocles and Euripides, Ovid, Horace, and Lucan could be added to that list.² Pliny was certainly familiar with most of these: that is to say, he gives the appearance of familiarity by quoting their works.³ It is always possible, of course, that he was quoting from someone else who quoted them, or that he lifted his quotations from anthologies. But one should not be too sceptical about Pliny's use of a wide range of sources, otherwise one will end up like Rabenhorst who tried to show that Pliny was little more than an *epitomator* of Verrius Flaccus.

We are bound, then, to come to the conclusion that private libraries are likely to have reflected (a) the taste of the owner and (b) the availability of authors. In consequence, anyone who wanted to consult a particular book, or even investigate a particular subject, might strike lucky or find it difficult to locate what he wanted at all. As Starr observes, 'since a relatively small number of copies of a text were in circulation at any given time, locating a copy could be difficult and time-consuming'.⁴ To this one may add that the number of places which might have such a book was small, too, so at least one knew where one stood. One important result stems from this. Since library-collections, especially those of private owners, were likely to be haphazard in their contents and contain *lacunæ*, excerpting passages from volumes as they came to hand was absolutely necessary if one wanted to retain information for any length of time, and especially if one wanted to write any extensive and discursive prose-work at all. No wonder, then, that Pliny's *commentarii* were so many or that Larcius Licinus wanted to buy them from him.

1 Thus 190: 'Pellibus exiguis artatur Livius ingens' or 186: 'Quam brevis immensum cepit membrana Maronem'.

2 Quintilian: *Institutio* 1.8.5-12. Bonner: *Education*, 173-5 (primary schooling); 212-17 (*grammaticus* stage). This list cannot be taken as definitive, of course. As Bonner remarks, 'the *grammaticus* ... beyond Homer and Vergil may have felt free to exercise some liberty of choice', 218. See also Marrou: *Histoire de l'éducation dans l'antiquité*, 277-8. Starr: *Phœnix* 44 (1990), 154.

3 For example, see Appendix 10.

4 CQ 37 (1987), 218.

How large were these private collections? Persius is supposed to have had 700 volumes and Silius Italicus a large number in each of several houses.¹ Compare these with the estimate (considered too high) of 23,000 books in the library at Ephesus,² and the 30,000 volumes belonging to Epaphroditus who lived in Rome from the reign of Nero to that of Nerva.³

Conclusions

(i) Pliny could have used four public libraries in Rome itself: the Palatine, the Octavian, the Tiberian, and the Vespasianic *bibliotheca Templi Pacis*. Since building of the last did not start until the second half of 71, the Temple cannot have been ready to receive books until 72 at the earliest. It was dedicated at the beginning of 75, and Pliny's frequent references to its art collection seem to date from a time when the temple was complete and open to the public. His use of the library, if indeed he did use it, must therefore be dated to 72 or, perhaps more likely, 75 onwards.

(ii) There is evidence of the existence of public libraries outwith Rome, in Italy itself, in the West and in the East.

(iii) Private libraries may have been quite common. Many individuals clearly had, or are said to have had, a large number of books.

(iv) People took books with them when they travelled, and it is possible that some collections grew in number if their owner was resident abroad for an extended period on, say, official business.

(v) Libraries, especially private libraries, seem to have grown haphazardly and therefore the books they contained were representatives not only of personal taste but also of a random process of selection. One important consequence of this was that copying or excerpting was more or less essential if one wanted to be sure of

1 Suetonius: *De Poetis* III. Pliny: *Ep.* 3.7.8.

2 Pfeiffer: *MAAR* 9 (1931), 164.

3 Suidas s.v. Ἐπαφρόδιτος. Allowing for the fact that these numbers almost certainly represent scrolls rather than complete works, it is interesting to compare them with those of Renaissance libraries. John Dee, acknowledged to have the finest library in sixteenth-century England, had about 4,000 books and manuscripts. Compare this with that of Grolier who had about 3,000 volumes. See French: *John Dee*, 43-4. Apart from Cicero, we know that Catullus and Ovid had libraries, [Catullus 68.33-6. Ovid: *Tristia* 1.1.105-7] and Pliny the Younger had a kind of press which served as a library in his villa at Laurentum, while Herennius Severus decorated his library with portraits of Cornelius Nepos and Titus Catus, [Pliny: *Ep.* 2.17.8; 4.28.1]. We have no indication, however, of whether these collections were large or small.

retaining a written record of certain information, since one could not be certain one would be able to get hold of that particular work easily in future.¹

Further considerations

Pliny claims to have used one hundred authors in his composition of the *NH*, together with a mass of other material either previously ignored or gained from later experience (*Præf.* 17). We can gauge in two ways, if only in the most general fashion, some of the books Pliny found most helpful. First, we can count the number of times an author is cited in Book 1 as a source for each Book of the *NH*. This yields the following information.²

Latin

Author	Number of books for which cited	Author	Number of books for which cited
Marcus Varro	31	Cornelius Nepos	16
Celsus	20	Lucius Piso	15
Sextius Niger	19	Fabianus	14
Mucianus	18	Trogus	13
Hyginus	17	Iulius Bassus	10
Cato the Censor	16	Vergil	10

Greek

Author	Number of books for which cited	Author	Number of books for which cited
Democritus	30	Homer	11
Theophrastus	27	Anaxilaus	11

¹ As I have remarked earlier, this may help to explain Larcus Licinus's eagerness to buy Pliny's *commentarii* and his apparent willingness to pay well over the odds for them. They represented extensive reading and presumably contained information Licinus thought he would be unlikely to get in any other fashion. Notice Pliny's remark to Titus that he had perused some very abstruse material: 'lectione voluminum circiter duorum milium, quorum pauca admodum studiosi attingunt propter secretum materiæ', *Præf.*, 17. On the difficulty of assembling a decent private library, see further Marshall, *Phœnix* 30 (1976), 253-4. Still, the question does occur, why did Pliny not allow Licinus to have a copy of his *commentarii*, even if he was unwilling to sell them outright? Natural possessiveness, perhaps, or dislike of the man himself?

² I include in both the Latin and the Greek lists only those authors cited for ten Books or more. The point I wish to make can be achieved without recourse to exhaustive statistics.

Nicander	17	Alexander Polyhistor	11
Iuba	16	Orpheus	10
Aristotle	14	Mnesides medicus	10
Hesiod	14	Heraclides medicus	10
Asclepiades medicus	12	Erastratus medicus	10
Hippocrates	12	Dionysius medicus	10
Xenocrates medicus	11	Diagoras medicus	10
Iollas medicus	11	Chrysippus medicus	10

Figure 16

At first glance, these lists appear to suggest that Pliny made particular use of three types of author: (i) those with an encyclopædic range of compositions, (ii) those interested in plants and trees, and (iii) those interested in medicine. Certainly it reflects the nature of the *NH* which spends 8 of its 36 Books on trees and plants, and 13 out of 36 on medicines—a remarkable 21 out of 36 or 58% of the total.

The frequency of citations of Theophrastus can be attributed, in large measure, to the fact that nearly half the *NH*—16 Books out of 36—deals with botany in one form or another.¹ In consequence, one must expect to see Theophrastus as a major source of information. The choice of subject-matter here dictates the source. Again, since such a large proportion of the *NH* is taken up with medicine, it is not surprising that fully half the Greek authors in the above list are *medici*. Here it is interesting to note that some of the bibliographies repeat themselves either with no differences or with minimal. Compare, for example, Books 12 and 13 (Botany), the *externi* of Books 14, 15, 17 and 18 (Botany), 20 and 21, and both Latin authors and *externi* of 23-27 (Botany in medicine). The obvious explanations for these repetitions are either that Pliny was using a single source which quoted the Greek sources in that order; or that the compiler of Book 1 (whether Pliny himself or a secretary) noted that the sources for the subject-matter were very much the same and simply saved time and effort by copying out one bibliography more than once; or that this was the order of extracts in Pliny's *commentarii*.

¹ Books 12-27 cover the discussion of trees and plants and also the types of medicines to be derived therefrom.

Secondly, let us look at those authors whom Pliny cites most frequently by name in books 2-37.¹ Here, again for the sake of space, I have confined myself to those authors overtly cited ten or more times.

<u>Latin</u>			
Author	Number of Books within which the author is cited ²	Author	Number of Books within which the author is cited
Marcus Varro	31	Lucius Piso	15
Sextius Niger	19	Fabianus	14
Mucianus	18	Trogus	13
Hyginus	10	Iulius Bassus	13
Celsus	16	Pompeius Lenæus	10
Cornelius Nepos	16	Vergil	10

<u>Greek</u>			
Author	Number of Books within which the author is cited	Author	Number of Books within which the author is cited
Democritus	30	Anaxilaus	11
Theophrastus	27	Iollas medicus	11
Nicander	17	Xenocrates medicus	11
Iuba	16	Chrysippus medicus	10
Aristotle	14	Erastratus medicus	10
Hesiod	14	Diagoras medicus	10
Asclepiades medicus	12	Dionysius medicus	10
Hippocrates	12	Mnesides medicus	10
Homer	11	Orpheus	10
Alexander Polyhistor	11		

Figure 17

Au fond, this is the same type of list as the first. Encyclopædic, botanical and medical writers predominate, and many of the names—as one might expect—are the same in both lists. Working out which of them would have appeared in Pliny's

¹ This is not necessarily the same as those authors whom Pliny most frequently quotes, but without his giving us the name, any attribution of a source is bound to contain an element of uncertainty.

² In some cases, of course, more than once.

auctores centum, however, is not so easy since we cannot always be sure that a purported quotation comes directly from the author himself rather than from an anthology or some other writer who happened to give the relevant reference. It does seem reasonably clear, however, that Pliny probably used the following sixteen authors as major sources for his work: (Latin) Marcus Varro, Sextius Niger, Mucianus, Hyginus, Celsus, Cornelius Nepos, Lucius Piso, Fabianus, Trogus, Iulius Bassus, Pompeius Lenæus, Vergil, Cato the Censor; (Greek) Theophrastus, Aristotle, Iuba. It is difficult to include more names because we cannot check Pliny's text against theirs to see how he handles their work—but this applies to a majority of those authors I have just cited—and it is always possible that he got at least some of the medical quotations he wanted from someone like Sextius Niger whose writings, unfortunately, have not survived. Even the list of Latin authors may be too long for similar reasons. Granted the difficulties, however, these sixteen may represent a core of reading from which much of the material for a large part of the *NH* originally came.¹

(ii) ARCHIVES

Apart from literature, other written records of various kinds will have been available to Pliny, and indeed we know that he did make use of them. I am here stretching the meaning of 'archive' to include the following: *acta, monumenta, annales, commentarii, and inscriptiones*.

(a) *Acta, monumenta, annales*

Acta were written records of events such as speeches and transactions of the Senate and the Emperor. Summaries were published daily in Rome and extracts

¹ One might add the *Commentarii* of Marcus Agrippa to this list, since Pliny claims to have used Agrippa's figures for many of the geographical measurements in Books 3–6. Pliny often cites author and title in his text, but his motive seems to be a desire to direct his reader's attention to the source of a particular piece of evidence about which there may, perhaps, be disagreement. Examples (not a complete list) of such citations are: Lucius Piso, *Annales I* (2.140); Xenophon, *Periplus* (7.155); Apollas, *Olympionicæ* (8.82); Pliny, *De Iaculatione Equestri* (8.162); Fabius Pictor, *Annales* (10.71 and 14.89); Pliny, *Vita Pomponi Secundi* (14.56); Apollodorus medicus, *De Vinis Bibendis* (14.76); Gaius Epidius, *Commentarii* (17.243); Attius, *Praxidica* (18.200); Sabinus Tiro, *Κηπουρικά* (19.177–8); Diodorus, *Empirica* (20.121); Petrichus, *Ophiaca* (20.258); Miccio, *Rhizotomumena* (20.258); Cicero, *Admiranda* (31.12 and 51). Details of verbatim quotations are set out in Appendix 10. The number of quotations per author is as follows: Cato (17), Marcus Varro (6), Cicero (3), Hemina and Plautus (2), Augustus Cæsar, Tuditanus, Trebus, Nepos, Trogus, Androcydes, Dossenus, Sophocles, Pompey, Tullus, Mucianus, Gracchanus, Messala, Fenestella, Lucilianus, Vergil (1).

made available to readers in the provinces.¹ A good idea of what they were like can be obtained from Petronius's parody of them:

Et plane interpellavit saltationis libidinem actuarius, qui tanquam urbis acta recitavit: 'VII Kalendas sextiles: in prædio Cumano, quod est Trimalchionis, nati sunt pueri xxx, puellæ xl; sublata in horreum ex area tritici millia modium quingenta; boves domiti quingenti. Eodem die: Mithridates servus in crucem actus est, quia Gai nostri genio male dixerat'.²

Pliny acknowledges *acta* among his sources for Books 5, 7, 8, 10 and 37, the first and last being the *Acta Triumphorum*³ and the other three plain *acta*. His text also contains a reference to *acta* (in Book 2). The passages are as follows:

- (i) 'Eodem [i.e., Titus Annius Milo] causam dicente lateribus coctis pluisse in acta eius anni relatum est', (2.147);
- (ii) 'In actis temporum divi Augusti invenitur duodecimo consulatu eius L.que Sulla collega a. d. III idus Aprilis Crispinium Hilarum ex ingenua plebe Fæsulana cum liberis viii, in quo numero filiaë duæ fuere, nepotibus xxvii, pronepotibus xviii, neptibus viii, præolata pompa cum omnibus his in Capitolio immolasse', (7.60);
- (iii) 'Invenitur in actis Felice russei auriga elato in rogam eius unum e faventibus iecisse se', (7.186);
- (iv) 'In nostro ævo actis', the story of a dog remarkably faithful to its dead master, (8.145);
- (v) '[Phoenix] allatus est et in urbem Claudii principis censura anno urbis DCCC et in comitio propositus, quod actis testatum est', (10.5).

It may be significant that these are all examples of *mirabilia* (i, v) or historical anecdotes (ii, iii, iv), and one wonders whether they may not have come, originally at least, from the prodigy lists to be found in the republican *Annales Maximi*, examples which Pliny either compiled himself or was able to quote via the medium of someone like Verrius Flaccus who certainly knew and used them.⁴

¹ Cicero: *Ad Atticum* 3.8.3 = SB 53; *Ad Familiares* 12.23.2 = SB 347. Tacitus: *Annales* 12.24; 16.22. Pliny: *Ep.*, 5.13.8. *Panegyricus* 75.1. When Pliny the Elder writes, 'exstat oratio Vitelli qua Gnæum Pisonem eius sceleris coarguit', (*NH* 11.187), he may be referring to its existence among public records. See also Kubitschek in *PW* 1.287-98.

² *Satyricon* 53.

³ Augustus had set up on the walls of his triple arch the *Fasti Capitolini* and the *Acta Triumphalia*, 'a sort of final edition of the Republican lists of eponyms and triumphatos', as Frier says, *Libri Annales*, 198.

⁴ See Rawson: *CQ* 21 (1971), 158. Frier: *Libri Annales*, 272 and 48. Frier argues for an Augustan recension of these *Annales*, 179-200.

In Book 1, Book 5 is credited with information from the *Acta Triumphorum*. Pliny does not refer to them directly in the text, but one can presume that ‘omnia armis Romanis superata et a Cornelio Balbo triumphata, unius omnium curru externo et Quiritium iure donato’, (5.36) was derived from them although, again, whether Pliny consulted the *Acta* directly in this instance is difficult to tell. He goes on to say, ‘hoc mirum ...auctores nostros prodidisse’. implying that further details which he gives about the triumph are derived from published works. But whether ‘auctores’ is meant to include *Acta*, one cannot say. Pliny does, however, quote verbatim details of Pompey’s triumphal processions which he appears to have taken from these records. ‘Hoc est breviarium eius ab oriente’, (7.98, referring to 7.97), and ‘præfatio hæc fuit’, (7.98, with the quotation following). In 37.13, though, despite promising to quote directly from the text, (‘verba ex ipsis Pompei triumphorum actis subiciam’) he appends what appears to be a summary of information instead.

The term *monumenta* refers to a similar type of record. The words can apply to official records of such things as state financial business, a census of colonies, important public speeches, decrees inscribed on stone, as well as traditional folk-lore and history.¹ All are what one might call the standard stuff of *annales*. Pliny’s references are as follows:

- (i) ‘Relatum in monumenta est lacte et sanguine pluisse’, (2.147, referring to 114 BC). Two further *mirabilia* follow;
- (ii) ‘Britannia insula, clara Græcis nostrisque monimentis’, (4.102);
- (iii) ‘Extat in monimentis medicorum et quibus talia consecrari curæ fuit uno abortu duodecim puerperia egesta’, (7.48);
- (iv) ‘Orestis corpus oraculi iussu refossum septem cubitorum fuisse monimentis creditur’, (7.74);
- (v) ‘Invenimus in monumentis Salamine Euthymenis filium in tria cubita triennio adcrevisse’, etc. (7.76);
- (vi) ‘In plurium Græcorum est monumentis cum equa muli coitu natum quod vocaverint ginnum’, (8,174);
- (vii) ‘Mulum LXXX annis vixisse Atheniensium monimentis apparet’, (8.175);
- (viii) ‘Est Gortynæ in insula Creta iuxta fontem una platanus insignis utriusque linguæ monimentis’, (12.11).

¹ Cicero: *Ad Familiares* 5.20.5 = SB 128. Livy 29.37.7; 9.18.7; 39.37.16. Cf., Tacitus: *Annales* 11.14. Cicero: *De Divinatione* 1.72; *De Officiis* 1.156; *De Inventione* 1.1; cf., *De Finibus* 2.67. Livy 7.21.6; Quintilian: *Institutio* 2.4.18. There were also archives in private houses, as Pliny remarks, *NH* 35.7.

Here is a very mixed group. Numbers i, iv and v may well have belonged originally to prodigy lists similar to those Pliny records as *acta*. Numbers ii and perhaps viii could come from chronicles; vi and vii from veterinary writings, and iii from medical.

Finally, *annales* which Pliny often uses as we would use ‘historians’. Cicero considered these to constitute a single tradition representing the public history of Rome, and this is the way later authors, including Pliny, refer to them.¹ Examples from Pliny are as follows:

- (i) ‘Exstat annalium memoria sacris quibusdam et precationibus vel cogi fulmina vel inpetrari’, (2.140);²
- (ii) ‘Invenimus in annalibus P. Licinio Crasso C. Cassio Longino coss. Casini puerum factum ex virgine sub parentibus’, (7.36).
- (iii) ‘Nævii Pollionis amplitudinem annales non tradunt’, (7.74). If Pliny is aware that the annals do not record a particular fact, this may indicate that he (or his researchers) actually looked in them;
- (iv) ‘Annalibus notatum est M. Pisone M. Messala coss. a. d. XIV kal. Oct. Domitium Athenobarbum ædilem curulem ursos Numidicos centum et totidem venatores Æthiopas in circo dedisse’, (8.131);
- (v) ‘Est in annalibus nostris peperisse sæpe, verum prodigii loco habitum’, (8.173);
- (vi) [Boar was first served whole at a dinner given by Rullus] ‘et hoc annales notarunt’, (8.210);
- (vii) ‘Venisse murem cc denariis Casilinum obsidente Hannibale ... annales tradunt’, (8.222);
- (viii) ‘Sauricum occentu dirimi auspicia annales refertos habemus’, (8.223);
- (ix) ‘Invenitur in annalibus in agro Ariminensi M. Lepido Q. Catulo cos. in villa Galerii locutum gallinaceum’, (10.50);
- (x) ‘[Manius Curius] ‘quem hospitem legatis aurum repudiaturum adferentibus rapum torrentem in foco inventum annales nostri prodidere’, (19.87);
- (xi) ‘L. Paulo Q. Marcio censoribus primum in Italia carbunculum evenisse annalibus notatum est’, (26.5);

¹ Frier: *Libri Annales*, 221, 223. Earlier, he refers to them as a continuous record or running chronicle, and points out that Augustus had produced a new edition of the *Libri Maximi*, editing and re-working older material, *Ibid.*, 175, 196-7.

² This section also contains an explicit reference to the first Book of Lucius Piso’s *Annales*. One should probably distinguish between these and the anonymous records cited in the examples given here, but the content of each is likely to have been similar.

(xii) 'Tanta indignatio exarsit, ut anulos abiectos in antiquissimis reperiatur annalibus ... anulosque depositos a nobilitate in annales relatam est, non a senatu universo', (33.18);

(xiii) 'Meritum eius [i.e., a Vestal Virgin] ipsis ponam annalium verbis: quod campum Tiberinum gratificata esset ea populo', (34.25). It is possible that this quotation of the text itself indicates that Pliny (or his researcher) had consulted the annals themselves, but one cannot, of course, be sure. He may be quoting another historian.

Seven of these thirteen extracts refer to prodigies or *mirabilia* (i, ii, iii, v, vii, viii, ix). Four are historical anecdotes (vi, x, xii, xiii), and the two remaining record unusually large numbers (iv) and the appearance of a new disease (xi). It is interesting to note that of the 26 extracts from *acta*, *monumenta*, or *annales*, nearly half (12) can be classed as *mirabilia*. Fourteen of the twenty-six appear in Books 7 and 8 which deal with Mankind and Land Animals respectively.¹ The appearance of a reference to prodigies in Book 2 indicates that if Pliny did use these public records directly rather than at second-hand—and we have seen some slight evidence that he or his researcher did—then we may take it that some research, at any rate, had been done before composition of *NH* started, since Book 2 was the first to be written, (see *supra*, p. 105).²

(b) *Commentarii*

The range of meanings attached to this word will be discussed later (*infra*, pp. 282-4). Here let us note simply that Pliny refers to six *commentarii*.

(i) 'Equidem ipsa etiam verba priscae significationis admiror; ita enim est in commentariis pontificum', (18.14. A verbatim example follows in the text). Linderski points out that 'libri pontifici, pontificum, pontificales, commentarii pontificum' etc., almost certainly refer to learned treatises about the contents of the pontifical archives.³ The quoted sentence refers to procedure for augury.

(ii) '[Prodigiis] ostentis Aristandri apud Græcos volumen scatet ... apud nos vero C. Epidii commentarii, in quibus arbores locutæ quoque reperiuntur', (17.243). Epidius

1 Seven in Book 7 and seven in Book 8, as it happens.

2 The archive of the pontifices was probably kept in the Regia, since this is where the officials met. Cicero mentions a fire in the Tabularium, the public-record office situated in the Atrium Libertatis. Vespasian built a new record-office in 78 to house documents relating to his programme of restoration. Cicero: *De Natura Deorum* 3.30(74). Livy 43.16.13. On Vespasian, see Clark: *Books*, 25-27. On the pontifices, Linderski: *HSPh* 89 (1985), 212. On the older record-offices, see Culham: *CPh* 84 (1989), 101-2.

3 *Op. cit.*, *supra*, 220.

is cited as a source for Book 17 only. There is no clear indication whether or not Pliny consulted Epidius's work at first or second hand.

(iii) '[Cato] profitetur esse commentarium sibi quo medeatur filio, servis, familiaribus, quem nos per genera usus sui digerimus', (29.15). This is an interesting example of Pliny's telling us how he was using someone else's material.

(iv) '[Instructions for making magical contraceptive devices] 'ut Cæcilius in commentariis reliquit', (29.85).

To these may be added:

(v) Augustus wrote about a comet which had appeared at the beginning of the Games he was giving in honour of Julius Cæsar, and Pliny purports to quote his text. 'His verbis id gaudium prodit', (2.93-6). Bardon is of the opinion that this passage is a genuine fragment, the only one remaining, of Augustus's *Commentarii*.¹

(vi) 'Neronem ... pedibus genitum scribit parens eius Agrippina', (7.46). This account refers to her *Commentarii*, such being the title given by Tacitus (*Annales*, 4.53). Pliny himself gives no title either here or in Book 1. It is difficult to tell whether or not Pliny saw her book himself although one imagines that the Imperial *commentarii* were actually published. He was certainly acquainted with documents in the written hands of Tiberius and Gaius Gracchus (13.83) and also says *re* manuscripts, 'iam vero Ciceronis ac divi Augusti Vergilique sæpenumero videmus', (*Ibid.*). Clearly he means that such manuscripts were common, but the first person plural surely here includes himself.

Commentarii by Tiberius, Claudius and Vespasian existed, but Pliny does not mention any of them.² His silence over the last is significant. There are four possible explanations. (a) They did not contain material he wished to use. This is unlikely, as Vespasian is almost certain to have talked about his Judæan campaign, and Pliny certainly included vivid details about Judæa which sound as though they had come from someone who knew the area and campaign.³ (b) More specifically, they were not published in time for him to use. (c) They were not published until after Vespasian's death. Vespasian died on 24th June, 79. Josephus's *Bellum Iudæicum* heavily criticises the historians of that campaign, and if Vespasian's book dealt, at least in part, with that particular subject as one imagines it almost certainly did, it is hardly possible that Josephus could have opened his History the way he does, had the Emperor's work been available. Since *BJ* can be dated between Spring 75 and

1 *La littérature latine inconnue* 2.99-100.

2 Suetonius: *Domitian* 20; *Claudius* 41. Tacitus: *Annales* 13.43. Josephus: *Vita* 342, 358; *Contra Apionem* 1.56.

3 For example, 5.69 and 12.113. Cf., 5.73.

June 79,¹ it looks as though Vespasian's book did not appear until late in his reign at the earliest—the very time, as it happens, that I am suggesting as one of the possible composition-periods for *NH*.

But Josephus also makes a curious remark in *Contra Apionem* (1.56) which can be interpreted to mean that both Vespasian and Titus contributed to the memoirs: τοῖς τῶν αὐτοκρατόρων ὑπομνήμασιν. The implication must surely be that either Titus made a substantial contribution to his father's book or that he was responsible for publishing it after June 79. In the latter case, flattery may have played a part in suggesting that he was co-author, especially as he had played a major role in crushing the Jewish revolt. Had publication been this late, it would explain Pliny's silence.

(d) Perhaps Pliny used the *Commentarii* without acknowledgement. This is always possible, but perhaps unlikely since he refers to Titus in Book 1 as a source for Book 2 and has a flattering reference to him in the text (2.89), and acknowledges Domitian as a source for Book 33. It is true, of course, that his system of acknowledging sources is not consistent—sometimes he names them, sometimes he does not; sometimes the name appears in Book 1 but not in the text; occasionally vice versa—but it seems most odd that he would mention both sons as sources but not the father—who was reigning Emperor at the time—if the father had brought out a first-hand account of recent history dealing in part or in whole with an area about which Pliny has things to say. One's suspicion, therefore, is that Pliny was silent about Vespasian's *Commentarii* because they were not available in time for him to use them in *NH*.²

History, *mirabilia*, medicine are thus dealt with by the *commentarii* to which Pliny does refer. A question for later, and one directly relevant to Pliny, must be, were *commentarii* note-books which tended to collect material on a single subject, or could they range widely gathering together, like a commonplace book, any information which happened to catch their author's fancy?

(c) *Inscriptiones*

Occasionally, Pliny makes reference to, or purports to quote the text of, inscriptions whether upon stone or bronze tablet. The examples are as follows:

(i) 'Veteres [sc. litteras] Græcas fuisse easdem pæne quæ nunc sint Latinæ indicio erit Delphica antiqui æris (quæ est hodie in Palatio dono principum) Minervæ dicata

¹ See P. Bilde: *Flavius Josephus between Jerusalem and Rome*, 79.

² There is a brief notice on Vespasian's book by S. Franchet d'Espérey in *ANRW* II.32.5 (p. 3051).

[in bibliotheca]¹ cum inscriptione tali: ΝΑΥΣΙΚΡΑΤΗΣ ΑΝΕΘΕΤΟ ΤΑΙ ΔΙΟΣ ΚΟΡΑΙ ΤΑΝ ΔΕΚΑΤΑΝ ..., (7.210).² Suetonius tells us that Vespasian undertook to replace three thousand bronze tablets which had been lost during the Neronian fire.³ Since Pliny calls this one 'antiquus', we may presume that it survived the conflagration.

The phrase 'dono principum' is interesting. If one construes *dono* as referring to the *quæ* clause—the natural way of doing it—the gift of the Emperors is the bronze tablet with its inscription. Who, then, were the Emperors? It would seem natural to suggest that, as Pliny was writing in the seventies, mention of *principes* would automatically bring to mind Vespasian and Titus unless there were good reasons it should not. But this is to associate Titus in rulership and if he were not so associated—an arguable point, of course—one cannot envisage Pliny's making a mistake or deliberately making a highly political statement unless he knew it was true. With his Court connections, he can hardly be excused for slipshod knowledge of state affairs. It is therefore not a straightforward matter to understand *principum* here, and one will have to let it rest as obscure.

(ii) 'Cum Pompeius Magnus tropæis suis quæ statuebat in Pyrenæo DCCCLXXVI oppida ab Alpius ad fines Hispaniæ ulterioris in dicionem ab se redacta testatus sit', (3.18). This information could have come to Pliny through his reading geographical literature on the area. On the other hand, if Pliny travelled, it is just possible he may have seen the inscriptions for himself.⁴

(iii) 'Tuditanus qui domuit Histros in statua sua ibi inscripsit: 'Ab Aquileia ad Tityum flumen stadia MM', (3.129).

(iv) 'Non alienum videtur hoc loco subicere inscriptionem e tropæo Alpium, quæ talis est ... ', (3.136. The text is then given, 136-7). The Loeb note *ad locum* observes that 'an arch with a portion of this inscription remaining stood in fairly recent times near Nicæa in Albania'.⁵ The arch was erected, however, not far from Nicæa in the Alpes Maritimæ (modern La Turbie near Monaco). It lay on the coastal route out of Italy to Gallia Narbonensis whence a traveller could go north to the other Gauls or Germania, or south into Hispania Tarraconensis. There is therefore the possibility that Pliny may have seen this monument himself.

1 Mayhoff brackets these words without explanation. 'Uncos ego posui', is all he says. The Loeb edition draws attention to his reservations and brackets the words in its text. The Budé ignores the brackets and treats the text as sound.

2 For comments on the Greek text, see F. Buecheler: *Rh. Mus.* 37 (1882), 336-7 and O. Rossbach: *Rh. Mus.* 57 (1902), 473-4..

3 *Vespasian*, 8.

4 Pliny makes two further references to these trophies, 7.96 and 37.15.

5 For further details, see König-Winkler edition, note *ad locum*.

(v) 'Et discessuri ab hortensiis unam compositionem ex his clarissimam subteximus adversus venenata animalia incisam in lapide versibus Coi in æde Æsculapi', (20.264. A Latin prose version follows).

(vi) The painter of the Temple of Apollo was granted citizenship of that place and honoured 'carmine, quod est in ipsa pictura his versibus', (35.115). The quotation follows. Pliny observes, 'eaque sunt scripta antiquis litteris Latinis'. It sounds like autopsy and indeed Ardea was a town near the coast of Latium (3.56), only about twenty-four miles south of Rome.

Other Material

One might add at this point that Pliny may have had the opportunity to see manuscripts which were available for inspection but not necessarily published in the sense of released to a wide public. When, for example, he says, 'exstat certe [Marci Agrippæ] oratio magna', (35.26) does he mean that the document is still in evidence; or does he mean that certain information exists in a speech by Marcus Agrippa? The former is more likely, since the latter meaning requires *exstat* to be accompanied by some such phrase as *in litteris* (cf., Cicero: *Tusculanæ* 1.38) or *in annalibus* (cf., Cicero: *De Divinatione* 1.51). Some of Augustus's letters could still be consulted (Quintilian: *Institutio* 1.7.22), and we know that Pliny read, or at least looked at, documents in the handwriting of the Gracchi, because he says so (13.83). Manuscripts in the hands of Cicero and Vergil were also still available to scrutiny, (Quintilian: *Institutio* 1.7.20).

Conclusions

(i) Pliny or his secretary may have consulted various public records, including the *Acta Triumphalia* and the *Commentarii Pontificum*. Much of the material derived therefrom can be classed as *mirabilia*.

(ii) It looks as though Vespasian's *Commentarii* were not available to him.

(iii) Pliny used inscriptional material, some of which he may have seen himself.¹

(iii) MAPS

Of all the existing maps, whether engraved or painted on walls, drawn or painted in manuscripts, pictured in mosaics, or exhibited in the form of a terrestrial

¹ Zehnacker points out, too, that in order to discuss the history of Roman money (33.42-7) Pliny could have collected facts during visits to collectors of old coins and examined documents lodged in the Temple of Juno Moneta, as well as consulting historians such as Piso, Fenestella or Verrius Flaccus, *Ktema* 4 (1979), 174-6.

globe, the one most obviously available to Pliny in Rome itself was that begun by Marcus Agrippa and finished by Augustus. It was set up in the Porticus Vipsania, and there seems to be general agreement that it was rectangular, had North at the top, was between 7.5 feet and 10 feet high with a greater width, and was divided into three land masses, Europe, Asia and Africa. Whether it was painted or engraved is not quite clear.¹ It is also generally agreed that Agrippa's map was based on the scheme widely used by Greek cartographers, supplemented by Roman route-books and reports of soldiers, merchants and travellers.²

The first Greek maps of the world showed the earth as a disk of land surrounded by Ocean. Later, an oblong or oval shape was suggested for the map and from then on, both types could be found.³ There were also globes, starting with that of Crates c. 150 BC.⁴ Crates intended to illustrate Homeric geography. Other Greek maps showed not only continents but also the names of peoples, latitudinal zones, prominent mountains and rivers, and perhaps distances, although these could have been displayed or published as separate notes.⁵ Some of these maps were displayed in or on public buildings. Aristophanes has one of his characters say to another,

αὐτῆ δέ σοι γῆς περίοδος πάσης. ὄρας;
αἶδε μὲν Ἀθῆναι,

and part of Theophrastus's will directed that painted panels (πινάκας) showing maps of the earth (γῆς περίοδοι) should be put in the lower cloister of a restored

¹ There is an extensive bibliography on the subject. Certain works, however, cover the available material between them. Tierney, *PRIA* 53 (1963), 152 discusses the dimensions of the map which he thinks could have been as large as 30 feet by 60 feet, and its form which he says is likely to have consisted of marble slabs engraved or painted. Cf., Thomson: *History of Ancient Geography*, 332. Dilke: 'Maps in the service of the state', in Harley-Woodward, *History of Cartography* 1.208 and *Greek and Roman Maps*, 42. Gisinger in *PW* supp. 4.644-7 sv. 'Geographie'. In view of the measurements of the map, one wonders how readily visible the top would have been.

² Tierney, 155, 162. Dilke: 'Maps', 209; *Greek and Roman Maps*, 44-52 which review those passages from *NH* Books 3-6 wherein Pliny quotes Agrippa specifically as a reference. Dilke shows that Pliny used him principally for recording measurements. Cf., Tierney, 165. See also Thomson, 333 and the brief notice by Schmidt in *PW* 17.2172-4 sv. 'Oikumene'.

³ Romm: *The Edges of the Earth in Ancient Thought*, 14 and note 14; 41-2. Aujac: 'Greek Cartography in the early Roman World', in Harley-Woodward: *Cartography* 1.166-7, 171. Geminus of Rhodes: *Elementa Astronomiæ* 16.4-5. Thomson, 97.

⁴ Stevenson: *Terrestrial and Celestial Globes* 1.7-8. Aujac, 162-4. Dilke: *Greek and Roman Maps*, 36-7.

⁵ See principally, Dilke: *op. cit., supra* 22-38 passim.

shrine of the Muses.¹ Others were spheres, as can be seen from a number of reliefs, for example;² and others may have appeared in manuscripts, although papyrus is not the best medium for coloured pictures. Pen and ink drawings work better thereon.³

Geography made great strides under the impact of Roman military campaigns, (Strabo 1.2.1). Measured itineraries were particularly important in both the construction and development of maps and marine charts, and land surveys provided the stimulus for Roman cartography in particular from the second century

¹ Aristophanes: *Nubes* 206-7. Diogenes Laërtius: *VS* 5.51. Cf., Apollonius Rhodius: *Argonautica* 4.279-81.

² Brendel: *Symbolism of the Sphere*, plate XXIII of Claudian date, plate XXVIII. See also plates II, III, VII, IX, XVII. Pliny, it may be noted, called the world a constantly revolving perfect sphere, 'orbem certe dicimus terræ globumque verticibus includi fatemur ...si cuncta liniarum comprehendantur ambitu, figuram absoluti orbis efficiat', *NH* 2.160. The heavens were also depicted by means of globes. Archimedes made several and at least two were taken to Rome by Marcellus in 212 BC. Cicero: *Republic* 1.14. One was put in the Temple of Virtue, the other was kept in Marcellus's house. See also Strabo: 1.1.21, ὥστε μηδὲ σφαιρῶν ἰδεῖν, μηδὲ κύκλους ἐν αὐτῇ.

³ Of Dionysius Perigetes's work, Aujac (in Harley-Woodward: *Cartography* 1.172-3) says,

The poem was originally supplied with maps ... Various annotations preserved in the margins of the existing manuscripts refer to maps illustrating the poem: some of them point out that such and such a place is lacking on the map or that the outlines of such and such a country do not agree with Dionysius's description. These seem to provide evidence that such map-makers continued to copy their models uncritically and rarely tried to adapt the map to the written description to be illustrated.

It may also mean, of course, that maps were easily corrupted. Cf., of Demetrius of Alexandria, living in Rome in 184 BC, '[one] might suggest that he was one of the artists who drew typical views of places inserted in the Hellenistic illustrated maps', Ling: *JRS* 67 (1977), 14 and notes 54-5. Horsfall: *Ægyptus* 63 (1983), 201-2. Cicero says to Atticus that he relied on the maps of Dicæarchus for the information that all the states of the Peloponnese bordered on the sea, *Ad Atticum* 6.2.3 = SB 116, but Shackleton Bailey denies that this necessarily means that Cicero consulted drawings rather than explanatory notes. See also the Budé note *ad locum*. Strabo (2.5.17) refers to the large number of details which can be seen in the world map (ὅσων μεστός ἐστιν ὁ χωρογραφικὸς πίναξ), but this may not refer to an actual map accompanying Strabo's book so much as to 'a world map' in general. We know that some books contained pictures (Pliny: *NH* 25.8, botanists: *NH* 35.11, Varro) and that some of these pictures were probably coloured ('verum et pictura fallax est coloribus tam numerosis'), but we do not know how common such illustrations were or whether maps were so done as well as pictures of plants and famous people.

BC onwards.¹ Military expeditions such as those of Corbulo in Armenia, and of Roman praetorians to Aethiopia under Nero helped to extend and refine geographical knowledge, and almost certainly to correct existing maps which, as Strabo complained, might be somewhat inaccurate.² What did these maps look like? We have already seen that Agrippa's was something in the nature of a large public monument. Varro records a meeting between friends at the Temple of Tellus on the Esquiline, who were looking at a map of Italy painted on the wall ('spectantes in pariete pictam Italiam', *RR* 1.2.1). Meltius Pompusianus was put to death by Domitian for having a map of the world (τὴν οἰκουμένην) drawn or painted on the walls of his bedroom (ἐν τοῖς τοῦ κοιτῶνος τοίχοις), and a mosaic pavement from Ostia of the early Imperial period shows what may be the Nile delta.³ A soldier's wife, in one of Propertius's elegies, follows her absent husband's progress on a map,

cogor et e tabula pictos ediscere mundos
qualis et hæc docti sit positura dei,
(4.3.37-8).

How detailed were these maps? Florus describes geographers as people 'qui terrarum situs pingunt', a phrase similar to that used by Pliny of Corbulo's map of Armenia ('situsque depicti et inde missi'), and which suggests that countries in colour were the minimum one could expect to see.⁴ Other details, however, are

¹ Dilke: 'Itineraries and geographical maps in the early and late Roman Empires', in Harley-Woodward: *Cartography* 1.234-5, 252. *The Roman Land Surveyors*, 112-13.

² Armenia, Pliny: *NH* 6.40. Aethiopia, Pliny: *NH* 6.181; 12.19. Seneca: *NQ* 6.8.3-4. Strabo 2.1.11, 38. Aujac, however, suggests that such corrections did not always register with everyone.

Poetry—sometimes illustrated by maps—also continued to be a way of memorising and popularising knowledge or meaning seen in cartographic images. Such literary sources do, however, give the impression that the educated class largely preferred to ignore new discoveries, and earlier Hellenistic concepts of geography persisted long after they had ceased to reflect up-to-date knowledge.

'Greek Cartography', in Harley-Woodward: *op. cit.*, *supra*, 171.

³ Pompusianus, Dio Cassius 67.12.4. Suetonius has a different version. He says that the map was on a piece of parchment which Pompusianus used to carry about with him, *Domitian* 10.3. Ostia, Dilke: 'Itineraries', in Harley-Woodward: *op. cit.*, 246-7.

⁴ Florus: *Epitome, præfatio* 3. Pliny: *NH* 6.40. As the *OLD* makes clear, 'pingo' overwhelmingly means to adorn with colours, paint a picture, decorate in colour, paint or draw a picture. *NH* 8.191, discusses wool by which 'vestis detrita usu pingitur rursusque ævo durat', but the rest of the context makes it clear that the wool is being used to create a decorative pattern as well as simply to mend. Cf., the embroidery on Dido's cloak, Vergil: *Aeneid* 4.582.

likely to have appeared in at least some maps. Vitruvius writes of ‘capita fluminum quæ orbe terrarum chorographiis picta itemque scripta’, (*De Architectura* 8.2.6), adding the important point of the written word as part of cartographical information.¹ I shall return to this in a moment. Pliny’s reference to the result of the Neronian expedition to Æthiopia (12.19) seems to suggest that details such as trees could be included. The Teubner text, repeated by the Loeb and Budé editions, gives the following: ‘Cognita Æthiopiæ forma, ut diximus, nuper allata Neroni principiraram arborem Meroen usque a Syene fine imperii per DCCCCLXXXVI p. nullamque nisi palmarum generis esse docuit’. But for ‘cognita’ manuscripts also give ‘aut sibi cognitum’ (R), ‘haud sibi cognitum’ (E) ‘neminem ad id tempus Asiæ Græciæque, aut sibi cognitum’, *vett.* This last is the reading of the König-Winkler edition.

Sherk says of this,

The use of the word ‘forma’ here as the subject of ‘docuit’ is important. The ‘shape’ of Ethiopia can hardly teach us anything about palm trees. But ‘forma’ in the language of the surveyors means ‘map’, and from the illustrated manuscripts of the Roman surveyors we know that their maps contained representations of cities, mountains, rivers, and trees. Pliny must have seen the map which accompanied the final report to Nero, and palm trees were visible on it in the upper reaches of the Nile. Palm trees have a distinctive shape.²

One is reminded of Livy’s account of the *tabula* which Tiberius Gracchus set up in the Temple of Mater Matuta at his triumph after conquering Sardinia. ‘Sardiniae insulæ forma erat atque in ea simulacra pugnarum picta’, (41.28.10).³ In addition to pictures, however, common sense tells us that there

¹ The Loeb edition refers this passage to Agrippa’s map, but the Budé note *ad locum* flatly disagrees, saying that the reference to maps is just a formula-cliché. Certainly there is nothing in Vitruvius’s text to warrant its being linked with Agrippa.

² There may, of course, have been a written label to the effect that these shapes represented palm trees. See *ANRW* II.1, pp. 559-60. See also De Nardis: *Ægyptus* 69 (1989), 139. For ‘forma’ as map, see *TLL*. 1082.62-74.

³ Cf., 24.16.19, ‘digna res visa ut simulacrum celebrati eius diei Gracchus, postquam Romam rediit, pingi iuberet in æde Libertatis’, where ‘pingi’ indicates a picture. Livy 37.59.3, ‘tulit in triumpho ... oppidorum simulacra centum triginta quattuor’ again suggests, by the very number involved, pictures rather than models, although it is always possible to argue that when you have slaves and time and motive, no extravagance is too complicated or unlikely. Pliny’s ‘omnium aliarum gentium urbiumque nomina ac simulacra duxisse’ (*NH* 5.36) falls into the same category; pictures of tribes with labels attached to say who they were strike one as somewhat more feasible than models of the natives. Cicero: *Piso* 60, Livy 26.21.7

should have been writing of some kind connected with maps, whether simple names of countries, mountains, or rivers placed on the map itself, or more detailed notes about tribes, winds, climate, distances.¹ These greater details one might expect to appear on or beside the map if it was large enough or perhaps to be a textual commentary forming the bulk of a book to which the map itself served as a kind of illustration. Common sense is supported by evidence, but the evidence is a little difficult to interpret. Plutarch begins his *Vita Thesei* (1) by saying that historians/geographers (ἱστορικοί) crowd on to the outer edges of their maps (τῶν πινάκων) the parts of the earth which elude their knowledge, with explanatory notes (αἰτίαι) that 'what lies beyond is sandy desert without water and full of wild beasts' or 'blind marsh' or 'Scythia cold' or 'frozen sea'.² This reminds one of what Pliny says about illustrations in some botanical works, that the authors 'pinxere ... effigies herbarum atque ita subscripsere effectus', (*NH* 25.8).

He goes on to say that some writers did not approve of pictures, as these showed the plant at a single stage only of its life-cycle. and therefore 'sermone eas tradidere'. Yet others gave even less information, 'et nudis plerumque nominibus defuncti', (25.9). This same variety of approach we may expect to find in the production of maps. Agrippa's map, for example, had *commentarii* as Pliny tells us (3.17), but there is much disagreement about what these *commentarii* were. Dilke sums up the position:

It is thought from several passages of Pliny's *Natural History*, in addition to the mention of notes, that Agrippa's map was accompanied by a commentary. Detlefsen argued against such a supposition, but Gisinger supported it. In the *Natural History* we are told, 'Agrippa calculates this distance [the length of the Mediterranean] from the Straits of Gibraltar to the Gulf of Iskenderun as 3,440 miles, but I am inclined to think there is a

and Velleius Paterculus: *Historia Romana* 1.9.6 are ambiguous. Apuleius: *Metamorphoses* 11.11, 'urnula faberrime cavata, fundo quam rotundo, miris extrinsecus simulacris Ægyptiorum effigiata', must refer to engraved rather than painted figures. Cf., Tacitus: *Annales* 2.41, 'vecta spolia, captivi, simulacra montium, fluminum, proeliorum'.

¹ One thinks of the detail exhibited on the Peutinger map which goes back to a pre-fifth century prototype. See Dilke: 'Itineraries', in Harley-Woodward: *Cartography* 1.240-1. Cf., the map on the Dura Europas shield (c. 260 AD), Dilke: *op. cit.*, 250. Both examples are late in relation to Pliny, of course.

² Cf., Geminus: οἱ κατὰ λόγον γράφοντες τὰς γεωγραφίας ἐν πίναξιν γράφουσι παραμήκεσιν, *Elementa Astronomiæ* 16.4 where γεωγραφία refers to the map itself and πίναξ to the wooden panel on which it is drawn. Clearly, technical terms took a while to settle down. The codices of Plutarch's *Theseus* 1 have ἐνίοις, with αἰτίαι written above as a correction in U, for which see the Budé apparatus *ad locum*. The difference in textual reading does not affect the point I am making.

mistake in this, since he also gives the distance from the Straits of Messina to Alexandria as 1,350 miles'. The word 'also' in the final clause of this passage suggests a second Agrippa source, and the verb 'existimavit' (thought), more suited to a text than to a map, is used twice elsewhere of Agrippa. Moreover much of the information on the west coast of Africa attributed to Agrippa concerns animals and is hardly suitable for inclusion in an official map. Another such informative passage credits him with writing that the whole Caspian coast from the river Casus consists of very high cliffs, which prevent landing for 425 miles. Since Agrippa died while composing the map, however, the commentary may have been incomplete, and relevant extracts may have been incorporated in the map.¹

I am more or less in agreement with Dilke's conclusions, but I have one or two reservations about some of his arguments. For example, I do not see why information about animals should not be included on an official map since, as we have already observed, details such as these could be put on maps: and what is meant here by an 'official' map? Secondly, I am not happy about the argument involving 'existimavit', since I do not see that this is any more suited to a text than to a figure appearing on a map. Nor does the Caspian passage clinch the argument, for there Pliny uses one of his standard phrases, Agrippa 'auctor est', and although this is used elsewhere of authors of books, one presumes that Agrippa could still here be referred to plausibly as the *auctor* of a map alone. However, Pliny frequently uses 'prodit' or 'prodidit' in connection with Agrippa's work—ten times out of thirty-one references—and since this verb is used by Pliny to refer to published books, its use along with two examples of 'auctor est' does make a strong suggestion that there was some kind of book issued in connection with Agrippa's map.² Pliny referred to

¹ 'Maps in the service of the state', in Harley-Woodward: *Cartography* 1.208. The references to Pliny are 6.207; 5.9-10; 6.39. Pliny's remarks in *NH* 3.17 are important supporting evidence for the existence of *commentarii* to Agrippa's map, but does '[Augustus] ... eum porticum ex destinatione et commentariis M. Agrippæ ... peregit' mean that the *commentarii* were used as a supplementary guide to those constructing the map, or that notes from the *commentarii* were included as part of the map?

² See Roddaz: *Marcus Agrippa*, 576. Roddaz, however, doubts whether the *commentarii* were ever published, 587. For a positive view of this point, see further Hanslik in *PW* 9A¹.1272 and Reinhold: *Marcus Agrippa*, 145-6, along with bibliographies in Reinhold, 143 note 12 and Roddaz, 574 note 35. The passages in which Pliny overtly refers to Agrippa are as follows:

3.16	<i>prodidit</i>	5.40	no verb, but a preceding <i>prodit</i> with Eratosthenes as a subject
3.37	<i>trahit</i>	5.65	<i>trahit</i>
3.86	<i>auctor est</i>	5.102	<i>divisit</i>
3.96	<i>prodit</i>	6.3	no verb
3.150	<i>prodidit</i>	6.37	<i>prodidit</i>
4.45	<i>adiicit</i>		

Agrippa specifically for measurements.¹ As these might have been written in a commentary rather than posted upon the map, we cannot say for certain that Pliny consulted one rather than the other. One instance, however, (6.139) seems to suggest that he did actually look at the map. Of Charax he says,

prius fuit a litore stadiis X—maritimum etiam Vipsania porticus habet’.

primo E⁸ p v a. H (D¹) | afuit D² | stadiis d p v -ia R²S. - ios
r D | X D F d R a G (S). X et E⁸ p v (H) D vipsania (U135)
J. -nda (inps- E⁸) ll. S ips- v. pseudo p. inde pseudo B. ipsa
inde H | porticos FR¹. -tos a. -tum p(P) H | habuit (P) H²

On a relatively small-scale world-map, as Dilke says, ‘one could not tell the difference between a seaside place and one 1.25 or 6.25 miles inland’³—unless, of course, one envisages that Agrippa used a particular symbol for a port.

Large-scale public maps, then, probably had details such as countries, mountains, rivers, and important cities marked upon them: occasionally, ‘simulacra pugnarum’ were also included, (Livy 41.28.10). Whether they had other details in

4.60	<i>prodit</i>	6.39	<i>auctor est</i>
4.77	<i>facit</i>	6.57	<i>prodidit</i>
4.78	no verb	6.137	<i>prodidit</i>
4.81	<i>prodidit</i>	6.139	no outright reference to Agrippa himself, but the text reads ‘ <i>Vipsania porticus habet</i> ’ a passage to which I shall return: the text has variant readings.
4.83	<i>tradidit</i>		
4.91	<i>a M. Agrippa tradita est</i>		
4.98	no verb		
4.98	<i>ab Agrippa proditæ</i>		
4.102	<i>credit</i>	6.164	no verb
4.105	<i>computavit</i>	6.196	<i>existimavit</i>
4.118	<i>prodidit</i>	6.207	<i>taxat</i>
5.9	no verb, but the previous verb with Polybius as subject flows naturally from a ‘ <i>prodidit</i> ’ in the ear of the listener.	6.209	<i>fecit</i>

Thomson suggests that the *commentarii* were papers containing Agrippa’s geographical notes and that Augustus published these as a companion-text, *Geography*, 332. Tierney inclines to a similar view, *PRIA* 63 (1963), 152. Arnaud, on the other hand, wonders whether the map itself was not textual rather than cartographic, a suggestion which has not received support. See Dilke: *JRA* 1 (1988), 93. My argument of *auctor* and *prodit* is not conclusive, of course, and one must make allowances for the possibility that Agrippa issued the map alone.

1 The passages are conveniently set out in Dilke: *Maps*, 44-52.

2 This is the Teubner text. Based upon these variants, the Loeb text runs, ‘primo afuit a litore stadios x et maritimum etiam ipsa portum habuit’. There is not yet a Budé edition of this part of the work.

3 *Greek and Roman Maps*, 50.

details such as names of places and sketches of significant trees. The soldier's wife whom Propertius describes (4.3) is, of course, a fictional character, but it is interesting that she has in the house a map which she can consult to see where her husband has been for the last four years. Is this a separate map, an illustration in a book, or a rough sketch which her husband drew before he left? 'Pictos' (37) seems to rule out the last suggestion.¹ It does seem to illustrate, however, Dilke's general observation that, 'the Augustan period was one in which, perhaps for the first time in the Roman world, the use of maps by the man in the street was taken for granted'.²

Finally, we must also bear in mind that land-surveyors, from 78 BC onwards, were in the habit of depositing a copy of their work engraved upon bronze in the official *Tabularium* on the Palatine. A second copy was left in the local office. Some of these were accompanied by a written commentary.³

Which maps, then, were available to Pliny, and when might he have seen them? First, Agrippa's world-map in Rome and, as we have pointed out, there is evidence that Pliny actually did consult it (*NH* 6.139). He also used its measurements in several instances, although whether these were on the map itself or in a manuscript commentary is not clear. There was also a map of Italy on the wall of the Temple of Tellus on the Esquiline, but we have no indication that Pliny consulted this. Corbulo's expeditions to Armenia took place between 58 and 63, and Pliny records that his maps were sent back to Rome to the Emperor and Senate. The military exploration of part of Æthiopia, ordered by Nero, probably took place in the late fifties or early sixties, before 64 at any rate,⁴ and once again the resultant information is likely to have been lodged in official records.

1 Vegetius, admittedly a late authority, tells us that army generals had maps of a kind, 'itineraria provinciarum, in quibus necessitas gerebatur, non tantum adnotata sed etiam picta habuisse firmentur', *Res Militaris* 3.6.

2 'Itineraries and Geographical Maps', in Harley-Woodward: *Cartography*, 1.253.

3 Dilke: 'Maps', in Harley-Woodward, *op. cit.*, 1.210. *Surveyors*, 112-14.

4 It is reported by Seneca (*NQ* 6.8.3) as information which he has obtained from two centurions who were on the expedition. Book 6 is to be dated post February 62 and no later than 63, see Griffin: *Seneca*, 396 and 465, note 2. Isaac [*The Limits of Empire*² (Oxford, 1992), 405] has an interesting comment to make:

It is significant that Pliny, who was confused but diligent, found the information regarding Alexander's campaigns of equal or greater value than the material sent home by troops in his own lifetime. The *situs depicti* that he saw were clearly not Staff maps in any modern sense, but sketches prepared by officers and soldiers. Neither Strabo nor the less critical Pliny found information brought back from military campaigns trustworthy.

Apart from these, we may suggest that wall-paintings, mosaics, paintings and drawings in manuscripts, as well as copies of local land-surveys could have been available to Pliny either in Rome or elsewhere. Whether he made use of them or not is another matter. As Syme has pointed out, the geographical Books of the *NH* can be seen as 'a sorry and messy compilation' and that '(speaking generally) emphasis must be reiterated all through on chance and anomalies in the written sources. Much that had been learned from exploration and warfare failed to get transmitted, let alone diffused'.¹

But there may also have been no especial impetus for Pliny to regard maps as a particularly important source of information. Roman preoccupation with itself as the centre of the known world is likely to have militated against such a frame of mind, and the impression one gets from the geographical Books of the *NH* in particular is that Pliny has an administrator's interest in numbers rather than a surveyor's interest in graphics. *NH* 3.46 provides a good example of this frame of mind:

Nunc ambitum [Italiæ] urbesque enumerabimus, qua in re præfari necessarium est auctorem nos divum Augustum secuturos, descriptionemque ab eo factam Italiæ totius in regiones XI, sed ordine eo qui litorum tractu fiet; urbium quidem vicinitates oratione utique præpropere servari non posse, itaque interiore parte digestionem in litteras eiusdem nos secuturos, coloniarum mentione signata quas ille in eo prodidit numero.

It may be, too, that Pliny was suspicious of illustrations. Certainly he was not happy about the 'effigies herbarum' added to the botanical works of Crateuas, Dionysius and Metrodorus, for he says, 'verum et pictura fallax est coloribus tam numerosis, præsertim in æmulationem naturæ, multumque degenerat transcribentium fors varia', (*NH* 25.8). In consequence, he adds, other writers have

prepared by officers and soldiers. Neither Strabo nor the less critical Pliny found information brought back from military campaigns trustworthy.

¹ *RP* 6.374, 376. In spite of the fact that Corbulo's map of Armenia had been sent to Rome, for example, Pliny still used Aufidius Bassus and the Emperor Claudius as his sources for the dimensions of the country, (6.27). But does this simply mean that Corbulo's maps were *itineraria* rather than over-all cartographic pictures? Rawson's observation is perhaps worth noting here: 'The ancients may have been less able than ourselves to read maps easily, and tended to think in the linear terms fostered by the itinerary and the *periplous*, while generals often remained surprisingly dependent on local guides', *Intellectual Life*, 259.

avoided pictures and concentrated on giving only the names of plants, (*Ibid.*, 9).¹ This raises the question of whether Pliny's *Commentarii* had pictures or sketches. Unfortunately, we can do no more than guess. Works on mathematics, astronomy, mechanics, and engineering contained sketches and drawings from quite an early period. We have examples from the second and first centuries BC.² Histories and epics and collections of shorter poems also carried pictures, sometimes of the author himself.³ That there was an accepted tradition of book-illustration, therefore, cannot be doubted. Whether Pliny chose to include the *NH* in it, however, cannot be ascertained.⁴

(v) AUTOPSY

One obvious source of information for Pliny was the evidence of his own eyes and we may categorise under three heads the people or objects (mainly objects) which he saw: (a) those seen in Rome and Ostia; (b) those seen elsewhere in Italy; (c) those seen outwith Italy. These headings will include, where possible, suggestions about those things or people he may have seen at a particular time, and those to which no exact or even approximate date can be assigned. We may also ask about

1 There is a slight textual problem with 'fors varia'. 'Fors' is the reading of TV U J and 'varia' of U Tv. The Teubner editor prints 'socordia' and Müller, 'sollertia'. Both the Budé and the Loeb editions keep 'fors varia'. See also *NH* 25.27 and 150.

2 See Weitzmann: *Ancient Book Illumination*, 5-6, 7-10. As he says, 'Scientific texts are so in need of illustrations by diagrams that they could hardly have existed at any time without them', *Illustrations in Rolls and Codex*, 47.

3 The example of the latter is Vergil: see Martial 14.186. Varro illustrated his history of famous men with seven hundred portraits, Pliny: *NH* 35.11. Vergil's *Georgics* and Homer's *Iliad* also carried pictures, but our earliest examples of these date to the fourth and fifth century AD. See Weitzmann: *Illumination*, 28 and 35. Weitzmann does suggest (p. 35), however, that the archetype of the illustrated *Iliad* may go back as far as the first century BC.

4 Reece offers a useful caveat. 'It is generally assumed that book illumination has a long history before the year 400, but there is no direct evidence to support such an assumption. All illuminated manuscripts that survive today date from after the year 350: there may have been earlier examples, but none survives', 'Art in late antiquity', in Henig: *Handbook of Roman Art*, 246. He is talking about pictures intended to illustrate non-scientific works, as opposed to the line-drawings which Weitzmann has described. Horsfall also makes the interesting point that papyrus is not a particularly good medium for taking pigment and the scroll-format is hostile to it. Pen and ink drawings (i.e., outlines) are more feasible, *Ægyptus* 63 (1983), 201-2. Illustrated copies of the *NH* do exist, but they are all late Mediæval. See Armstrong: *JWCI* 46 (1983), 19-39. Armstrong observes that, 'although the text of Pliny draws upon ... [illustrated] medical texts, there seems to have been no comparable effort to illustrate the *Historia Naturalis* in antiquity', (p. 21). See also Walter: *JWCI* 53 (1990), 208-16.

the kind of things Pliny could hardly have avoided seeing when, for example, he was in Rome: and whether he shows any predilection for recording autopsy of one object rather than another.¹

(a) Rome and Ostia

In 35, Servilius Nonianus was consul. Pliny says of him, 'quem consulem vidimus', (37.81). It is one of only three examples of this phraseology in the *NH*.² The question is, does 'vidimus' mean (i) 'we saw'; (ii) 'I saw'; (iii) 'existed during my/our lifetime'? Pliny, as we have noted before, frequently uses the first person plural of a verb to refer to himself,³ so there need be no insistence on the plurality of the expression. The *OLD* offers this passage as an illustration of sense (iii), along with another 'vidimus' from Quintilian, 'si quem adiciere velis, is erit Cæsius Bassus, quem nuper vidimus', (*Institutio* 10.1.96). The scholiast to Persius's *Satire* 6 tells us that Bassus died during the eruption of Vesuvius in 79. Quintilian probably produced Book 10 of the *Institutio* between c. 93 and 95,⁴ so it is perfectly possible that Quintilian actually had 'seen' Cæsius Bassus in the literal sense of 'vidimus'. Again, his 'vidimus' in *Institutio* 12.10.11 records sight/knowledge of several famous orators—Seneca, Africanus, Afer, Crispus, Trachalus, Secundus—all of whom appear to be figures of his youth and one of whom, Afer, he certainly did 'see', because he says so.⁵ If, then, Pliny meant that he had actually set eyes on

¹ Pliny's autopsy has been discussed briefly by Kroll in *PW* 21.418 and at greater length by Köves-Zulauf in *ANRW* II.16.1, pp. 216-26. 'Autopsy', as I made clear earlier, does not here include books, documents, inscriptions and so on which have been discussed under their appropriate headings. 'Autopsy' is here restricted to people and objects.

² The other two are discussed later in this section. Pliny's references to consulships almost always take the form one might expect ('Octavio consule', 2.92; 'L. Opimio Q. Fabio coss.', 2.98) and refer to dates BC. For example: 2.99. 100. 145. 147, 148, 199; 3.70, 138; 7.36, 60, 98, 101, 122, 158, 165; 8.19, 85, 131, 213; 10.5, 36, 50; 17.3; 19.40; 22.9, 12; 30.12; 33.19, 55, 135, 138; 35.12, 14; 36.49, 112. Two references AD mention dates before Pliny was born: 2.202 = 19 AD, 'in nostro ævo', making a strong contrast with the distant past, and 33.32 = 22 AD. Not all the information represents Pliny's way of expressing the date. Some comes from the *annales* (e.g., 7.36, 60; 8.131; 10.36, 50); some from another author (e.g., 8.19 = Fenestella); and some from the *Acta Triumphalia* (e.g., 7.98).

³ See Appendix 7 for details.

⁴ See Kennedy: *Quintilian*, 28.

⁵ 'Vidi', 12.11.3. Cf., Pliny the Younger's confirmation of this, *Ep.* 2.14.9-11. Quintilian uses 'vidimus' of the comic actors Demetrius and Stratocles, (*Institutio* 11.3.178), and they are also mentioned by Juvenal, *Satires* 3.99. See further Ferguson: *Prosopography to Juvenal*, 80-1, 217. Courtney thinks that Juvenal published Book 1 of the *Satires* in about 112, *Commentary*, 2. Quintilian writes of

Servilius Nonianus in 35, we may presume that the most likely place for him to have done so was Rome.¹

We find the same usage in *NH* 15.47 where Pliny says, 'Sex. Papinius quem consulem vidimus', a reference to 36 AD. Again, it is reasonable to suggest that Pliny may actually have seen him in Rome. He would have been twelve or thirteen at the time, just the age for schooling with a *grammaticus*.² *NH* 9.117 records that Pliny saw ('vidi') Lollia Paulina at a betrothal party. She was wearing, he says, a fortune in jewellery which had not been given to her by the Emperor, ('nec dona prodigi principis fuerant'), so we should not assume she had yet married Caligula. That marriage took place in late September, 38.³ There is a fairly good possibility, therefore, that we can place Pliny in Rome between c. 35 and c. 38.

At some time during the reign of Claudius (41-54), Pliny saw a hippocentaur preserved in honey, (*NH* 7.35). It was sent to the Emperor from Egypt, so the likelihood is that it landed in Ostia which is where corn and unusual objects such as obelisks were accustomed to put in before being carried up the Tiber to Rome itself.⁴ In another reference Pliny tells us that a killer whale had been trapped in the harbour and speared to death by Roman soldiers; but not before it had managed to sink one of their boats (9.14-15). The *orca*, Pliny tells us, 'venerat tum exædificante eo portum invitata naufragiis tergorum advectorum e Gallia'. *Exædifico* implies that construction had either been finished or was nearing completion.⁵ Claudius ordered work to begin on a completely new harbour in 42. By 46, considerable progress had been made and by 62 the harbour was certainly in use. Meiggs infers that the

both actors in the past tense, so we may presume that both died before c. 93. For Juvenal to have made meaningful allusion to them, their memory must have been reasonably green among the public, so we may perhaps suggest that if Quintilian did actually see them, he did so before the composition of Book Ten. Thus, there is still the possibility that his 'vidimus' refers to sight, either his own or that of himself and the Roman audience.

1 Pliny records an anecdote about Nonianus's being afraid of ophthalmia and attempting to ward it off by magical means, *NH* 28.29. Nonianus was famous as an orator and an historian; hence, perhaps, Pliny's interest.

2 Comum itself does not seem to have had a suitable educational establishment, since Pliny the Younger thought it a proper act of patronage to help found one there, *Ep.* 4.13. It is perhaps interesting to note that he does not seem to have realised that there was no school there.

3 See Barrett: *Caligula*, 89-90 for a résumé of the evidence. Drusilla, Gaius's previous wife, died on 10th June, 38.

4 Meiggs: *Ostia*², 292-3.

5 E.g., Cicero: 'domum Rabirianum Neapoli, quam tu iam dimensam et exædificatam animo habebas, M. Fonteius emit', *Ad Atticum* 1.6.1 = SB 2. Livy: 'Lucretio prorogatum imperium ut Genuam oppidum a Magone Pœno dirutum exædificaret', 30.1.10. Pliny: 'arbore exædificamus tecta', *NH* 12.5. See further TLL s.v.

harbour itself was completed by Claudius's death.¹ In about 50, the first group of warehouses was put up, and since it was a cargo of hides which had caught the *orca's* attention, one may conjecture that (a) the harbour was sufficiently advanced to receive shipping and (b) that there was somewhere in it to store cargo. In consequence, we may date Pliny's reference to between c. 50 and early October, 54.²

Pliny saw the thirty columns of onyx marble which decorated the dining-room of Claudius's powerful freedman, Callistus (36.60), although his text suggests that Callistus need not have been still alive when Pliny saw them.³ Callistus died in 52.⁴ Had Pliny been a client or a guest of his at some point? For the former we have no evidence; for the latter only the slightest of conjectures. Pomponius Secundus, a close friend of Pliny's youth, was awarded the *honus triumphalis* after his victory over the Chatti in 50.⁵ As we do not know at what time of year this campaign was fought, it may have been 50 or 51 before Secundus returned to Rome. He was a man who knew *tout le monde*. Dining with Callistus under Secundus's wing is thus a faint possibility for Pliny, but it is no more than that, and we must allow that Pliny might have gained access to the dining-room at quite some other period.

It was also in Rome, and at the house of Pomponius Secundus, that Pliny saw documents written by Tiberius and Gaius Gracchus, 'annos fere post ducentos', (13.83). I have already pointed out (*supra*, p. 136) that the earliest date to which this refers could be 67, but *fere* shows we are not meant to understand 'annos ducentos' *au pied de la lettre*. There is controversy about when Secundus died. Otto, rejecting a later date proposed by Cichorius, puts it in the late fifties.⁶ If this is correct, we have the possibility that Pliny saw the manuscripts in the late thirties when we can be fairly sure he was in Rome, or in the early fifties when there were opportunities for him to be there.

Pliny also makes five observations in which the name of Nero appears. This does not, however, necessarily indicate that he saw the objects during Nero's reign. For example, he says that he saw ('vidimus') a figure of Nero, sixteen inches high, made of smoky *iaspis*, (37.118). This may have represented Nero at almost any age and so the autopsy could have occurred at any time after December, 37. Since the

1 *Ostia*², 55-6.

2 On the warehouses, see Scramuzza: *The Emperor Claudius*, 168 referring to *CIL* xiv 20. The present participle 'exædificante' emphasises that the coming of the *orca* and the near completion of the harbour were coincidental.

3 'Nos ampliores xxx vidimus in cenatione quam Callistus ... sibi exædificaverat'. One notes the tense of the subordinate verb.

4 Dio Cassius 60.33.3a.

5 Tacitus: *Annales* 12.28.2

6 *Philologus* 90 (1935), 490-3.

image is described as *thoractam*, however, it is a reasonable assumption that it showed Nero at least as a youth, and therefore a date post c. 51 (i.e., after Nero's majority) is perhaps more likely.¹ Secondly, 'Suetonius Paulinus quem consulem vidimus' (5.14) is datable to 66 because of the reference to the consulship, although Pliny's 'vidimus' must be subject to the same reservations we noted earlier. Neither of these references necessarily put Pliny in Rome, although Rome is perhaps the most likely location for them.

The third mentions a painting by Apelles which Pliny had seen before the first fire which had broken out in the Imperial palace on the Palatine, (35.83): 'consumptam eam priore incendio Cæsaris domus in Palatio audio, spectatam nobis ante'.² Croisille, in the Budé note *ad locum*, comments that this is likely to refer to the former of two fires which damaged the buildings in 64 and 69. *Priore* certainly implies that there were two.³

Fourthly, Pliny tells us 'bis vidimus urbem totam cingi domibus principum Gai et Neronis, huius quidem, ne quid deesset, aurea', (36.111). Caligula inherited properties in at least three areas of the City and also had estates outside the City limits. He himself extended Imperial property.⁴ Nero began construction of the *Domus Aurea* in the second half of 64 and seems to have continued work on it for the rest of his reign. Pliny is thus referring to personal knowledge of Rome during the late thirties and the late sixties, both periods consistent with other evidence which suggests he could have been there at those times.

Fifthly, Pliny says he saw ('vidi') pieces of a myrrhine cup, part of property confiscated from an ex-consul by Nero and displayed for sale in the Emperor's private theatre, (37.19). Unfortunately, the text is corrupt at a crucial point and the name of the ex-consul has been lost.⁵

As for works of art and buildings which Pliny almost certainly saw in Rome, Isager points out that his 'information concentrates on the great Roman collections',

¹ It is true that the Emperor Gaius got his nickname from his wearing a miniature version of soldier's uniform when he was a child (Suetonius: *Caligula* 9), but he was brought up in camp and his childhood circumstances are very particular. They do not fit Nero at all.

² 'Nobis' is the reading of the manuscripts. The Teubner edition prints Mayhoff's 'Rhodi'; the Budé prints 'nobis'. Slight variations—'spectatam a nobis', *d*, and 'a nobis spectatam', *h*—support the reading which suggests autopsy.

³ It does not make sense, if we accept the reading 'nobis', to refer to the fire of 3 AD since Pliny could not have seen a picture which was said to have been destroyed in that fire.

⁴ Barrett: *Caligula* 202-10.

⁵ The Teubner note points to Servilius Nonianus whom, as Pliny tells us in 37.81, 'consulem vidimus'. He died in 59.

adding, 'those statues he does mention as being on display in the *Templum Pacis* are usually accorded special discussions, and it is tempting to assume that they originate from Pliny himself'.¹ Actually, Pliny's references to statues and paintings alone cover a wide range of locations, not to mention his remarks about other objects which are likely to have caught his eye.

(a) Statues

On or near the Capitol, (34.10, 39-40, 43, 77; 36.23). In the Forum, (19.50; 34.20). Near the Rostra (34.33, 23, 35, 93). In or near the Porticus Octaviae, (34.31; 36.15, 22, 24, 28-9, 35). In the Forum Boarium, (34.33). On the Campus Martius, (34.39-40). In the Temple of Concord, (34.77, 80, 89, 90). In the Temple of Peace, (36.27). In the Horti Serviliani, (36.23, 25, 36). In Pollio's Library, (36.23, 24, 25). On the Palatine, (36.25, 36). In the Flaminian Circus, (36.26). In the Palatine Library, (34.43; 36.24). In the Circus Maximus, (18.8; 34.57). In the Portico ad Nationes, (36.39).²

(b) Paintings

In the Temple of Faith on the Capitol, (35.100). In the Porticus Octaviae, (35.114, 139). In the Temple of Concord, (35.66, 144). In the Temple of Peace, (35.74, 102). In the Portico of Philippus, (35.66, 114, 144). In the Temple of Diana, (35.94). In the Portico of Pompey, (35.114, 132).

(c) Other Objects

A large cinnamon-root in a golden bowl in the Temple of Augustus on the Palatine, (12.94). Pliny records this as autopsy ('vidimus') and adds that 'delubrum incendio consumptum est'. We are not sure when it was destroyed, but if Platner is right in suggesting that it is the same as the *aedes Caesarum* mentioned by Suetonius (*Galba* 1), then it was still standing in 69.³ Perhaps the bolt of lightning which struck it caused the fire.

A lotos-tree near the altar of Vulcan at the foot of the Capitol, (16.236).

An oak on the Vatican Hill, with a bronze tablet engraved with Etruscan letters, (16.237).

A bronze ox in the Forum Boarium, (34.10); bronze capitals in the Pantheon of Marcus Agrippa, (34.10; cf., 36.38); lamp-holders in the Temple of Apollo on the Palatine, (34.13); bronze heads on the Capitol. (34.44); works of art in the Temple of Peace, (34.84); works of art in the collection of Asinius Pollio who actively encouraged sight-seers, (36.50); a very large specimen of the stone *basanites* in the

¹ *Pliny on Art and Society*, 168.

² Pliny also records statues in the atrium of Titus's villa, (34.55; 36.37). We cannot be sure that he means a villa in Rome.

³ *Topographical Dictionary of Ancient Rome*, 62-3.

Temple of Peace, (36.58); obelisks in the Circus Maximus, (36.71), the Campus Martius, (36.72), and the Circus Vaticanus, (36.74); the Circus Maximus itself, (36.102); the Forum of Augustus, (36.102), the Temple of Peace, (36.102); the Diribitorium of Agrippa, (36.102); and a specimen of rock crystal on the Capitol, 'visa nobis', (37.27).¹

Most of what Pliny saw in Rome was thus what he could scarcely have avoided seeing unless he had walked round with his eyes shut. If there is direct evidence of his autopsy of any of the above, I have indicated it. One should note, therefore, that one is making an assumption about most of them, but the assumption is surely justified. Pliny seems to have taken careful note of statues and paintings, but references are drawn almost entirely from Books 34 and 36 which devote themselves to art, so the coincidence is hardly surprising. What the evidence does suggest is that Pliny was alert as he walked round the capital city and that his own observation probably paid quite a large part in contributing to his discussion in those two Books.²

As far as the dates are concerned, the evidence suggests that Pliny was in Rome between c. 35-c. 38; in Ostia and Rome in the early fifties; and in Rome during the late sixties. These dates do not conflict with either Model A or Model B of Pliny's life and career, which were proposed in Chapter One.³

¹ Pliny also records seeing elephants, tigers and lions (11.14), and duelling bulls (8.182), all of which he could have seen in the Roman amphitheatre although, of course, there were amphitheatres elsewhere and the bulls might be associated with Spain. He also saw the embalmed bodies of two Roman *equites* (7.75); turnips which weighed over forty pounds (18.128); very fine hunting nets (19.11); the plant *lithospermum* which he found extraordinary (27.99: 'nec quicquam inter herbas maiore equidem miraculo aspexi ... ego volsam non hærentem vidi'); and the renegade Arellius Fuscus bedizened with silver rings (33.152). None of these, however, can definitely be assigned either to Rome or to any other specific location. Pliny also paid at least one visit to the herb-garden of Antonius Castor (25.9), but whether this was in Rome or elsewhere we cannot say.

² This contrasts with the view of Sellers who was of the opinion that Pliny was essentially a compiler, with little personal interest in art, and whose contribution to this discussion of the subject was not very great. See *Chapters on the History of Art*, xciii. Coulson, on the other hand, having made a careful study of Books 34 and 36, came to the conclusion that Pliny was not merely a compiler of information, but a fairly original author. This originality can be seen in his descriptions of works of art in Rome, which he probably saw; and the value of these two Books lies in the way Pliny combines his own observations with an avid and careful scholarship. See *Studies in Chapters 34 and 36 of Pliny the Elder's Natural History*, unpublished PhD thesis (1968), Princeton, chapter one.

³ See *supra*, pp. 102-3. The Münzer-Syme model (A) leaves plenty of time for Pliny to visit or be in Rome during the late fifties and sixties. My model (B) specifically suggests he came to Rome in 34/35 to further his education, and has him

(b) Italy

Pliny tells us that he saw Agrippina at the mock naval battle with which Claudius celebrated completion of his engineering project in the Fucine Lake (33.63). We know from Tacitus that the date was 52.¹ It is interesting that Pliny mentions as the object of autopsy a tree in Tibur, which had been grafted in such a way as to bear all kinds of different fruit simultaneously, (17.20). Tibur is on the way to Lake Fucinus along the Via Valeria from Rome. Similarly Populonium (also known as Populonia) where he caught sight of ('conspicimus') a statue of Jupiter made from an ancient vine-stalk (14.9) is on the coast just off the Via Aurelia north-west of Rome. If Pliny had taken the coastal route on his way to Rome from Comum (or, of course, vice versa), it would not have been more than a three or four mile detour to visit Populonium.²

By a singular coincidence, we may also link one or two more places in which Pliny records autopsy. The fishermen of Campania used to take the root of a plant called *aristolochia*, crush it, mix it with lime, and scatter it over the sea, a custom which, Pliny says, took place 'coram nobis' (25.98). In Campania, too, he probably saw the country houses covered by the shoots and branches of a single vine ('vidi', 14.11).³ On one occasion 'hyænam piscem vidi in Ænaria insula captum', (32.154). Ænaria is now called Ischia and is in the Bay of Naples, nearly opposite Cape

fulfilling a civilian career (presumably in Comum) until c. 54 when he entered the army.

¹ *Annales*, 12.57. Pliny's text gives 'vidimus'. In view of the date, it is interesting that Pliny also says 'vidimus' in relation to Claudius's giving his freedman Pallas the insignia of a *prætor* in January that same year, (35.201. See also Levick: *Claudius*, 75). If Pliny had been in Rome for any length of time in 52, that 'vidimus' might be taken literally rather than as a reference to an event 'in our time'.

² Comum is over 400 miles away from Rome along the ancient roads. Pliny's most likely route would have taken him from Rome along the Via Aurelia by the coast as far as Pisæ, then to Luca, Forum Claudii, and Parma where he would pick up the Via Æmilia Scauri and go to Placentia, then to Mediolanum, and thence to Comum. Government couriers could travel at the rate of about fifty miles a day, (Casson: *Travel*, 188). There is scarcely any need to suggest that Pliny might not have been accustomed to travel with similar ease, especially in the early years when he was nobody in particular but in his later years facilities for haste could have been at his disposal. It is likely, however, that a single journey between Comum and Rome would have taken him anything up to ten days or a fortnight to complete—not an experience to be undertaken lightly.

³ 'In Campano agro', he says, the vines soar to prodigious heights, 'nulla fine crescendi'. He then goes on at once with the reference I have quoted. It seems clear that he is almost certainly talking about the same area.

Misenum. The *hyæna* is probably the *Charax puntazzo*,¹ a sea-fish which is common in the Mediterranean and whose fishing-season is autumn and winter. 'In Ænaria insula' may suggest that Pliny saw it on the island itself. On the other hand, Cumæ, Baiæ, Naples, Puteoli, and Misenum itself are not all that far away, and any one would have provided Pliny with his opportunity. In Ardea, Pliny admired ('mirror') 'antiquiores urbe picturæ Ardeæ in ædibus sacris', (35.17), the context making it clear that this is autopsy. Had Pliny been travelling to Misenum or to any of the fashionable watering-spots on the Bay of Naples—and we know that in 79 at least, if not earlier, he must have made the journey to Misenum as Prefect of the Fleet—he would have travelled by the coast road which led there directly from Rome. Ardea is only two or three miles off that road, about twenty-four miles south of Rome.²

I should like to suggest, then, (entirely by way of speculation and without necessarily limiting Pliny's trips to Tibur or Ardea to known occasions), (a) that Pliny's autopsy in Tibur could have taken place in 52 while he was on his way to Claudius's spectacle at Lake Fucinus; (b) that his autopsy in Populonium may have happened during one of his journeys between Rome and Comum; (c) that his autopsy in Ardea could have been made during a journey, perhaps undertaken in the later seventies when he was going to or from Misenum as Prefect of the Fleet. Finally, a possible instance of autopsy in the Alps can be found in 37.27 discussing crystal: 'nos liquido adfirmare possumus in cautibus Alpium nasci adeo inviis plerumque ut fune pendentibus eam extrahant'. Here *adfirmare* suggests that Pliny saw this for himself, although it is also possible, of course, that he got his information at second hand.³

¹ D'Arcy Thompson: *Glossary of Greek Fishes*, sv ὑαίνα. See also the Budé note *ad locum*.

² After mentioning Ardea, he goes on to say 'similiter Lanuvi' and then (37.18) 'durant et Cære antiquiores'. Cære is on the Via Aurelia a few miles north of Rome; Ardea and Lanuvium on or very near the coastal road a few miles south. Both Lanuvium and Cære could have been visited by Pliny without detour on his route to Comum or to Misenum. A few miles south-east of Rome, on the Via Latina, is Tusculum. Pliny describes a sacred grove on a hill not far from the city and an oak near the hill 'decem arbores emittens singulas magnitudinis visendæ silvamque sola faciens', (16.242). Is it possible that 'visendæ' hints at autopsy?

³ One wonders about Pliny's personal knowledge in relation to one or two other references. In 19.9, he refers to the linen of the Alia region between the River Po and Ticino, and in particular to that of Retovium near that same region. We do not know where Retovium was exactly, but the whole district is only about twenty miles south-west of Comum, so it is possible that Pliny had personal knowledge of these linens.

(c) Outwith Italy

Pliny was witness to a number of things he recorded as autopsy. From Germania Inferior come two instances; first, *re* the plant *casia*, 'quin et in nostro orbe seritur, extremoque in margine imperii, qua Rhenus adluit, vidi in alvariis apium satam', (12.98); second, 'sunt vero et in septentrione visæ nobis Chaucorum qui maiores minoresque appellantur', (16.2). I have discussed both these passages in Chapter 1, (*supra*, pp. 28 and 30 sq.). They come from what I take to be Pliny's military experience in the IJsselmeer region and, according to my suggestion, can be dated to the fifties or early sixties.

I have also suggested (*supra*, pp. 68-9) that Pliny's autopsies in Gallia Narbonensis do not necessarily point to his having been procurator there, but can be explained perfectly well by visits to Paulinus at Arelate and to Avitus at Vasio while he was on his way to a procuratorship in Hispania Tarraconensis.¹ In Lacetania, just north of the city of Tarraco, Pliny learned ('cognovi') that a plant called *dracunculus* had recently been discovered, (25.18). Since Pliny describes the plant and says it was found on the land of the person with whom he was staying, there is a good chance that this is a record of autopsy. In Africa he saw ('vidi') a woman who had turned into a man on the day of his/her wedding, (7.36); fertile land near Byzacium in Africa, being turned by no more than an old woman and a donkey-drawn plough, (17.41); and members of the African Psylli tribe amusing themselves with fights between poisonous toads, (25.123). These autopsies in Gaul, Spain and Africa can probably be dated to the seventies.²

Conclusions

- (i) Pliny seems to have been in Rome at some point between c. 35 and c. 38.
- (ii) He was in the region of Ostia-Rome in the early fifties, between about 50 and c. 54. A visit to the Fucine area in 52 seems likely.
- (iii) He may have been in Rome in the mid sixties.
- (iv) He was in Gallia Narbonensis, Africa and Hispania Tarraconensis probably in the early seventies.
- (v) He noticed, as he could scarcely avoid doing, many of the major buildings, important works of art, and curiosities in the capital.

¹ The references are (a) 'ego ipse vidi [lapidem] in Vocontiorum agro paulo ante delatum', (2.150) and (b) 'conspicimus ... Massiliæ pateram', (14.9).

² Unless, of course, one goes along with Sherwin-White who had put the African procuratorship in the early years of Nero and the Spanish 'before 66 or after 69', *Letters*, 221. It is a thesis hard to accept, however, in the face of the *Vita's* information that Pliny 'procuraciones ... continuas ... administravit'.

(vi) He seems to have shown a particular interest in statues and paintings, but here we may be misled by the inevitable bias of the subject-matter in Books 34 and 36.

(vi) ORAL EVIDENCE

'Oral evidence' in this context refers to evidence gathered from a conversation of some kind. 'Nuper', Pliny writes at one point, for example, 'consularem virum audivi biferas et iuglandes nuces habere se profitentem', (15.91). 'Audio et Stoicos et dialecticos, Epicureos quoque ... parturire adversus libellos quos de grammatica edidi', (*Præf.* 28). Of a cucumber shaped like a quince, recently produced in Campania, he says, 'forte primo natum ita audio unum, mox semine ex illo genus factum', (19.67) and continues, 'melopeponas vocant', thereby implying that he has been talking to more than one person there. 'Audio', he says of a painting by Apelles, 'consumptam eam priore incendio Cæsaris domus in Palatio ... spectatam nobis ante', (35.83).¹ Various anecdotes about the uses of perfume, especially by Caligula and Nero, are introduced by 'audivimus', (13.22). Thus, we have miscellaneous pieces of information which can either be attributed to Pliny's hearing them rather than reading them, or that we may reasonably infer were gathered in this way.

On several occasions Pliny sought advice about plants. In 24.150, he describes three: (a) 'id autem quod Græci dracontium vocant triplici effigie demonstratum mihi est'; (b) 'alii radice longa veluti signata articulosque monstravere'; (c) 'tertia demonstratio fuit folio maiore quam cornus', etc. As 'demonstratum', 'monstravere' and 'demonstratio' suggest, Pliny seems to have been looking at what he was shown, and the natural inference is that he was asking questions and receiving answers. But was he looking at specimens of the plants themselves, or at pictures in a book (or in more than one book)? The word *effigies* seems to have the following meanings in Pliny's usage:

- (i) Something which looks like something else or reminds one of something else—Sardinia has the shape of a shoe (3.85), a gulf outline looks like the human head (6.108).²
- (ii) The appearance of the thing itself—'effigiem dei formamque quærere imbecillitatis humanæ reor', (2.14).³

¹ 'Nobis' is the reading of several manuscripts. Mayoff suggested 'Rhodi' and incorporated it in his Teubner text, but the suggestion has not found favour.

² Also, 2.51, 90, 101, 110; 11.120; 25.161; 38.187. Cf., 6.187; 2.189 and 9.179.

³ Cf., '[Luna] in quadrato solis dividua est, in triquetra seminani ambitur orbe, impletur autem in adverso, rursusque minuens easdem effigies paribus edit intervallis', etc., (2.80).

The former, applied to 24.150, would suggest a picture of some sort; the latter a specimen of the plant. I suppose it depends on the time of year Pliny made his visit whether he saw the one or the other (or, of course, both).¹ It is notable that two of these occasions also passed on information about the plant's medical uses, so the likelihood is that Pliny was consulting medical herbalists.²

Indeed, we know that Pliny certainly made at least one such visit to one of the most respected botanists of the period, Antonius Castor.

Nobis certe, exceptis admodum paucis, contigit reliquas contemplari scientia Antoni Castoris, cui summa auctoritas erat in ea arte [i.e., botany] nostro ævo, visendo hortulo eius in quo plurimas alebat centesimum annum ætatis excedens, nullum corporis malum expertus, ac ne ætate quidem memoria aut vigore concussis, (25.9)

It can hardly be supposed that Pliny remained dumb and deaf throughout his visit (or visits) and indeed it is possible that we have an example of one of Castor's descriptions of a plant in 20.176 where Pliny says, 'Castor et aliter demonstrabat'.³

But Castor was not the only herbalist Pliny visited. In 25.27 he tells us, 'inveni e peritis herbarum medicis qui et in Italia nasci [moly] eam diceret, adferrique e Campania mihi aliquot diebus effosam inter difficultates saxæas radicis XXX pedes longæ ac ne sic quidem solidæ, sed abruptæ'.⁴ It is an interesting example of the possibility that Pliny may have seen rare or unusual specimens of things which had been fetched to him for his convenience. References to 'nostri herbarii ... vocant' (22.147; 25.174) or 'indicavere' (27.67) suggest, if they do not specifically say, that Pliny gathered information by question and answer, as do similar references to 'nostri unguentarii'.⁵

Other instances of oral and probable oral evidence are scattered throughout the *NH*. On a personal note Pliny tells us that 'gausapæ patris mei memoria cœpere', (8.193), which sounds like oral transmission in the family. We also know that Pliny questioned veterans from Corbulo's army and royal hostages sent, probably but not necessarily, to Rome after Corbulo's Armenian campaign (6.23). The Armenian Wars began in 58, were renewed in 61, and ended in 63. Pliny's interviews will have taken place, then, at some point in the late fifties or early sixties.

¹ That herbalists did illustrate their books we know from Pliny himself. 'Crateuas, Dionysius, Metrodorus ... pinxere effigies herbarum', (25.8).

² Cf., 'Mihi et tertia cyclaminos demonstrata est', (25.116).

³ Pliny acknowledges Castor as a source of information for Books 20-27.

⁴ 'Mihi' is the reading of *ll* and *v*: 'memini' of *J*. Mayhoff's Teubner text prints his own suggestion 'autumni'. The Budé and Loeb editions have 'mihi'.

⁵ See 12.68, 102, 123, 125; 31.91.

In 31.25 he records that Ctesias had written about a type of very dark fish which was poisonous, 'quod et circa Danuvii exortum audivi, donec veniatur ad fontem alveo adpositum, ubi finitur id genus piscium ideoque ibi caput amnis eius intellegit fama'. Clearly Pliny has received verbal information and may have received it on the spot, perhaps during his military service in Germany.

Conclusions

- (i) Pliny asked questions during the course of his travels within and outwith Italy and either remembered or recorded the answers received.
- (ii) He particularly consulted *herbarii* and *unguentarii*.
- (iii) He visited the famous botanist Antonius Castor on at least one occasion and was shown specimens of plants in Castor's garden.

General Summary

- (i) Pliny could have consulted books in more than one public library in Rome. These had separate sections devoted to Greek and Latin works, and this separation may lie behind Pliny's arrangement of his sources in Book 1 as *ex auctoribus* [i.e., Latin] and *externis* [i.e., Greek].
- (ii) Public libraries outwith Rome were not particularly common in the West in his day, but there were private collections to which he could have had access.
- (iii) People often took books with them when they travelled.
- (iv) Pliny had access to archival material of one kind and another, especially in Rome. Presumably the Imperial archives, too, would have been open to him, particularly notably after Vespasian's accession.¹
- (v) Maps were available, particularly the large public map set up by Agrippa in the Porticus Vipsania.
- (vi) Pliny used his eyes to observe and made notes of what he saw, especially paintings and statues in Rome.
- (vii) He questioned people, especially those dealing with plants and perfumes, and recorded information received in this fashion.²

¹ Hence, perhaps, his use of the autobiographies of Claudius and Agrippina and, maybe, Augustus's letters, unless one assumes that these had been published.

² Cf., Dionysius of Halicarnassus who received oral information as well as written, 1.7.3; 1.6.1-2.

Composing the *Naturalis Historia*

Now that we have seen how wide a range of sources was open to Pliny for purposes of research, we are in a position to discuss the ways in which he used them. Here we can envisage four stages. First, the reading, inquiring, looking; then the preliminary recording, whether this means committing to memory, jotting down notes in *pugillares*, or writing straight into *commentarii*; then, (unless we are to envisage Pliny's going straight from the first stage to this), recording information in *commentarii* which, one may reasonably assume, had some kind of built-in arrangement to receive material in a particular way. This is a point which will be elaborated later in the chapter. Finally, composition of the *NH*, perhaps based on the material of the *commentarii*, although one should note that one ought not to take this for granted. To be sure, people do, but Pliny the Younger does not say this was so and the two works are recorded separately in his letter to Bæbius Macer.

But before we embark on a discussion of these steps, it is worth re-making a point about Pliny's reputation for being a voracious reader and a prodigious worker. It is based upon his nephew's remarks in a letter to Bæbius Macer, looking back about twenty-five or twenty-six years to when he was seventeen. After studying under a *grammaticus* in Comum, he went to Rome to pursue a course of rhetoric under Quintilian.¹ The customary age for boys to join such a school was about fifteen.² Pliny the Younger was therefore in Rome in c 76/77 and this is one of two dates I have suggested for the elder Pliny's beginning composition of the *NH*.³ So it is possible that the younger Pliny was observing his uncle at close quarters at precisely the time when the older man was particularly busy; and if the *NH* was indeed being written and even partly researched between c 76 and c 78, the impression of frenzied reading and note-taking would have been that much greater.

¹ Uncle's energy, *Ep.* 3.5.7, 14-16, 18. Age, *Ep.* 6.20.5. *Grammaticus*, *Ep.* 1.19.1. Rome, *Ep.* 2.14.9; 6.6.3.

² Bonner: *Education*, 137.

³ If we accept the other possible starting-date, c. 72, the force of the following remarks is weakened, although not entirely dissipated.

We know that Pliny used secretaries and worked them hard.¹ We must, therefore, constantly bear in mind that, when we talk of Pliny's researching this, or Pliny's writing that, there is a good chance the work was done in whole or in part by one or other of his secretaries. Pliny was an important government official at the time he came to compose the *NH*. We cannot expect him to have undertaken every mechanical task himself.

A) WORKING METHODS

When it comes to our endeavouring to work out some of the details of Pliny's *modus operandi*, we are fortunate enough to have one or two pointers, both from Pliny himself, and from his nephew. Pliny tells us that he 'found' certain pieces of information during the course of his research, and the nephew that his uncle 'adnotabat excerpebatque'. I now propose to review these signals, and to consider what role, if any, dictation, memory and memorisation may have played in the process.

I) *Invenire et Reperire*

(i) *Invenio*. Out of 48 examples, 12 refer simply to 'authors', either *auctores Græci* or *auctores medici*, or unnamed *quidam*.² Four more refer to the subject-matter of the books in question or to a named author. (a) 'In Etruscae disciplinae voluminibus invenio', (2.199). Works by Cæcina, Tarquitiu and Julius Aquila are cited in Book 1 under this heading. Cæcina and Tarquitiu were near contemporaries during the mid first century BC, Tarquitiu being the elder. We cannot give a date to Aquila. Cæcina's work was consulted by Seneca for his *Naturales Quaestiones* (dated to c 62-3 AD), so it is perfectly possible that it was available to Pliny

¹ See, for example, Pliny the Younger: 'ad latus notarius cum libro et pugillaribus, cuius manus hieme manicis muniebantur, ut ne caeli quidem ullum studii tempus eriperet', *Ep.* 3.15.5. According to Quintilian, however, secretaries were not always reliable. Of Seneca he says, 'cuius et multae alioqui et magnae virtutes fuerunt ... multa rerum cognitio, in qua tamen aliquando ab his, quibus inquirenda quaedam mandabat deceptus est', *Institutio* 10.1.128. One wonders how he knew and also why he mentioned it. Was it because other people did not rely so much on secretaries; or were they simply more cautious than Seneca?

² *Auctores Græci*: 11.115; 18.123; 22.11, 110; 23.141; 24.80; 28.151. *Auctores medici*: 28.188; 32.134; 37.28. *Quidam*: 24.94; 32.134.

only ten years or so later.¹ (b) 'Hoc primum antiquis cenarum interdictis exceptum invenio', (10.139). Book 1 records *Acta* among the sources for Book 10. (c) 'Boum quoque scabiem celerrime sanari ea invenio, apud Nicandrum quidem et serpentium morsus, antequam floret', (21.183). *Theriaca* 626 simply says, (μη σύ ... λιπεῖν) κόρκορον ἢ μύωπα and includes the herb in a list of similar apotropaics. It is not immediately clear why Pliny added 'antequam floret'. Perhaps he did not consult Nicander's work directly but got the quotation or reference from another medical work which provided the phrase or something along those lines. (d) 'Apud Theophrastum invenio', (31.83). This presents a problem. There is no similar reference in any of Theophrastus's remaining works, but it is very like a passage in Aristotle's *Meteorologica* (359a35-b4).

Pliny

Apud Theophrastum invenio Umbros harundinis et iunei cinerem decoquere aqua solitos donec exiguum superesset umoris.

Aristotle

τοιοῦτον δ' ἕτερον γίγνεται καὶ ἐν Ὀμβρικοῖς· ἔστι γάρ τις τόπος ἐν ᾧ πεφύκασι κάλαμοι καὶ σχοῖνος· τούτων κατακάουσι, καὶ τὴν τέφραν ἐμβάλλοντες εἰς ὕδαρ ἀφέψουσιν· ὅταν δὲ λίπωσί τι μέρος τοῦ ὕδατος, τοῦτο ψυχθὲν ἀλῶν γίγνεται πλῆθος.

Perhaps it represents a simple misattribution in Pliny's notes; perhaps Theophrastus said something very similar in a lost work such as *Περὶ Χυμῶν*.²

The remaining examples give no direct sign that they are taken from Pliny's reading, but their contexts suggest that one must understand them thus.³ To this, however, there is an interesting exception in 27.124: 'Phalangitis a quibusdam phalangion vocatur, ab aliis leucanthemum vel, ut in quibusdam exemplaribus invenio, leucacantha'. *Exemplar* is used by Pliny to refer to examples of works of art or, on one occasion, to the

¹ On *Cæcina*, see Cicero: *Ad Familiares* 6.6.3 = SB 234. Seneca: *NQ* 2.39 and 2.56.1 ('hoc apud Cæcinam invenio'). On Tarquitiuus, see *PW*² 4.2392-4, n^o 7.

² Diogenes Lærtius, *VS* 5.43.

³ 6.72; 8.28; 12.61; 14.107; 17.53; 19.151, 156; 20.68, 87, 143; 21.30, 112, 119; 22.58; 24.24, 80, 177; 26.107; 28.75, 76; 30.8, 29, 31; 32.120, 133; 33.121; 34.13, 26; 36.49, 50; 37.103, 104, 187.

specimen of a plant.¹ But he also uses it to refer to copies of books. Thus, for example: 'in quibusdam exemplaribus diversi numeri reperiuntur', (6.62, referring to the works of Diognetus and Bæton); 'ad Sydrum $\overline{\text{CLXIX}}$, Iomanem manem tantundem (aliqua exemplaria adiciunt $\overline{\text{V}}$ passuum)', (6.63); 'Iuba ... omisit in hoc tractu (nisi exemplarium vitium est)', (6.170); 'sed neque regionem in qua id fiat nec quicquam diligentius præterquam eriophoron id appellari in exemplaribus quæ equidem invenerim tradit [Theophrastus]', (19.32).²

Obviously, Pliny has been able to consult different copies of the same work of Theophrastus. Whether the other examples imply that he himself (or his secretary) had consulted various copies or whether the author of the book he was reading had noted these variants is unclear. But even if we allow only the example of Theophrastus as a definitive indication of Pliny's personal involvement, we are still presented with the question, why should he have done so? We must not be anachronistic and attribute to him the motives and methods of a modern textual or literary critic, so a closer look at the contexts of these *exemplaria* may suggest an answer. In these four examples, Pliny is making two observations: (a) there is a difference in the estimates of distances in the works of Diognetus and Bæton, (b) Juba and Theophrastus have omitted certain information. Now, there are plenty of examples of Pliny's drawing attention to differences between estimates of distances. From Book 6 alone come a dozen.³ Either these were already recorded in the particular account he was using for a given area, or he remembered what one author had said and both noticed and noted discrepancies when he read another. Nevertheless, this is not quite the same as his saying that he had found differences *in exemplaribus* which implies different copies of the same

¹ 33.157; 34.10; 35.125. Plant = 25.7. Cf., 11.246 where he says that the internal organs of apes are just like those of humans, i.e., 'copies'.

² Cf., Suetonius: 'nam in quibusdam exemplaribus invenio ne inscriptam quidem "pro Metello" sed "quam scripsit Metello"', *Julius* 55.3. 'Plurimum cœptis contulerunt iactatum exemplar epistolæ veræ sive falsæ defuncti Othonis ad Vespasianum', *Vespasian* 6.4. Gellius: 'In *IV in Verrem* M. Tulli in exemplaribus fidelissimis ita inveni scriptum', etc., *NA* 12.10.6. Pliny: 'Eundem in exemplaria mille transcriptum per totam Italiam provinciasque dimisit', *Ep.* 4.7.2, referring to the biography of a dead son which Regulus first read aloud to an assembled audience and then distributed.

³ 6.3, 6, 31, 36, 37, 56-7, 63, 124, 163-4, 183, 206-7, 207.

work rather than copies of different works by different authors. Had this been what he meant, one would have expected him to use the word *auctores* as he does, for example, when he remarks on the variations in measurements he has found—‘inconstantiam mensuræ diversitas auctorum facit’, (6.124)—or when he notices that accounts agree—‘esse inter auctores fere convenit’, (6.196).

Perhaps it is significant that three of the four examples of this use of *exemplar* come from Book 6 whose subject is geography. At the beginning of the geographical section of the *NH*, Pliny makes it clear that he will be using several authors and not just one;¹ and indeed it is a feature of Books 3-6 (including the later sections of Book 2 which deal with geographical measurements) that when discrepancies between measurements, usually large ones, are to be found, Pliny records them faithfully.² A remark near the beginning of Book 3 may be significant: ‘aliunde aliis exordium mensuræ est et alia meatus; ita fit ut nulli duo concinant’, (3.16).³ It may have been this kind of realisation—as well as the awareness which surely no one at the time can have lacked, that manuscript copies of books often contained mistakes⁴—which alerted Pliny not only to the differences between authors when it came to measurements, but also to the potential differences in manuscript versions of the same author. Theophrastus is acknowledged as a source as early as Book 2 and Juba for Book 5. Awareness of the desirability of examining variant copies of these two authors, as well as of Diognetus and Bæton, may thus have been stimulated by Pliny’s work on geography.⁵ The fact that all four points involving *exemplaria* are geographical is thus significant.

But there is still the question of why Pliny should have thought it worthwhile to examine manuscripts by the same author. One can

1 ‘auctorem neminem unum sequar, sed ut quemque verissimum in quaque parte arbitror’, (3.1).

2 See 2.242, 245, 247; 3.129, 132; 4.45, 50, 77-8, 114; 5.40, 129, 132, 136, 139.

3 This is a point he mentions again later. ‘In latitudinem [Alpium]

Cornelius Nepos \bar{c} , T. Livius \bar{m} stadiorum, uterque diversis in locis’, (3.132).

4 Suetonius: “Pro Quinto Metello” non immerito Augustus existimat magis ab actuariis exceptum male subsequentibus verba dicentis, quam ab ipso editam’, *Julius* 55.3. Cf., the general remarks of Reynolds-Wilson: *Scribes and Scholars*, 5.

5 Pliny may have examined other authors too, of course, but these are the only four examples of *exemplaria* in the sense of ‘copy’ we have from the *NH*.

envisage his reading a volume, say, in the Palatine Library, going back next time to find that the volume was not available, and so deciding to consult the copy held by the Octavian Library wherein he discovered—perhaps by chance—that the information therein was different from that in the Palatine copy. This will account, at least conjecturally, for his remarks about Diognetus and Bæton,¹ if we accept that he himself looked at the different copies. Even if we do not, it will account for *somebody's* looking at the variants. It will also account for the suspicion he (or another) entertains about Juba's omission of two place-names. But why would he have looked at more than one copy of Theophrastus? The question, in spite of my earlier suggestion about the stimulus provided by geography, is not really susceptible of an answer but perhaps Pliny found that different later authors attributed different words to Theophrastus and so he went back to manuscripts of Theophrastus to check.

(ii) *Inveni*. This is found only four times: (a) this occurs at the end of a discussion of differences in markings and nomenclature of panthers—'sunt qui tradunt ... quidam discernunt'—when Pliny adds, 'nec adhuc aliam differentiam inveni', (8.63). The 'adhuc' is interesting. It seems to imply that Pliny intends to go on with his research into this subject. Here, too, the first person singular contrasts with the preceding third persons plural: *they* distinguish and *I* have not yet discovered. (b) [on the *incendaria avis*]. 'Alii spinturnicem eam vocant, sed hæc ipsa quæ esset inter aves qui se scire diceret non inveni', (10.36). (c) 'Quin etiam inveni apud auctores caput inlitum ea [porcillaca] distillationem anno toto non sentire', (20.215). (d) 'Inveni e peritis herbarum medicis qui et in Italia nasci eam [moly] diceret, adferrique e Campania mihi aliquot diebus effossam inter difficultes saxeas', (25.27). We have already met this example of oral evidence, (*supra*, p. 239). Here *inveni* has the sense of 'I met' rather than 'I have discovered'. It is interesting that two of these four examples are negative. 'Non inveni' carries with it the possible implication of effort, that Pliny has made more than one attempt to discover a piece of information.

(iii) *Invenimus*. The problem here is twofold. First, one cannot be sure in any given instance whether the verb is meant to be taken in a plural sense—'we (that is, you and I as general readers)'—or whether it

¹ It would work equally well, of course, if one envisaged him using a library in one place, whether Rome or not, and then another in another.

represents the editorial 'we', meaning Pliny himself. That this second usage is very common, indeed usual, in the *NH* can be seen from Appendix 2. Secondly, the context does not always make it clear whether *invenimus* is in the Present or the Perfect Tense. This is an important point, for the Present may suggest the more general of the two senses above, whereas the Perfect may perhaps imply the particular. For example, 'invenimus in annalibus' followed by an anecdote about a change of sex (7.36) may mean either 'one can find this story in the Annals' or 'I have found this story in the Annals'. This ambiguity is present in seven other examples.¹

In others, the context makes it reasonably clear that the verb refers to Pliny. For example, 'intravere autem et eo arma Romana divi Augusti temporibus duce P. Petronio ... Is oppida eorum expugnavit quæ sola invenimus quo dicemus ordine', etc, (6.181).² Similarly, in these instances, the context suggests that a general and not a particular sense is required: (a) 'pugillarium enim usum fuisse etiam ante Troiana tempora invenimus apud Homerum', (13.69); (b) 'quidam vero numquam, quibus mortiferum fuisse signum contra consuetudinem somnium invenimus exempla', (10.211). Whether this example is general or particular, however, depends on whether one takes *invenimus* as a Perfect or Present Tense. The former will suggest that Pliny is the subject, the latter 'we'. (c) 'non erat mos nisi calida tantum lavari, sicut apud Homerum etiam invenimus', (25.77).

Finally, two references seem to indicate that Pliny should be taken as the subject of the verb: (a) 'præcipua magnitudine thynni; invenimus talenta XV pependisse, eiusdem caudæ latitudinem duo cubita est palmum', (9.44); (b) 'Chrysippus philosophus tradidit phryganion adalligatum remedio esse quaternis. Quod esset animal neque ille descripsit nec nos invenimus qui novisset', (30.103).

(iv) *Invenitur*. There are eleven examples of this. In six, Pliny directs the reader's attention to named sources: (a) 7.60 (*Acta*), (b) 7.186 (*Acta*), (c) (*Annales*), (d) 13.21 (Cicero), (e) 17.119 (Greek authors and Cato), (f) 26.19 (Democritus). Four are more vague: (g) 12.7 (*auctores*), (h) 16.129 (*auctores*), (i) 28.65 (*auctores*), (j) 36.176 (*leges*). One (34.25) does not give a

1 Namely, 7.76; 8.156; 10.21, 36, 181; 14.89; 19.41.

2 Cf., 12.93; 17.241; 33.29, 143; 34.139; 35.162; 36.135. None of these, however, is as clear as 6.181.

source, but the context implies that the information came from an historical note.

(v) *Reperio*. There are only thirteen examples of this and none is overtly linked with *auctores* or any named author. The context, however, allows one to make certain deductions about his reading-matter. A notice of magical plants, for example, discussed by Pythagoras and Democritus, who relied upon the *magi* for their information, is followed by 'mentionem apud alios non reperio', (24.156). The 'alios' must surely mean other writers on the subject of magical herbs. Most of the other examples probably refer to his reading of, or inquiries among medical or historical sources.¹ But one is relying upon the context to make this kind of deduction.

On one occasion, Pliny carefully draws the reader's attention to the degree of diligence with which he has conducted his researches. 'Adeoque nihil omisit cura ut carmine quoque comprehensum reperiam', etc. with details of what the poem says, 919.185). Cf., 'adeoque nihil omissum est ut leporem surdum celerius pinguescere reperiamus', (28.264).

(vi) *Repperi*. There are two examples: (a) 'Alcibium qualis esset herba non repperi apud auctores', (27.39); (b) 'Leucographis qualis esset scriptum non repperi.

(vii) *Reperitur*. There are two examples: (a) 'reperitur apud auctores', etc. (2.240); (b) 'reperitur et in Peloponneso quinos quater enixa', etc. (7.33) where the likelihood is that the source is a literary one.

(viii) *Reperiuntur*. There are three examples: (a) 'trecenta eorum [Umbrorum] oppida Tusci debellasse reperiuntur', (3.113); (b) 'in quibusdam exemplaribus diversi numeri reperiuntur', (6.62). This is a reference to the works of Diognetus and Bæton. (c) 'Quæ omnia gentium

¹ Medical authors: 20.182, 184; 24.175; 26.24, 29; 27.57, 67. Historical sources: 34.15; 35.12, 168. Two other examples are not clear. (i) 'apud Græcos in honore fuisse non reperio', (19.136) may well refer to Greek authors; (b) 'quaternis denariis scripula eius permutata quondam ut auri reperio', (19.20) could easily come from an oral rather than a written source. Once again, 'non reperio' is distinct from 'reperio' in the manner I have described for 'non invenio', *supra*, p. 247.

portuumve aut oppidorum nomina apud neminem priorum [auctorum] reperiuntur', (6.105).

We also find Pliny referring to a piece of documentary evidence, although whether he actually read it or simply found it quoted or referred to by someone else is impossible to tell: 'sed in militia quoque in tantum adolevit hæc luxuria ut M. Bruti e Philippicis campis epistolæ reperiuntur frementis fibulas tribunicias ex auro geri', (33.39).¹

What, then, can be said of Pliny's practice of using *invenire* and *reperire*? First, perhaps, that it is not unusual. Seneca, Suetonius, Quintilian, Tacitus and the earlier Livy all point out to the reader by this usage their attempts to gather and collate information from different sources. If this is some kind of vanity, it is not Pliny's alone. If it is evidence of a scholarly cast of mind, Pliny partakes in it as much as anyone else. Secondly, it enables him to emphasise the care which has gone into his research for facts and the exercise of independent judgement, especially when it comes occasionally to checking different copies of the same work.²

Evidence of Pliny's *not* accepting at face value everything he reads is not difficult to find. For example, (a) 'atque ego hæc statis temporibus naturæ vi ut cetera arbitror existere non, ut plerique, variis de causis quas ingeniorum acumen excogitat', (2.97). (b) 'Deceptos credo quoniam Argo navis flumine in mare Hadriaticum descendit non procul Tergeste', (3.128), as opposed to what 'plerique dixere falso', (3.127). (c) 'Ego incertam in hac terrarum parte mensuram arbitror', (4.91) as opposed to Marcus Agrippa's opinion. There are, in fact, 72 other examples of Pliny's

¹ Three references are worth recording: (a) 'et de herbis quidem memoria digna hactenus accepimus aut comperimus', (27.143), which is the only time he uses *comperimus* in the same way as *invenire* or *reperire*; (b) 'sed nos oblitterata quoque scrutabimur, nec deterrebit quarundam rerum humilitas', (14.7) which is another example of his drawing the reader's attention to the diligence of his researches; (c) 'Eratosthenes (in omnium quidem litterarum subtilitate set in hac utique præter ceteros solers, quem cunctis probari video) ... prodidit', etc. (2.247).

² See Seneca: *NQ* 2.56.1; 3.1.1 (*invenio*). *Ep.* 5.7; 10.5 (*inveni*). *Ep.* 51.1 (*reperio*). Suetonius: *Iulius* 55.3, *Caligula* 8.2 (*invenio*). Quintilian: *Institutio* 1.7.22; 2.21.14; 4.1.19; 6.3.33 (*invenio*), 3.1.12; 8.3.79 (*reperio*). Tacitus has a slight preference for *reperire*: *Annales* 2.88; 3.3 (*reperio*), 4.53 (*repperi*). *Historiæ* 2.36 (*invenio*). Livy draws frequent attention to his researches. There are, for example, six examples of *invenio* in Book 2 alone: 2.8.5; 2.18.5; 2.21.3; 2.40.10; 2.41.11; 2.54.3.

expressing a personal opinion about something he has read or seen or been told.¹ He draws attention to error, 'manifesto errore', (4.114); 'erratum et in annalibus inclutis', (4.115); 'haud scio an sit error numeri', (6.207) and expresses astonishment at other people's expressed opinions or gullibility. 'Miror equidem Aristotelem non modo credidisse præscita vitæ esse aliqua in corporibus ipsis verum etiam prodidisse', (11.273).²

He also lets us know that he has taken care over his collection of material: (a) [he is about to embark on a description of the interior of Asia Minor] 'in quo multa aliter ac veteres proditurum me non eo infitias, anxia perquisitis cura rebus nuper in eo situ gestis, a Domitio Corbulone regibusque inde missis supplicibus aut regum liberis obsidibus', (6.23); (b) 'Hactenus a priscis memorata. Nobis diligentior notitia Claudii principatu contigit legatis etiam ex ea insula advectis', (6.84); (c) 'quæ sit avis ea non reperitur nec traditur', (10.36).

Conclusions

- (i) Pliny lets his readers know some of the details of his wide reading by his use of *invenire* and *reperire*. This is common practice among writers of the period.
- (ii) His motives may have been partly to show off but also to emphasise the care and labour which lay behind the composition of the *NH*.³
- (iii) On at least one occasion he seems to have investigated different copies of an author's work and noted discrepancies between them.

¹ *Arbitror*: 2.97 (an example different from that in my text), 245, 246; 3.8; 8.61; 9.151; 10.20, 63; 11.18, 232, 262, 274; 15.24; 16.129, 130; 17.75, 90; 18.275; 19.34; 22.73, 128; 24.37; 25.11; 27.31, 86; 28.151; 29.63; 30.25; 32.34; 33.8, 58; 35.24; 36.46, 50; 37.31, 53, 99, 124. *Credo*: 6.51, 80; 8.31; 16.70, 141; 18.169, 182; 21.144; 27.141; 28.6; 29.21; 31.81; 33.11, 74; 36.185; 37.19. *Reor*: 2.192; 7.153; 8.44; 10.136; 11.123, 274. *Animadverto*: 2.102; 10.37; 21.45, 153; 35.40. *Puto*: præf 24; 21.147; 30.94. *Existimo*: 11.273; 15.122; 30.146; 35.22. This is not an exhaustive list of Pliny's use of these verbs.

² *Error*: 3.16; 4.83; 6.30, 40; 9.123; 13.59, 100; 15.8, 10; 16.149; 21.29, 30, 165; 22.73; 33.58, 116; 35.58; 37.102. *Miror*: 8.131, 132; 9.143; 11.165; 15.130; 16.214; 17.58 (*demiror*); 18.303; 20.220; 22.14; 25.24; 28.153; 31.31; 37.40. These are not exhaustive lists of Pliny's use of these terms. See also Le Bonniec: *Actes du Congrès de l'Association G. Budé* (1984), 82-5.

³ His use of numbers in Book 1 and elsewhere in the *NH* is part of this process, although there is more to them than that. See further, *infra*, pp. 315-19.

- (iv) He is not always willing to accept what he reads or hears at face value, and openly criticises many of his sources as well as commonly held opinion.
- (v) He frequently expresses his own opinions.

In consequence, it is clear that Pliny's role in the composition of the *NH* cannot be seen as that of a mere compiler. His own scepticism, prejudices, and reasoned opinions played a large part in his handling of the material he gathered, and we must be prepared to envisage a bigger creative activity at work than has often been allowed hitherto.

2) *Adnotare et Excerptare*

The Elder Pliny's methods of collecting material are described thus by his nephew in a letter to Bæbius Macer:

Æstate si quid otii iacebat in sole, liber legebatur, adnotabat excerptebatque. Nihil enim legit quod non excerpteret ... Super hanc [cenam] liber legebatur adnotabatur, et quidem cursim (*Ep.* 3.5.10-11) ... Dum destringitur tergiturque, audiebat aliquid aut dictabat (*Ibid.*, 14-15) ... Electorumque commentarios centum sexaginta mihi reliquit, opisthographos quidem et minutissimis scriptos (*Ibid.*, 17).

I shall discuss *dictare* and *commentarii* later, (*infra*, pp. 258-60 and 282-93). For the moment I shall concentrate on *adnotare* and *excerptare*, since these two verbs describe the process by which material was selected.

(i) *Adnotare*

The range of meanings given in the *OLD* covers, 'note in writing, observe, make a note on, add in writing, mark passages', and it is obviously important that one be clear about what Pliny the Younger meant when he used the verb. Sometimes he meant 'observe' as in, 'quin etiam in testamentis debes adnotasse', (*Ep.* 7.20.2).¹ But usually he wished to say either that a mark had been made beside a passage or that someone had added a critical note and, as the following examples show, it is not easy (or indeed possible) to distinguish between the two.

¹ Cf., *Ep.* 7.20.6; 7.29.2; 8.6.1; 2.11.6. See also *TLL* s.v. 'adnoto', 783.66-784.76.

(a) 'Petiturus sum enim ut vaces sermoni quem apud municipes meos habui bibliothecam dedicaturus. Memini quidem te iam quædam adnotasse, sed generaliter', (*Ep.* 1.8.2-3).

Pliny intended to publish this speech (*Ibid.*, 3.13) and is asking Pompeius Saturninus to look at the details as well as the whole. Presumably, therefore, Saturninus's previous comments have been general, and *adnotare* could refer to marked passages upon which Saturninus gave verbal opinions, or brief notes—such as are made by teachers in the margins or at the end of essays, for example—which are meant to be extended later.

(b) 'Librum ... nisi exigenti tibi ... adnota quæ putaveris corrigenda', (*Ep.* 3.13.1, 5).

Once again we are dealing with a speech which Pliny clearly intends to publish. He is concerned with details (*Ibid.*, 3) and so presumably it is these to which he wants Voconius Romanus to draw attention. Merely marking the line or word or passage would not be particularly helpful, unless this was intended simply to form a series of pointers for future discussion; so one assumes that it is possible, even likely, that Romanus was being asked to add comments, however brief, to the text received.

(c) 'Recitaturus oratiunculum quam publicare cogito, advocavi aliquos ... inveni qui mihi copiam consilii sui facerent, ipse præterea quædam emendenda adnotavi', (*Ep.* 5.12.1, 2).

Here we find that Pliny seems to have taken heed of comments made by friends after they had listened to him reading a speech and, either at the time or later, made some kind of note to point out certain things which needed correction. *Præterea* indicates that Pliny noticed these for himself; so annotation in this case could easily have been sufficient if it were simply a mark of some kind, although one cannot rule out the possibility of words as well or instead.

(d) 'Libellum formatum a me ... misi tibi ... in eo quod adnotatum invenies et suprascripto aliter explicitum', (*Ep.* 7.12.1, 3).

Here *adnotatum* almost certainly refers only to a mark beside the passage, since the necessary changes to the script have been written between the lines of text.¹

¹ An example of such an additional interlineation can be seen in *P.Ox.* 2442, fr, 39 (third century AD) plate IV which consists of lines of Pindar with interlinear notes in a very small hand which may or may not be the same as that of the principal scribe.

(e) [An important passage, as it describes Pliny the Younger's method of preparing a speech for publication].

'Itaque nullum emendandi genus omitto. Ac primum quæ scripsi mecum ipse pertracto; deinde duobus aut tribus lego; mox aliis trado adnotando, notasque eorum, si dubito, cum uno rursus aut altero pensito; novissime pluribus recito', (*Ep.* 7.17.7).

Here, the word *notas* is important. The *OLD* makes it clear that *nota* is a mark rather than a verbal indication: 'mark attached in order to identify, brand, manufacturer's stamp, marker, a mark placed against a word or passage in a piece of writing, a mark of condemnation placed by censors against the names of certain citizens, stigma, symbol, character, signal, vestige, spot, stain'. Of these, the italicised meaning is the one which interests us.

Seneca illustrates it well. 'Mittam itaque ipsos tibi libros et ne multum operæ inpendas, dum passim profutura sectaris, inponam notas, ut ad ipsa protinus, quæ probo et miror, accedas', (*Ep.* 6.5). Pliny himself shows that *nota* can refer to a line drawn through a phrase to strike it out of a text: 'exspecto, ut quædam ex hac epistola ut illud "gubernacula gemunt" et "dis maris proximus" isdem notis quibus ea, de quibus scribo, confodias', (*Ep.* 9.26.13). Compare Cicero: 'Verumtamen, quoniam te non Aristarchum, set Phalarin grammaticum habemus, qui non notam apponas ad malum versum, sed poetam armis persequare, etc.', (*In Pisonem* 73). Tacitus, too, shows that *notæ* may be marks or symbols. The papers of a man called Libo were produced in court at a treason-trial. 'Uno tamen libello manu Libonis nominibus Cæsarum aut senatorum additas atrocis vel occultas notas accusator arguebat. Negante reo adgnoscentis servos per tormenta placuit', (*Annales* 2.30). The slaves were not being tortured because the *notæ* consisted of words written in a hand they might recognise, but in order to make them admit that Libo himself had appended the incriminating marks.

So what Pliny is saying in *Ep.* 7.17.7 is that he sends his manuscript to various people for comment; they mark certain words, phrases or passages, and if Pliny has any further doubts about the places so marked, he revises the composition yet again.

(f) 'Librum tuum legi et, quam diligentissime potui, adnotavi quæ commutanda, quæ eximenda arbitrarer ... Nunc a te librum meum cum adnotationibus tuis exspecto', (*Ep.* 7:20.1, 2).

Adnotavi here need mean no more than making a mark beside a passage. Had he added an explanatory note in his text, there would have been no need for him to explain to Cornelius Tacitus in his letter what the marks meant. The exact nature of Tacitus's *adnotationes* cannot be determined from the context.

(g) 'Visus es mihi in scriptis meis adnotasse quædam ut tumida quæ ego sublimia, ut improba quæ ego audentia, ut nimia quæ ego plena arbitrabar. Plurimum autem refert, reprehendenda adnotes an insignia', (*Ep.* 9.26.5).

Here it is difficult to tell whether Lupercus had returned Pliny's script with marked phrases and passages, and an accompanying letter (such as Pliny's 7.20) to explain the marks; or whether written comments were added to the manuscript itself.

(h) [Later in the same letter, Pliny says], 'Intellego enim me, dum veniam prioribus peto, in illa ipsa quæ adnotavi incidisse', (*Ibid.*, 13).

This is followed at once by 'sed confodias licet', so we are probably to understand that Pliny had just referred to lines striking though or underlining phrases which Lupercus had found unacceptable, and that by 'confodias' he is inviting Lupercus to continue to do the same. As he ends the letter with a suggestion that he and Lupercus meet to discuss these matters, it is likely that Lupercus had simply marked certain passages rather than adding a comment to them. But one cannot, of course, rule out the possibility that a word or two appeared in the margin.

On the whole, therefore, it seems that by his usage of *adnotare*, Pliny the Younger was referring to the practice of marking a manuscript with a sign of some kind to draw attention to a particular word, phrase or passage. It is possible that an explanatory word or two might be added to this, but the majority of examples from Pliny do not absolutely require this. Only 1.8 and 3.13 suggest that words in the margin would have been helpful, and even here one can postulate an accompanying letter which could contain the critical remarks, thereby leaving the manuscript carrying only the symbols. This is what can be seen, for example, in *P. Ox.* 3711 (second century AD), plate X. The piece may be a commentary on Alcæus or perhaps an historico-literary work on Lesbos. Haslam, the editor, says: 'The margin bristles with χ and $\chi\rho$ sigla, as if someone has been marking it up in preparation for writing a work of his own', (p. 113). *P.Ox.* 2441, fr. 1

(mid second century AD), plate II, illustrates the sign and marginal note. All three show what was being done when 'liber adnotabatur' (*Ep.* 3.5.11).¹

I am therefore not altogether in agreement with Locher when he says that *adnotare* 'means predominantly critical or laudatory writings adding to things already written'.² Since Locher is referring to Pliny the Younger's usage, it can be seen that he has exaggerated somewhat the meaning of the verb. His example from *Ep.* 10.96.4 is not well chosen. The context is that of examining people to find out if they are Christians or not. Upon admission of their religion, some are executed at once. However, 'fuerunt alii similis amentiae, quos, quia cives Romani erant, adnotavi in urbem remittendos'. *Adnotavi* simply indicates that Pliny has put a mark beside their names on a list of those being remitted to the courts in Rome. It does not refer 'to the official's note that Roman citizens were to be brought before the Imperial court'.³

(ii) *Excerptare*

There can be little doubt that this verb refers to copying out passages from one's reading. Cicero, for example, says that when he wanted to write a text-book on rhetoric, he gathered together all the books on the subject, 'quod quisque commodissime praecipere videbatur excerptissimus',

¹ Cf., Samuel Johnson's method of researching for his dictionary. 'When he found some word which he thought correctly used, he would underline the word in pencil, then put vertical lines at the beginning and end of the passage to be copied, the first letter of the word in the outer margin ... After he had gone through the volume, marking what he thought he needed, he passed it over to his assistants', Clifford: *Dictionary Johnson*, 47. Pliny the Elder's use of *adnotare* tends to follow the first two meanings suggested by the *OLD*, 'note in writing' (*NH* 2.211; 7.157; 29.77; 35.14; 37.104) and 'observe' (*NH* 2.90, 110; 3.60; 6.98, 171; 7.184; 8.153; 9.18; 28.27), although naturally the two may overlap to a certain extent. The practice did not always find approval, especially in later times. 'Nunc utiliter ponimus ut nemo audeat eorum qui libros conscribunt sigla in his ponere et per compendium ipsi legum interpretationi vel compositioni maximum adferre discrimen: scituris omnibus librariis, qui hoc in posterum commiserint, quod post criminalem poenam etiam aestimationem libri in duplum domino eius ... inferre compellentur', *Digest*, praef. 1 iii, section 8.

² In French-Greenaway: *Science*, 25.

³ Locher's subsequent proposals about Pliny the Elder's *adnotationes* are not dependent upon this view of the meaning of the word. They will be discussed later in this chapter. On annotation meaning marginal marks rather than explanatory notes, see further Jocelyn: *CQ* 34 (1984), 469-71.

(*De Inventione* 2.4). Seneca, who would clearly not have approved Pliny's undertaking in the *NH*, said, 'non est ergo quod exigas excerpta et repetita', and added sniffily, 'continuum est apud nostros quicquid apud alios excerpitur', (*Epistulae* 33.3). Quintilian uses the word in the same way and observes that he used to note down, during a trial, whatever was admitted by his opponent and by himself—an example of recording oral evidence rather than reading. He also employs *excerpere* to mean the recording of individual words, although this is not a usage found in anyone else.¹ Tacitus complained that one could not make extracts from Cicero's speeches, (*Dialogus* 22.3). Pliny the Younger, Apuleius and Aulus Gellius all use *excerpere* in the same sense as Cicero had done.²

It seems clear, then, that Pliny the Younger is telling us that his uncle used to mark passages in books, with a view to having them copied into his *commentarii*; or would give instructions to a secretary that such-and-such be noted and copied later. Perhaps the Active 'adnotabat excerpebatque' (*Ep.* 3.5.10) and the Passive 'liber ... adnotabatur' (*Ibid.*, 11) imply that sometimes Pliny did the work himself and sometimes got someone else to do it; but perhaps, too, the difference in Voice is a matter of style. There is, however, an additional phrase to 'adnotabatur', which must be considered: 'et quidem cursim'.

The Loeb, followed by the Penguin, translation renders this as, 'he took rapid notes'. The Budé prefers the impersonal, 'il y avait lecture, annotations, le tout avec hâte'. Now, it is clear that from the younger Pliny's usage of 'et quidem' that he wishes to say—'and what is more'. He gives a fact and then draws attention to a second fact related to the first and which he particularly wants his reader to note. 'Apros tres et quidem pulcherrimos cepi', (*Ep.* 1.6.1); 'decessit Cornelius Rufus et quidem sponte', (*Ep.* 1.12.1).³ *Cursim* carries the senses 'casually, hurriedly, rapidly, superficially'.⁴ In Pliny's letter, 'et quidem cursim' is followed at

¹ *Institutio* 2.15.24; 9.1.24; 7.1.29; 10.2.13. Cf., 1 *præf.* 7.

² Pliny: *Ep.* 6.16.22; 6.20.5. Apuleius: *Apologia* 83. Gellius: *NA præf.* 2; 17.21.1. Cf., Frontinus: *Strategemata* 1 (*præf.*).

³ 'Succurrit quod præterieram et quidem sero', (*Ep.* 3.9.28). 'Avunculus meus ... historias et quidem religiosissime scripsit', (*Ep.* 5.8.5). 'Quod ... quibusdam iniquum et quidem pertinaciter visum', (*Ep.* 6.5.1). 'Nosti me et quidem studiis', (*Ep.* 9.23.2).

⁴ Cicero: *De Oratore* 2.364. Seneca: *Ep.* 102.11. Tacitus: *Annales* 4.4. Pliny" *Ep.* 5.14.8. There is no question of *cursim* referring to short-hand.

once by an anecdote intended to illustrate the speed at which such reading was done. A friend of his uncle made the *lector* go back and repeat a word he had mispronounced, much to the elder Pliny's annoyance. 'Tanta erat parsimonia temporis' is the nephew's comment, (*Ep.* 3.5.13).¹ There is no indication in all this that Pliny the Elder was taking rapid notes, only that the reading and accompanying annotation were being done at top speed. In consequence, the Loeb and Penguin versions are misleading and the Budé closer to what I take to be the sense of the Latin.

3) *Dictare*

(i) 'Dum destringitur tergiturque, audiebat aliquid aut dictabat', (*Ep.* 3.5.14).

(ii) 'Rectumque cursum recta gubernacula in periculum tenet adeo solutus metu, ut omnes illius mali motus omnes figuras ut deprenderat oculis dictaret enotaretque', (*Ep.* 6.16.10).

In view of the mistakes which litter *Naturalis Historia* and which have done harm to his reputation, one needs to ask whether some of them at least were occasioned by Pliny's dictating the text rather than writing it himself:² and this in turn raises the question of whether or not dictation was a regular method of literary composition among the Romans.

According to Herescu, it was not.³ One sometimes dictated if one was in haste, or if one was ill, or if one was drawing up a legal document,⁴ but these examples are non-literary. Ancient authors did not spend time on telling their readers about their *modus operandi*, so one has to rely on passing references or on those occasions when someone like Horace or

The word is never used in connection with that particular skill. See Weinberger in *PW* 11.2217-31 sv 'Kurzschriff' and Marshall: *Latomus* 46 (1987), 730-6 with other references there given.

¹ Cf., 'Repeto me correptum ab eo, cur ambularem: "poteras", inquit, "has horas non perdere"', *Ep.* 3.5.16.

² Cf., Coulson: *CW* 69 (1975-6), 371:

The fact that he often fell asleep while studying might account for some of the mistakes in his text. Furthermore, the speed at which he worked would also cause mistakes to be made in the initial note-taking, and these ultimately would be transcribed into the final text.

³ *REL* 34 (1956), 132-46. I am indebted to this article for the discussion in the following paragraph. See also Saenger: *Viator* 13 (1982), 371-2.

⁴ Cicero: *Ad Atticum* 2.23.1 = SB 43. *Ad Quintum* 2.2 = SB 6. Suetonius: *Nero* 32.2. Pliny: *Ep.* 9.40.2. Herescu: *REL* 34, 133-4.

Pliny the Younger deliberately passed on information. Horace's prescription is well-known: one writes things down, one takes time, one waits, one has patience, one corrects.¹ Vergil and the younger Pliny composed poetry in a similar fashion. According to Donatus, 'cum Georgica scriberet, traditur cotidie meditato mane plurimos versus dictare solitus ac per totum diem retractando ad paucissimos redigere', *Vita* 78-81.² Pliny told Fuscus Salinator:

Evigilo cum libuit, plerumque circa horam primam ... Cogito si quid in manibus, cogito ad verbum scribenti emendantique similis, nunc pauciora nunc plura ... Notarium voco et die admissio quæ formaveram dicto ... In xystum me vel cryptoporticum confero, reliqua meditor et dicto, *Ep.* 9.36.1-3.

Dictation, in both cases, follows actual composition in the head and thus is not the same as composition-by-dictation which implies improvisation—the kind of authorship Horace openly deploras.³ So, if dictation was commonly used by those who were too ill or too busy to write things down for themselves, or by poets who had already composed—and even corrected—verses in their heads and were thus using dictation as a recording convenience rather than a mode of working, one can conclude with Herescu that 'la dictée n'est pas le procédé normal de composition, du moins pour les œuvres proprement littéraires et pour les auteurs les plus connus, et particulièrement à l'époque classique'.⁴

¹ *Ars Pœtica* 289-94; 438-50. *Epistulæ* 2.1.109-13. Here Horace contrasts his careful written composition with the dictated effusions of diners and drinkers. Herescu: 138-9.

² This is repeated at the beginning of the *Vita* by Philargyrius.

³ Herescu: 140, 137-8. 'Ce qu'il dicte le matin n'est pas une improvisation, mais un texte déjà composé' (p. 137).

⁴ *Art. cit.*, 144. It is important to maintain Herescu's distinction between dictating a piece already composed in the head and improvising without such careful preparation. Thus, Harris thinks that dictation may account for the disorder of Cato's *De Agricultura*. See *Literacy*, 173, note 115. Dictating preliminary notes is not the same. As Pelling remarks, 'as reading a scroll required both hands, dictation would be the most convenient method', *JHS* 99 (1979), 95. Skeat points out examples of the knee's being used as a desk in composition and observes that this position is well suited to copy from dictation, but not from an exemplar which has nowhere to rest, *PBA* 42 (1956), 183-5. Cf., 191.

Nevertheless, Pliny the Elder's younger contemporary Quintilian bids his readers beware the delights or even affectation of dictation,¹ and both the Loeb and the Budé translations draw out the implication that dictation was commonly practised at the time Quintilian was writing his *Institutio*.² He has several objections to it: (i) 'Nam in stilo quidem quamlibet properato dat aliquam cogitationi moram non consequens celeritatem eius manus; ille cui dictamus urget, atque interim pudet etiam dubitare aut resistere aut mutare quasi conscium infirmitatis nostræ timentes', (ii) 'Quo fit, ut non rudia tantum et fortuita, sed impropria interim, dum sola est connectendi sermonis cupiditas, effluent, quæ nec scribentium curam nec dicentium impetum consequantur', (iii) 'At idem ille, qui excipit, si tardior in scribendo aut incertior in intellegendo velut offensator fuit, inhibetur cursus, atque omnis quæ erat concepta mentis intentio mora et interdum iracundia excutitur'.³ One thinks of the impression of speedy working described by the younger Pliny and inevitably one asks oneself if the disadvantages of dictation here listed by Quintilian have not affected composition of the *NH*.

Unfortunately, however, neither *Ep.* 3.5.14 nor *Ep.* 6.16.10 quoted at the head of this section illuminate Pliny the Elder's literary activity. In the first, it is true, he is listening while someone reads to him but, while it may be true that he is listening to a book—*studia* earlier in the sentence creates that assumption⁴—it is clear that he is probably dictating notes or comments rather than the text of his own literary work. The context of the second definitely indicates that he was not engaged in literary composition. Indeed, he was not necessarily making notes out of scholarly or scientific curiosity, but could as easily have been noting which ways the

1 *Institutio* 10.3.18: 'deliciis'. Cf., 'Ne illas quidem circa s litteram delicias hic magister feret', 1.11.6.

2 'The luxury of dictation which is now so fashionable', (Loeb). 'Ce raffinement à la mode qu'est la dictée', (Budé)

3 *Institutio* 10.3.19-20. This is a continuous passage. My division into three is for convenience only. Multiplication by dictation of the books of the Jewish Law was not allowed. Each scroll had to be copied directly from another and this (along with reverence for the sacred nature of the text) helped to ensure that each successive text was accurate. See Roberts: *Cambridge History of the Bible* 1.49-50. .

4 See Pliny: *Ep.* 1.2.6; 1.3.3; 1.9.7; 1.13.1, 6; 2.2.2; 2.8.1; 2.10.8; 3.15.1; 4.6.2; 4.8.5; 4.28.2; 5.21.5; 6.17.5; 7.20.3, 5, 7; 7.31.5; 8.1.2; 8.9.2, etc. *Studia* does not always refer to 'literature' in the *Letters*. It may also have the more specific reference 'oratory': e.g., 3.9.8; 3.18.5, 11; 4.11.4; 4.24.4; 5.8.6; 6.2.2, 3, 5; 6.11.3; 7.6.8; 7.7.2.

smoke and volcanic debris were tending, so that he could give appropriate orders later on.

Conclusions

(i) *Adnotare* indicates that marks were made beside certain passages in his current reading with or without short additional notes which Pliny wished to copy or have copied into his *commentarii*. *Excerptare* refers to the practice of copying out such selected passages.

(ii) Dictation was not generally a method employed in the composition of literary texts.

(iii) Quintilian, however, seems to indicate that it had become more common during the eighties and nineties. Whether this can be pushed back to the seventies when Pliny was working on the *NH* is open to question.

(iv) Pliny the Younger does not say directly that his uncle used dictation for composition. He does say he used it for the taking of notes.¹

(iv) Memory

The role of memory in both Roman education and Roman literary composition is one which has received a certain measure of attention, and one must obviously review the evidence for its influence upon Pliny's working methods. 'Memory' will cover three categories: (i) what Pliny had read, (ii) what Pliny had seen, (iii) what Pliny had heard. Any attempt to draw lines between the three will, of course, be artificial. When one says, for example, that Pliny remembered something he had read, does one mean he remembered something he himself had read or that he remembered something he had heard someone read aloud to him?² I

¹ We are told by the nephew that his uncle used to have books read aloud to him while he took notes and made extracts, (*Ep.* 3.5.10-12). Pliny the Younger includes the telling anecdote of one of his uncle's friends who asked a reader to go back and repeat a word he had mispronounced, and of his uncle's impatience thereat. It is a revealing story because, as André points out, there are several mistakes in the *NH* caused by (presumably) his mis-hearing of Greek. For example, Pliny confuses ἰξίνη with ἐλξίνη, (21.94, 96; 22.41). He writes *hedera* where he had heard κισσός instead of κισθός, (16.145); *euplia* for εὐκλεία, (25.130), and *orsimus* for ὀρεινός, (21.67). *REL* 33 (1955), 308-11. Cf., Pliny's 'luto' (17.30), the result of hearing ἐξεπηλοῦτο for ἐξεπήγγυτο, André: *REL* 37 (1959), 212-13. See also Desanges: *Cahiers d'histoire* 3 (1988), 345-60.

² Cf., Pliny, *Ep.* 3.5.10: 'legit', 'liber legebatur', and the anecdote about interrupted reading aloud, 3.5.12-13.

have already discussed, in Chapter 4, what Pliny may have seen and heard. Here, therefore, I shall confine my attention to Pliny and books, and shall not necessarily distinguish between the different methods of reading.

That memory and memorisation¹ were considered important by both the Greeks and the Romans can be seen by the inclusion of *Mnemosyne* as one of the most ancient deities, and by the Roman habit of making school-children learn whole declamations by heart.² Ever since Plato there had been reservations about the relationship between literacy and memory, the argument being that increasing reliance upon the written word tended to undermine memory and make it weaker, a view with which Pliny expressed some small measure of agreement, at least on one occasion.³ Still, memorisation was honoured in the performance, not in the breach of it, and one can see two rather different forms of memorisation being recorded with approbation. The first involves lists. Pliny conveniently gives us the famous examples: Cyrus the Great, Lucius Scipio and Cineas, who could all remember names.⁴ Others, such as Simonides or Metrodorus of Scepsis, could repeat what they had heard, no matter how long it was, and Charmadas knew by heart the contents of more than one library.⁵ Such feats as the latter enable one to appreciate

¹ Not the same thing. 'Memory' is the faculty by which things are remembered: 'memorisation', the process of committing them to memory or of perpetuating memory of things by putting them on record whether by means of speech or, more usually, in writing. Most of what I discuss in the following section is actually 'memorisation'. See also Cicero's discussion, *Tusculanæ* 1.57 sq.

² See the discussion by Notopoulos, *TAPhA* 69 (1938), 465-7. Seneca the Elder, *Controversiæ* 3 *præf.* 15-16. Cf., Cicero: 'Meam [in *Pisonem*] pueri omnes, tamquam dictata, perdiscant', *Ad Quintum* 3.1.11 = SB 21. Quintilian: *Institutio* 2.4.15. Further examples of corresponding Greek practice are given by Harris: *Ancient Literacy*, 32.

³ Plato: *Phædrus* 274e-275b. Cæsar: *BG* 6.12.4. Pliny: *NH* 29.19, 'aliena memoria salutamus'. The criticism of *nomenclatores* however, is a special case. See *infra*, p. 264, note 2.

⁴ *NH* 7.88. Cf., the feat of Hortensius who sat all day at an auction and then listed, without a mistake and in the right order, all the articles which had been sold, along with their prices and the names of the purchasers (Seneca: *Controversiæ* 1 *præf.* 19); and Seneca's claim that in his younger days he could repeat two thousand names he had just heard and in the same order in which he had heard them, or two hundred lines of verse in the opposite order, (*Ibid.*, 2-3).

⁵ Pliny: *NH* 7.89-90. Cf., Seneca on Cassius Severus, *Controversiæ* 10 *præf.* 8, and on Porcius Latro, *Controversiæ* 1 *præf.* 17-18; or the man

Pliny's anecdote about Democritus who entered the tomb of Dardanus the Phœnician to obtain his books. Pliny adds, 'quæ recepta ab ullis hominum atque transisse per memoriam æque ac nihil in vita mirandum est', (*NH* 30.9).¹

How far this type of memorisation differs from the learning of texts by heart is difficult to say. Pliny does not seem to distinguish between the two, since he lumps together Lucius Scipio and Charmadas in the same passage. Feats of memory were feats of memory. His examples are, of course, those of unusual capacities and one is not entitled to assume that they represented the norm in Græco-Roman society. Indeed, the fact that he draws attention to them in some sense as *mirabilia* implies that the norm was somewhat less spectacular.² Nevertheless, ability to remember lists and texts was prized and Cicero, for example, discusses techniques designed to improve the facility with which one could undertake memorisation.³

The second form of memorisation, to which I referred earlier, is the purely practical one of remembering speeches. It is not so much a second type as a development and practical application of the art of memorising texts rather than simple lists. Cicero says that the memory should be trained by learning by heart as many pieces as possible by both Latin and Greek authors; Seneca draws attention to the teacher who will draw blood from his pupils if their memory continues to be weak; and Quintilian praises memory as the force which has shaped modern oratory—'quanta vis esset eius, quanta divinitas illa, nisi in hoc lumen vim orandi extulisset'.⁴ The ability to remember lists and texts, then, was both prized

reciting someone else's poem, *Ibid.*, 19. Calvisius Sabinus paid a huge price for a slave who was to learn Homer by heart, Seneca: *Epistulæ* 27.6. Cf., 'fabularum memoria', *Epistulæ* 88.4. It is interesting that Pliny includes King Mithridates in his list of those with exceptional memories, 'duarum et viginti gentium rex totidem linguis iura dixit ... sine interprete', *NH* 7.88.

¹ See further the remarks by Harris: *Ancient Literacy*, 31-2 and Wüst in *PW* 15.2264-5. Martial claims that Pomponius Auctus can remember his poems word for word without a book, 7.51.7-8.

² One should not, however, take the veracity of these extraordinary claims for granted. They may well have been exaggerated.

³ *De Oratore* 2.351-60. All such discussion goes back to the 'memoria technica' invented by Simonides of Cos. See also Yates: *The Art of Memory*, 1-4.

⁴ *De Oratore* 1.157. Seneca: *De Clementia* 1.16. Quintilian: *Institutio* 11.2.7. Cf., Cicero: *De Oratore* 1.18 and 142. Pseudo-Cicero

and encouraged, being taught and practised in schools¹ and put to practical use in the court-room and on the Rostrum. We are therefore entitled to infer that Pliny not only recognised a good memory as a virtue, but that his own education is likely to have included exercises intended to strengthen it. As a future lawyer, he would have found this useful.

Two questions remain: is there any evidence to show that Pliny's memory was *particularly* good; and is there any indication that it failed from time to time? The first would be difficult to answer without, perhaps, someone else's observation that Pliny had an especially good memory, or that on such and such an occasion he performed a noteworthy feat of memorisation. In the absence of any such remarks, it is obvious that an answer will be elusive. The second, however, is open to discussion.

That people's memories could fail—or simply not be brought into play—we can see from the standard practice of employing *nomenclatores* to remind important men of the names of the people they were meeting.² Seneca the Elder laments the inroads upon memory made by old age, but says that if it is prompted it can recover quickly enough. He also remarks that declaimers are glad of frequent rests afforded them by applause so that they can try to remember what comes next in the speech.³ Quintilian says at one point, 'Cicero quidem in Rhetoricis indicium subiecit inventioni', (*Institutio* 3.3.6) which raises a problem because Cicero does no such thing in the texts we possess. Are we to infer from this that Quintilian's memory was at fault, or that he was quoting accurately from versions we do not have?

If this is indeed an example of faulty memory, it can easily be multiplied. Quintilian, for example, recommended that school-children begin their literary education by reading Homer and Vergil, (*Institutio* 1.8.5). Passages of both were subsequently committed to memory.⁴

devotes a long discussion to the development of memory which he links to the practical requirements of public speaking, *Ad Herennium* 3.28-40.

¹ See further pseudo-Plutarch: *Moralia* (*De liberis educandis* 13) 9e-f. Clark *Higher Education in the Ancient World*, 22-3.

² Pliny: *NH* 29.19. Cicero: *Pro Murena* 7; *Ad Atticum* 4.1.= SB 73. Seneca: *De Beneficiis* 1.3.10; *Epistulæ* 27.5. See further Bernet in *PW* 17.817-20.

³ *Controversiæ* 9 *præf.* 1 and 2.

⁴ See Bonner: *Education in Ancient Rome*, 212-14. Marrou: *Histoire de l'éducation dans l'antiquité*, 341.

References to, or purported quotations from both can be found in abundance in Latin authors and it is interesting to see not only how they are used but also how they are remembered (or quoted). Let us take three examples: Seneca, Quintilian, and Pliny himself.

(i) Seneca

Seneca occasionally quotes Homer's Greek, but then only in very small measure—a word or a phrase.¹ For the rest, he shows himself familiar with the story of the *Iliad* and the *Odyssey*, (principally the former), and makes allusions to characters and events rather than quoting directly from the text. He also frequently uses Homer as an exemplar, along with Vergil, of a great poet.² When it comes to Vergil, however, we can see variants from the received and standard text which we use, but these are generally small and just the sort of variations one would expect from a slightly faulty memory.³

He uses Vergil principally as a means of illustrating philosophical points, a source of *exempla* which are frequently taken out of context and made to fulfil a role or convey a message which Vergil himself did not intend.⁴ Sometimes, indeed, Vergil can be distorted to mean the opposite of his contextual sense.⁵ It has been suggested that when Seneca used Horace, he may have had an edition with added notes rather than just a plain text; and that he either had Ovid's *Metamorphoses* in front of him

¹ E.g., NQ 6.23.4, quoting Ἐβοσίχθονα. *De Ira* 1.20, quoting ἡ μὲν ἀνάειρ ἢ ἐγὼ σέ = *Iliad* 23.724.

² For example, *Epistulae* 40.2. *De Beneficiis* 5.25. NQ 6.26. *De Tranquillitate* 2.12. *Epistulae* 5.8.17; 88.5; 88.37, 39, 40; 90.31; 108.34. Further references are given in Setaioli: *Seneca e i Greci*, 50-55. Mazzoli: *Seneca e la poesia*, 160-5.

³ For example, *Epistulae* 28.1 'recedant' = *Aeneid* 3.72 'recedunt'. *Epistulae* 95.68 'minantis' = *Georgics* 3.77 'minacis', *Epistulae* 122.2 'illis' = *Georgics* 1.251 'illic'. NQ 3.1.1 'præruptum' = *Aeneid* 1.246 'proruptum'. *Epistulae* 58.2 'lucum iuxta' = *Georgics* 3.146 'lucos circa'. NQ 3.26.6 'suas undas' = *Eclogues* 10.5 'suam undam'.

⁴ See Maguinness: *Hermathena* 88 (1956), 92-5. Setaioli: *SIFC* 37 (1965), 138, 140. Cf., his use of Horace, Berthet: *Latomus* 38 (1979), 943.

⁵ Re *Aeneid* 3.282 sq., Setaioli (*op.cit.*, *supra*, 143) points out: Parlando dell' inutilità dei viaggi per chi ha l'animo roso dalle passioni e dalle ambizioni, Seneca esclama: "quid enim prodidit evasisse tot urbes Argolicas mediosque fugam tenuisse per hostes?" In Virgilio i versi vogliono al contrario significare la gioia dei compagni di Enea per essere sfuggiti a tanti pericoli.

op. cit., *supra*, 143.

while he was composing *NQ* or had recently read the work.¹ As far as Vergil is concerned, however, when Seneca says 'qui cotidie excutitur' (*Epistulæ* 58.5, referring specifically to the way Latin vocabulary was changing), he may be implying that copies were plentiful and could easily be consulted by anyone; or he may be assuming that people remembered large portions of his texts from their school-days. Whichever, is the case, there can be no doubt that Seneca was thoroughly familiar with Vergil's work and expected a similar familiarity of his readers; otherwise many of his Vergilian (and indeed other poetic) illustrations would have failed in their purpose.²

(ii) Quintilian

Quintilian's use of Homer is similar to that of Seneca. He refers to characters and incidents in the epics, presuming that his readers will understand the references, but he does not go into detail unless his argument calls for it. By 'detail', I mean knowledge of the Greek text as, for example, when he says 'ut cum idem Tydea parvum sed bellatorem dicit fuisse', (*Institutio* 3.7.12) = Τυδεύς τοι μικρὸς μὲν ἔην δέμας, ἀλλὰ μαχητής, *Iliad* 5.801; or 'cum Menelaus Graios in equum descendisse ait', (*Institutio* 8.3.84) = αὐτὰρ ὄτ' εἰς ἵππον κατεβαίνομεν, *Odyssey* 11.523; or 'at ego in agendo nec pastorem populi auctore Homero dixerim', (*Institutio* 8.6.18) = ποιμένα λαῶν, *Iliad* 2.243. These, however, are the only three instances out of a total of thirteen citations.³ Quintilian's citations of Vergil are also similar to those of Seneca in the sense that his variations from our standard text tend to be small. The reason may also be the same: a not-quite-accurate memory.⁴ Likewise, when Quintilian

1 Berthet: *Latomus* 38 (1979), 948. Maguinness: *Hermathena* 88 (1956), 92.

2 The point about familiarity is even better illuminated by Seneca's use of Horace. He quotes only four times directly, but squints at him frequently. See Berthet: *op. cit.*, 943 note 13. These side-long glances argue great familiarity both in Seneca and Seneca's audience, perhaps not surprising since Horace and Vergil were standard texts in school, Juvenal 7.226-7. Maguinness assumes that Seneca frequently quoted from memory, and that this is why his citations take no heed of their original context, *op. cit.*, 89.

3 Quintilian was aware that different editions did not record quite the same text as each other, since he refers to a line 'non in omni editione reperitur', *Institutio* 5.11.40.

4 For example, *Institutio* 8.3.73 'aut Delum' = *Æneid* 4.144 'ac Delum'. *Institutio* 8.6.45 'spatio' = *Georgics* 2.542 'spatiis'. *Institutio*

omits a word or phrase,¹ or when he alters the wording, we may be entitled to ask whether this is not also the result of faulty memory. Sometimes the alteration involves the substitution of one word by another with a similar meaning, (if different emphasis);² but sometimes one can see that there had just been plain misquotation.³ Both types of examples are, again, most easily explained by Quintilian's not consulting a text but relying upon his memory.

(iii) Pliny

At one point (*NH* 11.251), Pliny makes the odd remark that 'est in aure ima memoriae locus', The Loeb edition translates this, 'The memory is seated in the lobe of the ear'; Budé, 'Au bas de l'oreille est le lieu de la mémoire'; König-Winkler, 'Im Innern des Ohres ist der Sitz des Gedächtnisses'. This last is unlikely to be the correct interpretation. Pliny continues his sentence 'quem tangentes antestamur', and goes on to give two other examples of ritual touching. The parallel in Horace, *Saturæ* 1.9.76 which is usually appended in commentaries on this passage is also about touching the ear in witness.⁴ In consequence, 'lobe' is probably what Pliny means here.

8.6.47 'fagi' = *Eclogues* 9.9 'fagos'. *Institutio* 10.1.92 'inter victrices' = *Eclogues* 8.13 'intra victrices'. *Institutio* 9.2.10 'adore' = *Æneid* 1.48 'adorat'. *Institutio* 8.6.42 'Anchise' = *Æneid* 3.475 'Anchisa' (although here readings do vary). *Institutio* 9.3.15 'tremens' = *Æneid* 7.787 'fremens'. *Institutio* 9.3.20 'haud secus' = *Georgics* 3.346 'non secus'. *Institutio* 9.4.66 'Oreione' = *Æneid* 3.517 'Oriona'.

1 *Institutio* 5.9.15 'vento rubet' = *Georgics* 1.431 'vento semper rubet'. *Institutio* 11.3.70 'di talem avertite pestem' = *Æneid* 3.620 'di talem terris avertite pestem'.

2 *Institutio* 2.13.8 'præcipiam' = *Æneid* 3.436 'prædicam'. *Institutio* 9.2.49 'cædis' = *Æneid* 11.384 'stragis'. *Institutio* 9.3.14 'iactat' = *Æneid* 11.406 'fingit'. Cf., Seneca: *De Beneficiis* 1.7.1 'regum æquavit opes animo' = *Georgics* 4.132 'regum æquavit opes animis'.

3 *Institutio* 7.9.10 'cælo decurrit aperto' = *Æneid* 5.212 'pelago decurrit aperto'. *Institutio* 8.6.10 'sedet inscius' = *Æneid* 2.307 'stupet inscius'. *Institutio* 9.4.85 'agrestem' = *Eclogues* 1.2 'silvestrem'. Cf., also *Institutio* 9.3.46 'vidi ipse ante oculos' = *Æneid* 12.638 'vidi oculos ante ipse meos'. Quintilian's 'conditorum Chalcidico versus carminum' (*Institutio* 10.1.56) is no more than a reference to, rather than a citation of, Vergil's

ibo et Chalcidico quæ sunt mihi condita versu
carmina pastoris Siculi modulabor avena.

Eclogues 10.50-1.

4 See further the discussion by Köves-Zulauf: *Reden und Schweigen*, 112-14.

But what did Pliny mean by the words *memoria* and *meminisse*? By the former he indicated two things. First, a record, often in written form: for example, 'exstat annalium memoria', (2.140); 'divom Augustum curatum epistulis ipsius memoria exstat', (18.139).¹ Secondly, 'within living memory': for example, of a tree left by Marcus Agrippa in the Saepa Julia, 'fuit memoria nostra', (16.201); on a stalk of *laser*, 'unus omnino caulis nostra memoria repertus Neroni principi missus est', (19.39); and on a personal note, 'gausapæ patris mei memoria cœpere, amphimallia nostra', (8.193).² There seems to be a time-limit implicit in this second usage: one does not go back further than one's grandfather's memory. By *meminisse*, Pliny means 'to bear in mind', for example, 'noscentes tantum meminerint naturas earum a nobis interim dici non culturas', (14.1).³

Both usages of *memoria*, then, refer to two of the categories of memory I mentioned earlier, namely, what Pliny had read and what Pliny had heard. They do not, however, cover the process of memorisation and Pliny's abilities in this still can be discussed, as we did with Seneca and Quintilian, in relation to his use of Homer and Vergil.

Pliny refers to Homer and to the Homeric epics quite frequently, acknowledging him as a source for Books 10, 16, 21, 23-26, 28-30, and referring to him in other Books as well. Like Seneca and Quintilian, he displays what one might call a generalised knowledge of Homer: that is, he makes references which are not tied to a particular line or scene.⁴ He seems to have a good knowledge on several occasions: that is to say, he seems to know the text in detail. For example: 2.13 [on the sun] 'hic ... præclarus, eximius, omnia intuens, omnia etiam exaudiens, ut principi litterarum Homero placuisse in uno eo video' = *Iliad* 3.277, 'Ἡέδιός θ' ὄς πάντ' ἔφορῶς καὶ πάντ' ἔπακούεις'.⁵ Or 21.34, 'hos certe flores Homerus

¹ See also 2.202, 203; 10.141; 13.68, 102; 14.3, 11; 27.143; 28.11; 35.145. For other forms of record, see 3.34, 79; 25.12; 30.4, 149; 34.12.

² Also, 26.100; 30.13; 32.3; 33.21; 35.19.

³ Also, 18.214, 278; 23.45, 46; 28.158; 35.92; 37.195; and 25.86 which refers to living memory, 'nostra ætas meminit'.

⁴ *NH* 19.25(a), although this is only one of two instances of Homer's λινοθώρηξ = *Iliad* 2.529, 830. *NH* 21.109, Homer mentions asphodel = *Odyssey* 11.539, 573; 24.13. *NH* 21.159, Homer mentions nepenthe = *Odyssey* 4.221-2. This is the only mention of it, but Pliny does not draw attention to the Homeric context. *NH* 30.5, Homer is silent about magic in the *Iliad* but makes it an integral part of the *Odyssey*.

⁵ The line is repeated in *Odyssey* 12.323. Cf., the Budé translation 'privilège je vois reconnaître qu' à lui par Homère'.

tris laudat, loton, crocum, hyacinthum' = *Iliad* 14.348 which is the only place where all three flowers are mentioned together.¹

Nevertheless, it is difficult to be sure how much Pliny was remembering and how much he may have combined memory with his reading of Homeric commentaries. For example, in 18.92 he says of the herb *arinca*, 'exteritur in Græcia difficulter, ob id iumentis dari ab Homero dicta: hæc enim est quam "olyram" vocat'. Homer's text is as follows:

παρὰ δέ σφιν ἐκάστω, δίζυγες ἵπποι
ἐστᾶσι κρῖ λευκὸν ἐρεπτόμενοι καὶ ὀλύρακ
(*Iliad* 5.195-6)

Notice that he says that barley is fed to horses, not that it is difficult to thresh.² This may be Pliny's interpretation of why it was fed to draught-animals. Pliny's *iumenta* is also not really the same as Homer's ἵπποι since *iumenta* usually refers to mules as well as horses,³ but that is a minor point. That Pliny refers to the Greek word, which occurs in Homer only in *Iliad* 5.196 and 8.564, may be taken as evidence of his remembering the passage. But it could also be evidence that he has used one of the commentators on Homer and reproduced his slight mistake. For example, in 4.31 he says, 'accipit amnem Orcon, nec recipit, sed olei modo supernatantem, ut dictum est Homero'. Homer says,

οὐδ' ὃ γε Πηνειῷ συμμίσγεται ἀργυροδίην
ἀλλὰ τέ μιν καθύπερθεν ἐπιρρέει ἠΰτ' ἔλαιον

¹ See also, *NH* 18.82 = *Iliad* 2.548. Cf., *Iliad* 8.486; 20.226. *NH* 21.15 = *Iliad* 23.186, the only example in Homer. *NH* 22.55 = *Iliad* 14.347, 352-3. *NH* 29.28 = *Iliad* 17.570-2. *NH* 23.41 = *Odyssey* 4.220. Pliny gives this as an example of wine's being served before a meal. Homer emphasises the fact that nepenthe is being mixed with the wine, and his context underlines the theme of drugs. That said, it is also true that here the wine is being served before a meal. Other Homeric passages suggest that wine was commonly served either with a meal or after it: *Iliad* 1.469; 9.222; *Odyssey* 15.143; 20.254-5; *Iliad* 9.347. So it is possible that Pliny is demonstrating accuracy of memory with the reference to *Odyssey* 4.220. *NH* 25.26 = *Odyssey* 10.304-6. Here Pliny has remembered the main details of Homer's description of moly, but has added one or two other details—'rotunda', 'magnitudine cepæ', 'folio scillæ'—and seems to have made a slight mistake with claiming that moly was an 'inventionem' of Mercury. In Homer it is Mercury (Hermes) who plucks the herb and shows it to Odysseus. 'Finding' it is not quite the same thing.

² Cf., *Iliad* 8.564 and *Odyssey* 4.41.

³ For example, Livy 27.43.10. Tacitus: *Historiæ* 4.60.

ὄρκου γὰρ δεινοῦ Στυγὸς ὕδατος ἔστιν ἀπορρώξ
(*Iliad* 2.753-5)

Has Pliny made a mistake in taking ὄρκον as a proper noun: or has he followed a commentator? Eustathius *ad locum*, particularly on 755, records references to Orcus as a river, so Pliny's memory (and, indeed, knowledge of Greek) may not necessarily be at fault.

Following commentators, however, could produce a puzzle for those comparing Pliny's remarks with Homer's text. *NH* 19.25(b) says, 'hinc fuisse et navium armamenta apud eundem interpretantur eruditiores, quoniam, cum σπαρτὰ dixit, significaverit sata'. This follows immediately after a reference to linen corselets in *Iliad* 529 and 830, and Homer is the subject of 'dixit' and 'significaverit'. Homer's text reads, καὶ δὴ δοῦρα σέσηπέ νεῶν καὶ σπάρτα λέλονται, (*Iliad* 2.135).¹ Aulus Gellius says that the line is discussed by Varro in Book 25 of his *Antiquitates Humanæ* (*NA* 17.3.4). There, we are told, Varro linked 'sparta' with 'sativa'—hence Pliny's reference. In *NH* 24.65, Pliny uses the same Homeric line to illustrate his contention that 'sparton' referred to 'genista' (green-weed, *Genista tinctoria*), a different plant used for a different purpose. Part of the confusion may lie in reading σπάρτον (rope) for σπαρτός (cultivated), as Aulus Gellius points out, 'dubito, hercle, an posterior syllaba in eo verbo, quod apud Homerum est, acuenda sit'.²

But there are examples which seem to show that Pliny's memory was at fault. *NH* 28.21 = *Odyssey* 19.457: Pliny says that Ulysses used magic to stop a flow of blood; in Homer it is Autolycus who does so. Pliny may have misremembered, because the wounded person was actually Ulysses. *NH* 35.96 says, 'et Dianam sacrificantium virginum choro mixtam, quibus vicisse Homeri versus videtur id ipsum describentis', of the relative merits of paintings by Apelles = *Odyssey* 6.102-0 which describes Artemis and her nymphs pursuing, not sacrificing, boar and deer. The Budé note *ad* 35.96 summarises the generally agreed position on this passage, that Pliny may have confused θύω = 'I rage' and θύω = 'I sacrifice' in an epigram describing the statue. There is no such

¹ This is the only example of σπάρτα in Homer, so this must be the object of Pliny's reference.

² *NA* 17.3.4. This same chapter contains the reference to and quotation from Varro. See also André: *Lexique des termes de botanique en latin*, 298.

opportunity for confusion in Homer's Greek. So this may illustrate a moment of poor memory or lapse in command of Greek.¹

Pliny's use of Homer, then, differs somewhat from that of Seneca and Quintilian—hardly surprising, since they were not writing the same kind of literary work. Pliny refers more frequently to the details of Homer's text and often does so correctly. Since he is unlikely to have enjoyed the benefit of the kind of cross-referencing apparatus which accompanies a modern text, the likelihood is that he was relying on memory and that on the whole his memory proved to be good. On other instances, however, he may have used someone else's commentary on Homer, and in such instances we cannot be sure whose memory or whose scholarship—Pliny's, the commentator's, a combination of the two—is in front of us.²

One must not, however, over-emphasise the perceived desirability of absolute accuracy which informs (at least in theory) modern scholarship. Evidence suggests that, as Horsfall puts it, 'error and inelegance cannot ... have been held to matter all that much' and 'nowhere is a Roman's flawless mastery of Greek demonstrably in evidence'.³ Certainly Homeric glosses were available, as well as collections of special terminology, but they were not easy to consult and thus memorisation of Homer's text was still the surest way to have references and tags to hand.⁴

Seneca and Quintilian, as we have seen, knew their Vergil and expected others to do so, too. Pliny uses Vergil, as one might expect because of the nature of the *NH*, in more detail and thus betrays a close knowledge (or perhaps memory) of the text. *Georgics* 1 and 2 are the

1 For other examples of the same kind of mistake, see André: *REL* 37 (1959), 203-15.

2 For example, *NH* 2.119, 'veteres quattuor omnino servavere per totidem mundi partes (ideo nec Homerus plures nominat)'. Cf.,

σὺν δ' Εὐρώς τε Νότος τ' ἔπεσον Ζέφυρος τε δυσσαῆς
καὶ βορέης αἰφρηγενέτης

Odyssey 5.295-6

Does Pliny's observation come from personal knowledge of the Homeric text, or from some earlier writer or writers? See further Lasserre in *Kleine Pauly* 5.1375-80.

3 *EMC* 23.3 (1979), 87.

4 Horsfall, *op.cit.*, *supra*, 82-3.

Books he uses most frequently.¹ On two occasions when he quotes Vergil's text there are, perhaps not surprisingly, minor variations but nothing more than we have seen in Seneca and Quintilian.²

Conclusions

(a) There is no available evidence that Pliny had a strikingly good memory, but there is evidence which suggests that he did rely on memory for some of his information.

(b) He made mistakes when referring to or quoting from authors whose works we can check, but his mistakes are no more noticeable than those of other authors of the same period.

(c) In consequence, we may agree with the judgment made, in general terms, by Harris. 'It is likely that during most of antiquity one was considered to know a text by heart even if, by modern standards, one's memory of it was inexact; so much we might infer from the inexactness of ancient methods of quotation'.³

B) Pliny's Sources: the cases of Cato and Aristotle

The common assumption is that the basis of the *NH* is the information contained in Pliny's *commentarii* although qualifying remarks can be made about this, (see *infra*, p. 294). The entries therein came from what he claimed was a particularly wide range of reading. As we have seen, Pliny made, or caused to be made, marks in the books he read and also made, or had others make, extracts which he wanted to retain for later reading or use. These passages must either have been quoted verbatim or epitomised in some fashion and it is possible to see what use he made of certain authors by looking at examples from those whose work has survived into our time. Parts, at any rate, of the corpus of Columella, Varro, Vergil, Celsus and Theophrastus are available, (in

¹ *Georgics* 1 = *NH* 17.56; 18.157, 181, 187, 202, 206, 209, 295, 300, 320, 340; 22.160; 29.28. *Georgics* 2 = *NH* 12.17; 14.35, 39, 67, 128; 15.4, 56, 57; 16.127; 17.19, 20, 29, 100, 105.

² *NH* 19.59 'ac' = *Georgics* 4.6 'et'. *NH* 28.19 'vestiat' (re U) = *Eclogues* 4.45 'vestiet'. Even here some Plinian manuscripts have 'vestiet'.

³ *Ancient Literacy*, 32. For a concise review of the variants which could be found in ancient times in scripts even of well-known authors, and the consequent growth of a certain type of scholarship intended to correct these inaccuracies, see Reynolds-Wilson: *Scribes and Scholars*³, 18-29. See also Barnes: *Tertullian*, 196-9, and Pliny: *NH* 27.124.

Vergil's case, probably all his work); but as an exhaustive treatment is not possible here, I shall briefly examine two, Cato and Aristotle, both of whom will serve to illustrate certain points which apply to the others and could be confirmed by them.

Münzer has argued that Pliny used Cato in four different ways: (i) he seems to have remembered, not always quite accurately, phrases gathered from hasty reading; (ii) he uses short excerpted passages; (iii) he combined pieces of information which are in different places in Cato into a single passage; (iv) he used a longer excerpt as the basis of a lengthy discussion.¹ The first is, or can be, difficult to prove, as Münzer himself admits.² The others are easier to illustrate.

Pliny refers frequently to Cato and makes extensive use of his writings—he seems to have been acquainted with Cato's *Origines* as well as the *De Agricultura*, for example³—but there are twelve references which are of particular interest since they reproduce, or purport to reproduce, Cato's actual words. For the most part, we find relatively minor variants in the text:⁴

1 *Beiträge zur Quellenkritik*, 81.

2 He comments on Cato, 'segetem ne defrudet', *De Agricultura* 5.4 and Pliny, 'segetem ne defruges', (18.200) and adds, 'jedenfalls haben wir nur eine vereinzelt, vielleicht vermittelte Lese Frucht vor uns, und nicht anders ist auch das Catocitat zu beurteilen', *op. cit.*, 74-5.

3 Possible examples can be found in *NH* 3.51 (ut auctor est Cato), 98 (Cato auctor est), 114 (Cato ... prodit), 116 (auctor est Cato), 124 (auctor est Cato), 125 (Cato dixit), 130 (auctor est Cato).

4 Cf., Münzer's general observation (*op. cit.*, 79),
Der Ausfluß an den Vorgänger ist ein ganz enger, und die Selbständigkeit des Plinius ihm gegenüber zeigt sich hauptsächlich in der anderen Gruppierung und neuen Anordnung der Notizen, indem er die Fragen anders stellt und dann alles zur ihrer Beantwortung Dientliche zusammenfasst.

Pliny, 14.46

Qui locus vino optimus dicetur esse et ostentus solibus, Aminnium minusculum et geminum eugenium, helvium minusculum conserito. Qui locus crassior et nebulosior, Aminnium maius aut Murgentinum, Apicium, Lucanum serito. Ceteræ vites miscellæ maxime in quemvis agrum conveniunt.

Cato, Ag 6.4

Qui locus vino optimus dicetur esse et ostentus soli, Aminnium minusculum et geminum eugeneum, helvolum minusculum conserito. Qui locus crassus erit aut nebulosior, ibi Aminnium maius aut Murgentinum, Apicium. Lucanum serito. Ceteræ vites, miscellæ maxime, in quemvis agrum conveniunt.¹

Pliny's text then continues seamlessly with a passage which is actually taken from a later section of the *De Agricultura*.

Pliny

In olla vinaceis conduntur Aminneum minusculum et maius et Apicium, eadem in sapa et musto, in lora recte conduntur. Quas suspendas duracinas, Aminnias maiores, vel ad fabrum ferrarium pro passis hæ recte servantur.

Cato, Ag 7.2

Uvæ in olla vinaceis conduntur, eadem in sapa, in musto, in lora recte conduntur. Quas suspendas duracinas, Aminnias maiores vel ad fabrum ferrarium pro passis eæ recte servantur.

It is worth comparing Varro who gives the same passage but via *oratio obliqua*. 'Cato ait uvam Aminneam minusculam et maiorem et apicium in ollis commodissime condi; eadem in sapa et musto recte; quas suspendas oportunissimas esse duracinas et Aminneas scantianias', (*RR* 1.58). Pliny (14.47) goes on to say, 'Aminiam proxime dictam Varro Scantianam vocat', thus indicating that he was familiar with this passage from Varro. The differences in wording between his version of Cato and Varro's, however, suggest that Pliny chose to quote Cato directly rather than lift his information from Varro's text.

Pliny's passage also illustrates the well-known fact that textual variants, for a large number of reasons, were common and that one should not lay too much emphasis on them when they appear. But it shows, too, how Pliny will weld disparate passages from an author into a single passage of his own. This can be seen again in *NH* 17.125-7 which

¹ Cf., Varro: 'Qui locus optimus vino sit et ostentus soli, Aminneum minusculum et geminum eugeneum, helvium minusculum seri oportere. Qui locus crassior sit aut nebulosus, ibi Aminneum maius aut Murgentinum, Apicium, Lucanum seri. Ceteras vites, et de iis miscellas maxime, in omne genus agri convenire', *RR* 1.25. This appears in a conversation which is made up largely at this point of quotations or close adaptations of Cato.

consists of Cato: *Ag* 45; 61.2; 44; 5.8 and 61.1; and yet Pliny introduces the passage with 'ipsius verbis optime præcipiemus', and then proceeds to deliver what seems to be a single long quotation from Cato.¹ In *NH* 18.26 which consists of several Catonian precepts strung together, the joins show rather more clearly;² and in *NH* 16.193, Pliny indicates a break with 'idemque mox'.³

Also instructive is the way Pliny adapts as he goes along. *NH* 18.243, where Pliny is using three separate passages from Cato, shows what happens when he summarises. In this case he may be summarising directly from Cato's text during composition of the *NH*—Münzer suggests that Pliny was alerted to Cato from his reading of Varro⁴—or is using the summary recorded in the appropriate *commentarius*.

Pliny, 18.243

Cato, 40.1

Cato verna opera sic definit: scrobes fieri, seminaria (...)⁵ propagari, in locis crassis et umidis ulmos, ficos, poma, oleas seri

scrobes fieri, seminariis vitariis locum verti, vites propagari, in locis crassis et umectis ulmos, ficos, poma, oleas seri oportet.

Cato's sentence is unfinished. He goes on to talk about the grafting of figs, olives, apples, pears and vines. Pliny, however, half way through his sentence, goes straight on to a different Catonian passage altogether.

Pliny

Cato, 50.1-2

stercorari luna sitiente; quæ rigua non erunt, a flatu favonii defendi et purgari, herbas malas radicans erui,

prata primo vere stercorato luna silenti. Quæ inrigiva non erunt, ubi favonius flare cœperit, cum prata defendes depurgato herbasque malas omnis radicans effodito.

Pliny, still in mid-sentence, omits Cato's next remark about pruning vines and making a pile of their wood and branches. He continues,

¹ As Münzer points out, *op. cit.*, 79. Cf., *NH* 17.195-8 which is Cato: *Ag* 33.1-4; 4.1; 49. 1-2.

² *De Agricultura præf.* 4; 1.1; 1.2

³ *Ag* 31.1-2 and 37.3-4. Cf., *NH* 18.243 which gives a close summary rather than a direct quotation of *Ag* 40.1; 50.1-2; 131. Münzer: *op. cit.*, 78-9.

⁴ *Op. cit.*, 12-13. Does this indicate that Pliny had undertaken some reading especially for composition of the *NH*?

⁵ The codices show no gap. That there is one is agreed by modern editors.

Pliny

Cato

ficos interputari, seminaria fieri, et vetera sarciri: hæc antequam vineam fodere incipias.

Ficos interputato et in vinea ficos subradito alte, ne eas vitis scandat. Seminaria facito et vetera resarcito. Hæc facito, antequam viniam fodere incipias.¹

It is clear, then, that when we read any of Pliny's purported quotations from authors who have not survived, we cannot be sure first, whether or not Pliny has omitted parts of the original text, and secondly, whether or not what appears to be a single passage in Pliny is made up of different bits of an author's work. This makes collection of 'fragments' a highly dubious undertaking.²

Pliny's creative way with Catonian material can also be illustrated from his use of Aristotle, and for this purpose I shall concentrate on one or two examples from Book 8 of the *NH*. A full set of parallel passages can be found in Appendix 11. Wellmann, followed by Münzer, suggested that Juba was Pliny's principal source for information about African animals and that Pliny got the names of other sources from him.³ In 8.43, however, Pliny distinctly tells us that he is going to use Aristotle and says that Aristotle's account differs from certain information he has just given: 'Aristoteles diversa tradit, vir quem in his magna secuturus ex parte'. 'Magna ex parte' suggests that Pliny will not merely copy out what Aristotle says but will interpolate or add as he thinks fit; and indeed he warns us that this is what he intends to do. 'Cum iis quæ ignoverat' (8.44) refers to things Aristotle did not know. But Pliny also says explicitly that he will not be consulting a single work of Aristotle; rather he will use a compendium (ostensibly made by himself) of the near fifty volumes on

¹ Pliny then adds 'idemque' and uses *De Agricultura* 131, with omissions to end this section taken from Cato.

² So, to give another example, when Pliny says he is quoting Varro in a lengthy extract (*NH* 18.348-9), it is difficult to know whether or not he is lifting a single passage or putting together his information from several Varronian passages, even though the subject-matter suggests a unity.

³ *Hermes* 27 (1892), 399. Münzer: *Beiträge zur Quellenkritik*, 419. See also, *Ibid.*, 413, 'Plinius selbst hatte aber an dieser Stelle nur Juba in Händen und übernahm die anderen Namen aus ihm'. Aly agreed that Juba was one of Pliny's major sources, but did not go as far as this: *Zur Quellenkritik des älteren Plinius*, 15 sq.

zoology which Aristotle wrote:¹ ‘quinquaginta ferme volumina illa præclara de animalibus condidit. Quæ a me collecta in artum, cum iis quæ ignoverat, quæso ut legentes boni consulant’, (*Ibid.*) Is ‘quæ’ at the beginning of this sentence the direct object of ‘consulant’ alone? It is unlikely, since this would be directing his readers’ attention to the compendium or epitome as though this were a work separate from any other by Pliny.² If, on the other hand, ‘quæ’ is the direct object of ‘legentes’, the readers are being asked to take particular note of what follows and this in turn implies that Pliny is following Aristotle on a whole range of subjects and not just the passage on the lion.³ Presumably, then, we must take ‘quæ’ with both ‘legentes’ and ‘boni consulant’.

As with Cato, Pliny sometimes omits information, adds material of his own, and joins together disparate passages. In Aristotle’s case, however, Pliny also re-arranges the material. Let us compare, for example, *NH* 8.45-6 and 8.50 with the corresponding passages from *Historia Animalium*.

¹ It is difficult to know whence Pliny gets this figure. If one looks at the list of Aristotle’s books, given by Diogenes Laërtius (*VS* 5.22-27), one can find thirty-six books dealing (or at least seeming to deal with animals: *περὶ εἰδῶν καὶ γενῶν* (1); *περὶ ζῴων* (9); *ἀνατομῶν* (8); *ἐκλογὴ ἀνατομῶν* (1); *ὑπὲρ τῶν συνθέτων ζῴων* (1); *ὑπὲρ τῶν μυθολογουμένων ζῴων* (1); *ὑπὲρ τοῦ μὴ γεννᾶν* (1); *ἐξηγημένα κατὰ γένος* (14). Now, *ferme* must surely imply a figure somewhat closer to fifty than thirty-six; and indeed uncertainty about the exact contents of some of these works, most of which have been lost, makes it desirable to find some way of increasing the number. This can legitimately be done if we add some similar titles by Theophrastus (from Diogenes Laërtius: *VS* 5.43-6): *περὶ ἑτεροφωνίας ζῴων τῶν ὁμογενῶν* (1); *περὶ δακέτων καὶ βλητικῶν* (1); *περὶ τῶν ζῴων ὅσα λέγεται φθονεῖν* (1); *περὶ τῶν ἐν ζηρῶ διαμενόντων* (1); *περὶ τῶν τὰς χροῶς μεταβαλλόντων* (1); *περὶ τῶν φωλευόντων* (1); *περὶ ζῴων* (7); *περὶ τῶν αὐτομάτων ζῴων* (1). This gives a total of fifty.

² ‘To my compendium of these ... I request my readers to give a favourable reception’, (Loeb translation). ‘Volumes que j’ai résumés ... et que je prie les lecteurs de juger avec bienveillance’, (Budé translation).

³ See Aly: *Quellen im VIII Buch*, 8 sq. Pliny acknowledges a debt to Aristotle in other books, too, (which is not to say that he necessarily quoted him directly each time): ‘Aristoteles dicit’ (7.15); ‘Aristoteles tradit’ (7.109); ‘Aristoteles mavolt’ (7.192); ‘ut Aristoteles’ (7.195); ‘Aristoteles [et] Theophrastus putant’ (7.197); ‘ut Aristoteles placet’ (7.205); ‘auctor est ... Aristoteles’ (7.207); ‘Aristoteles vocat’ (9.76); ‘appellavit Aristoteles’ (9.78); ‘Aristoteles negat’ (10.32); ‘sub auctore Aristotele’ (10.185); ‘Aristoteles negat’ (10.187); ‘Aristoteles putat’ (11.266); ‘Aristoteles reddit’ (18.335); ‘Aristoteles et Fabianus tradunt’ (28.54); ‘Aristoteles tradit’ (28.74); ‘prodidit ... Aristoteles’ (30.4).

8.45 **A** is ergo tradit leenam
 primo fetu parere quinque
 catulos, ac per annos
 singulos uno minus, ab uno
 sterilesce; [informes
 minimasque carnes
 magnitudine mustellarum
 esse initio,] **B** semenstres
 vix ingredi posse nec nisi
 bimenstres moveri; **C** in
 Europa autem inter
 Acheloum tantum
 Mestumque amnes leones
 esse, **D** sed longe vitibus
 præstantiores iis quos
 Africa et Syria gignant.

C σπάνιον γὰρ τὸ γένος
 τὸ τῶν λεόντων ἐστὶ καὶ
 οὐκ ἐν πολλῷ γίγνεται
 τόπῳ, ἀλλὰ τῆς Εὐρώπης
 ἀπάσης ἐν τῷ μεταξὺ
 τοῦ Ἀχελφου καὶ τοῦ
 Νέσσου ποταμοῦ. **B** τίκει
 δὲ καὶ ὁ λέων πάνυ μικρὰ
 οὕτως ὥστε δίμηνα ὄντα
 μόλις βαδίζειν. **A** οἱ δ' ἐν
 Συρίᾳ λέοντες τίκτουσι
 πεντάκις, τὸ πρῶτον πέντε,
 εἴτ' αἰεὶ ἐνὶ ἐλάττοντα· μετὰ
 δὲ ταῦτα οὐκέτι οὐδὲν
 τίκτουσιν,
 ἀλλ' ἄγονοι διατελοῦσιν.

HA 6.31
 579b.5-11

Neither the section in brackets nor (d) in Pliny's text appears in Aristotle, and they may be examples of the additions to which Pliny referred. What he has chosen to do with Aristotle's information is first, to omit references to copulation and the number of cubs born in Spring;¹ secondly, to omit Aristotle's final remarks about the mane and the teeth;² and thirdly, to reverse the order in which Aristotle gives his information.

Why does he do this? The reason seems to be that with Aristotle's material Pliny is picking up a point he himself made before he digressed to say that he was now going to use Aristotle. 'Semel autem edi partum lacerato unguium acie utero in enixu volgum credidisse video', (8.43). This reminds him that Aristotle said that a similar story was not true, (and therefore, of course, he may owe this anecdote to Aristotle whom he does not name in connection with it but whose contradiction of it causes him to say 'Aristoteles diversa tradit'.) ὁ δὲ λεχθεὶς μῦθος περὶ τοῦ ἐκβάλλειν τὰς ὑστέρας τίκτοντα ληρώδης ἐστὶ, συνετέθη δ' ἐκ τοῦ σπανίου εἶναι τοὺς λέοντας, ἀποροῦντος τὴν αἰτίαν τοῦ τὸν μῦθον συνθέντος.³ So he explains why he is going to use Aristotle and in what form (8.43-4), and begins with that portion of Aristotle which will link best with 8.43: 'is ergo

¹ This latter is repeated more strikingly with reference to the Syrian lioness.

² In fact Pliny does discuss both mane and copulation in 8.42, but it is not information which appears in Aristotle.

³ HA 6.31, 579b.2-5. Cf., Aelian: NA 4.34 who seems to have been using the same passage.

tradit leaenum primo fetu parere quinque catulos', (8.45). Having used that section of Aristotle, he then has little choice but to go backwards, and thus the reversal is made.

Pliny continues: **A** 'leonum duo genera: compactile et breve crispioribus iubis—hos pavidiore esse quam longos simplicique villo, [eos contemptores vulnerum.] **B** urinam mares crure sublato reddere ut canes. gravem odorem, nec minus halitum', (8.46). Here he has joined together two different passages from Aristotle.

A γένη δ' ἐστὶ λεόντων δύο· τούτων δ' ἐστὶ τὸ μὲν στρογγυλώτερον καὶ οὐλοτριχώτερον δειλότερον, τὸ δὲ μακρότερον καὶ εὐτριχον ἀνδρειότερον, (*HA* 8.44, 629b.33-5).

B προίεται δὲ τὴν φύσαν σφόδρα δριμεῖαν καὶ τὸ οὖρον ἔχον ὁσμὴν, διόπερ οἱ κύνες ὀσφραίνονται τῶν δένδρων· οὐρεῖ γὰρ αἴρων τὸ σκέλος ὥσπερ οἱ κύνες. ἐμποιεῖ δὲ καὶ ὁσμὴν βαρεῖαν ἐν τοῖς ἐσθιομένοις καταπνέων· [καὶ γὰρ ἀνοιχθέντος αὐτοῦ τὰ ἔσω ἀτμίδα ἀφήσει βαρεῖαν], (*HA* 7.5, 594b.24-7).¹

Pliny goes on to base himself on a slightly earlier section in *HA* 7.5.

8.46	A rarus in potu, B vesci alternis diebus, a saturitate interim triduo cibus carere; C quæ possint in mandendo solida devorare, [nec capiente aviditatem alvo coniectis in fauces unguibus extrahere, ut, si fugiendum sit, non in satietate abeant.] ²	C τῇ δὲ βρώσει χρῆται λαβρῶς, καὶ καταπίνει πολλὰ οὐ διαιρών, B εἴθ' ἡμέρας δύο ἢ τρεῖς ἀσιτεῖ· δύναται γὰρ διὰ τὸ ὑπερπληροῦσθαι. A ὀλιγόποτον δ' ἐστίν.	<i>HA</i> 7.5 594b.17-21
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Here I can offer no explanation for Pliny's reversing the Aristotelean order unless it be the following:

(a) In *NH* 8.46 the characteristics of the two types of lion come from Aristotle *HA* 8.44 who goes on to say, φεύγουσι δ' ἐνίοτε κατατείναντες τὴν κέρκον ὥσπερ κύνες.

(b) This mention of dogs may have triggered Pliny's memory of the passage in which Aristotle discusses the lion's urinating after the manner

¹ The sections in brackets are those which have no equivalent in their respective parallel passages.

² Not in Aristotle.

of a dog, so Pliny went straight on to that ('*Urinam mares*', etc.) and added the next piece of information in Aristotle about the lion's foul breath.

(c) Having now used 594b.24-27, his eye travelled backwards and that gave him Aristotle's (i) little drinking, (ii) going without food for two or three days, (iii) swallowing much of its food whole—the order he actually uses in his account.

Next Pliny says, '*vitam in iis longinquam docet argumento quod plerique dentibus defecti reperiuntur*', (8.47) which seems to be based on Aristotle, ἔτη δὲ ζῶσι πολλά, καὶ ὁ ληφθεὶς λέων χαλὸς πολλοὺς τῶν ὀδόντων εἶχε κατεαγῶτας, ᾧ τεκμηρίῳ ἐχρῶντο τινες ὅτι πολλὰ ἔτη ζῶσιν· τοῦτο γὰρ οὐκ ἂν συμπεσεῖν μὴ πολυχρονίῳ ὄντι, (HA 8.45, 629b.30-3).¹

Is this kind of treatment of source-material peculiar to Pliny? It is actually quite difficult to tell, as one requires fairly extensive direct quotations by author A of author B whose works still survive, and lengthy quotation is not particularly common. Indeed, what does one mean by 'quotation' in ancient authors? Pliny purports to quote from other authors on sixty-one occasions in *NH*, but only a few of these (mainly from Cato) lend themselves to being checked and, as we have just seen, it is not always the *verba ipsissima* of the other author which are being used, but rather a close following or detailed summary of his text. Does this sort of thing count in an ancient author, as 'quotation'? It would seem so.²

¹ Pliny also used Theophrastus's text on occasion, as Münzer has pointed out, *Beiträge*, 25.

² Notice the remarks by Helmbold-O'Neil on Plutarch (*Plutarch's Quotations*, viii-ix).

What is a quotation, as distinguished, at least, from a reminiscence, a reference, or a paraphrase? ... Almost certainly Plutarch did not verify his quotations, or did so rarely, by looking up the passage in his texts. His memory was prodigious ... But he committed the kind of error that one almost always makes in citing from memory ... He had also ὑπομνήματα ... full of the quotations that he made as he read. He would, of course, use these 'note-books' rather than the texts from which he had originally copied. It is also certain that he used compendia, διηγήσεις, περιοχὰί ... Even in professedly verbatim citations ... Plutarch may have quoted from memory. Or again, he may have been careless in copying; he may have copied from different sets of notes; he may have looked up the passage for one place and repeated it from (faulty) memory in another.

All these points apply equally well to Pliny. For details of Pliny's purported direct quotations see Appendix 10. A comparison of Seneca's

Conclusions

- (i) Quotations from other authors may well not be exact. Texts could easily differ, memory play false, mis-reading or mis-hearing could happen, notes might be inadequate. In any case, there does not seem to have existed the same reverence for exactitude of textual transmission which we have and, as Holford-Strevens says, 'it was normal practice in antiquity to adjust for loss of context'.¹
- (ii) Passages which appear or are claimed to be single quotations may, in fact, consist of disparate passages welded together.
- (iii) These separate passages may also have had their internal order re-arranged to suit Pliny's purpose.

approach to Aristotle, although he does not claim to be quoting him directly, reveals abbreviation, re-arrangement and omission very similar to Pliny's method of working. See Hall: *CQ* 27 (1977), 409-26 and Hine: *An Edition, with Commentary, of Seneca NQ Book Two*, 232-53. Arius Didymus re-arranged Aristotle's text in his epitome of Aristotle's *Physica*. See Diels: *Doxographi Græci*, 451-2. I owe this reference to Professor Hine. One may also compare the way Pliny uses Theophrastus, *CP* 2.9.5-7 in *NH* 15.79-81, (not naming him as the source, but the presumption is reasonable): or Columella, *RR* 3.2.7-26 in *NH* 14.20-32, (again without naming his source). If Pliny is indeed using Theophrastus and Columella here—and we cannot be sure of this—he stays more or less faithful to the meaning of their passages and does not re-arrange the material within a single 'quotation', as he does with Aristotle, although he does not quite progress easily from point A to point B within the source-material, either. One might, as a final comparison, look at Gellius's use of Pliny: *NH* 7.9-26. See also the comments of Holford-Strevens: *Aulus Gellius*, 50-1.

¹ *Aulus Gellius*, 56. He gives examples of Gellius's way with Varro. See also Sharples-Minter on Athenæus's citations of Theophrastus, *JHS* 103 (1983), 154-6. Detlefsen: *Untersuchungen über die Zusammensetzung der Naturgeschichte des Plinius*, 52-4. It is instructive to see what Johnson did with his sources in preparation for compiling his *Dictionary*. Clifford (*Johnson*, 48) says:

In his later Preface he warned readers that some quotations had been compressed and others modified. In other words, citations did not exactly reproduce the original text. Some, of course, were precisely as he found them, but others were changed, with opening words or conclusions deleted, and sometimes with major changes in phraseology. In some instances Johnson deleted or recast substantial portions of the material he had marked for transcription. One reason must have been the saving of space, but often, one suspects, it was also a question of taste. When Johnson disliked the style of an author, he did not hesitate to improve it.

(iv) If Pliny could run together disparate passages, he must have been able to find them with relative ease in his *commentarii*.

5) Pliny's *Commentarii*

The number of possible meanings for *commentarius* given by *OLD* and *TLL* is quite large, although they really represent variations upon two principal themes: (a) a personal notebook containing jottings of interest to oneself, and (b) a record for public reading, based upon notes made earlier. Thus 'notebook, private journal, register, commentary, notes, jottings, collection of notes, memorandum' cover the first general definition and 'historical record or journal, public record-book kept by magistrates, priests, etc., treatise, text-book, expository treatise' encompass the second.¹ Adcock, discussing Cæsar's *Commentarii*, equates the Latin word with the Greek ὑπόμνημα and calls it essentially an *aide-mémoire* originating from both private and official documents. The official were the war-time diaries of generals, along with their dispatches or reports, and Court journals not intended for publication; the private consisted of rough drafts for speeches, private papers and memoranda. *Commentarii*, according to this definition, then, were generally collections of facts made without pretension to artistic merit,² but more can be said about this in a moment.

A brief history of the word illustrates the range of meanings given above. In Varro it refers to official records only, (*De Lingua Latina* 6.88), but in Cicero we find a much wider range than this: historical memoirs both published and unpublished, (*Ad Atticum* 1.19 = SB 19.10; 2.1 = SB 21.1; 14.13 = SB 367.6; 14.13 = SB 367a.2); public records, (*De Divinatione* 2.42; *Brutus* 55; *De Oratore* 2.224); treatise, (*De Oratore* 1.240); *De Divinatione* 1.6; *De Officiis* 3.8 and 3.121); private journal, (*Ad Familiares* 8.2 = SB 78.2; *De Oratore* 1.5, 208; *In Verrem* 2.5.54; *Philippica* 5.12; *Ad*

¹ See further Bömer: *Hermes* 81 (1953), 210-50. Premerstein in *P W* 4.726-59 s.v. 'Commentarius'. Cf., *comminiscor*, 'I contrive, invent, fabricate, pretend, allege, feign' and *commentum*, 'scheme, design, fabrication, invention, fiction, argument'.

² *Cæsar as a Man of Letters*, 7-8. The Greek word has more or less the same range of meaning as the Latin, but tends to be somewhat wider. See Skydsgaard: *Varro the Scholar*, 111. Ogilvie, concentrating on a certain type of *commentarius*, the military dispatch, says that 'Cæsar ... elevated the Commentary into a literary form in its own right. It was no longer merely raw material for history', in *Cambridge History of Classical Literature* 2.284. See also *Ibid.*, 281-2.

Atticum 7.3 = SB 126.7); lecture notes, (*De Finibus* 5.12; *Tusculanæ* 3.54; *De re publica* 1.16), and the rough draft of a speech, (*Brutus* 164). Livy uses the word only of official records, (1.31.8; 1.32.2; 1.60.4; 4.3.9; 6.1.2; 33.11.1; 45.31.11) or of official dispatches (39.47.3; 42.6.3). Seneca the Elder means drafts of a speech, (*Controversiæ* 1 *præf.* 11; 3 *præf.* 6) and private notebooks (*Controversiæ* 2.1.6; 9.2.2). Seneca the Younger comes close to what one imagines Pliny's *commentarius* may have been like—a private notebook for jotting down maxims, passages from books, etc.:

non est ergo quod exigas excerpta et repetita ... deponere istam spem, posse te summatim degustare ingenia maximorum virorum ... certi profectus viro captare flosculos turpe est et fulcire se notissimis ac paucissimis vocibus et memoria stare ... Turpe est enim seni aut prospicienti senectutem ex commentario sapere, *Epistolæ* 33.3, 5, 7.

We learn from what Seneca tells Lucilius not to base his knowledge upon, what sort of things appeared in a *commentarius*.

Pliny himself uses the word thirteen times in the *NH* and covers broadly four meanings: (i) published journals, (2.117; 3.17; 5.8; 13.87; 17.243; 37.74); (ii) a treatise, (29.85; 30.4; 34.108; 37.197); (iii) a private notebook, (23.149; 29.15—this last is an interesting example, since it belonged to Cato and Pliny appears to have had access to it;¹ and (iv) official records, (18.14). Quintilian refers to a treatise (*Institutio* 1.8.19) and lecture-notes (3.8.58; 10.7.30), and says that one of Cicero's speeches, *Pro Scauro*, can be found in one of his (Cicero's) *commentarii*, (*Institutio* 4.1.69). Tacitus means official records, (*Historiæ* 4.40; *Annales* 6.47; 13.43; 15.74), a published journal (*Annales* 4.53) and drafts of speeches (*Dialogus* 23.2; 26.3). Pliny the Younger generally uses the word to refer to official records (*Ep.* 6.22.4; 10.66.1; 10.95.1; 10.105.1), but once—apart from 3.5.17 where he mentions his uncle's *commentarii*, to private notebooks (7.19.5). Finally, Suetonius uses it of published journals (*Iulius* 56.1, 3; *Tiberius* 61.1), private journals (*Augustus* 64.2), archives (*Caligula* 15.4; *Domitian* 20.1), and a treatise (*De Grammaticis* 18).²

¹ 'Profiteturque [Cato] esse commentarium sibi quo medeatur filio servis, familiaribus, quem nos per genera usus sui digerimus'.

² Some of the distinctions between private journal and archival material are blurred. Was Tiberius's outline autobiography, for example, 'published' in the sense of 'made available for public reading', or was it just part of the private Imperial papers, accessible only to those with

Do these various meanings have anything in common? On the face of it, *commentarius* can refer both to something short and something long. Seneca the Elder, for example, uses it for an outline speech and of a speech more or less written out in full.¹ It can refer to what were clearly brief, or fairly brief, notes in an accumulating collection such as the *Commentarii Consulares* or the *Commentarii Pontificum*, or private household accounts;² or it can designate whole published literary works, of which Cæsar's *De Bello Gallico* is the most obvious example. Etymology (see *commentum*, *comminiscor*) implies that, above all, they had some kind of plan or design to them.³ Even household accounts have to be organised if they are to be at all meaningful or useful; published speeches or journals or treatises imply a high degree of intentional arranging of material; drafts of speeches and private notebooks also presumably aim at some kind of coherence, even if that coherence may not be immediately apprehensible save by the author himself. We may take it, therefore, that Pliny's *commentarii* are likely to have been books of material organised according to his personal plan.⁴

influence and permission? See further Gascon: *Suétone historien*, 479 and Lewis: *ANRW* II.34.1 (p. 694) See also Josephus: *Contra Apionem* 1.49-50. Philostratus: *VS* 565.

¹ *Controversiæ* 3 præf 6. Cf., Cicero: *Tusculanæ* 3.54.

² Varro: *De Lingua Latina* 6.88. Pliny: *NH* 18.14. Livy 4.3.9. Cicero: *Ad Atticum* 7.3.7 = SB 126.

³ See Varro: 'Hinc etiam comminisci dictum, a con et mente, cum finguntur in mente quæ non sunt; et ab hoc illud quod dicitur eminisci, cum commentum pronuntiatur', *De Lingua Latina* 6.44. This makes it clear that the Romans associated 'device' or 'plan' with the words. Cf., Seneca: *Epistolæ* 90.25. Gellius: *NA* 17.9.22. Pliny: *NH* 19.68; 9.174; 35.42.

⁴ I disagree, therefore, with Leary who, in attempting to explain that Pliny did not consult Ovid when he was writing Book 30, refers to 'Pliny's disorganised notes', *LCM* 14 (May 1989), 70. This strikes me as an unwarranted assumption stemming largely, I think, from Leary's comparison of Gellius's methodology with Pliny's and his presuming that the latter was little different from the former. Skydsgaard (*Varro*, 105) makes an interesting point when he notes that

When a scholar had selected a subject for study, he would begin ... by reading a fairly up-to-date standard work, which he would excerpt ... Gradually, as his reading proceeded, he would excerpt less and less, only making notes of what was new or different in the work studied.

Cf., Dorandi: *ZPE* 65 (1986), 75.

The nature of that plan will form the principal topic of discussion in the next section. Meanwhile, there are one or two other points to consider. First, have we any examples of similar *commentarii*; and secondly, what particular information does Pliny the Younger afford us about his uncle's notebooks? *De Mirabilibus Auscultationibus*, attributed to Aristotle, is commonly held to consist, as the Loeb edition puts it, of 'jottings from a diary'. However one chooses to describe it, *MA* is a jumble of short notices of highly variable quality related to natural phenomena, and offers no apparent order to the readers. Its 178 separate sections leap from one subject to another—Burning Stones, Thracian Barley, The Healing Fountain, Falconry (nos. 115-18)—and therefore form a book which is difficult to use as a work of reference, (although it is actually quite short), and provides no view or argument of its own. It is a collection of raw material for a book about the wonders of natural phenomena. Had Pliny's *commentarii* been volumes of this kind, it is difficult to see how he could have produced the *NH* out of them without immense, inefficient, time-wasting research through each of his 160 volumes every time he wanted to write a fresh paragraph;¹ or without re-writing the *commentarii* according to some kind of a plan and then composing the *NH* from that. Nothing that we know about him is compatible with either suggestion. Pliny was a man who hated to waste time and had a reputation for scrupulous care in his literary work.²

The *Noctes Atticæ* of Aulus Gellius present us with another, but somewhat different, example. Gellius himself tells us that *NA* consisted of notes from his reading, which he reassembled *pour se divertir* during long winter nights in Attica and perhaps also to amuse his children during their leisure.³ It is clear that there were two stages involved. First, 'proinde ut librum quemque in manus ceperam ... vel quid memoratu dignum audieram, ita quæ libitum erat, cuius generis cumque erant,

1 Unless one argues, without evidence, that they could have had lists of contents attached to them, rather like Gellius's *NA*. But then, since Pliny continued to add information to them, as his nephew implies (*Ep.* 3.5.17), how could these indices have been prevented from becoming an increasing jumble of entries?

2 Pliny: *Ep.* 3.5.12-13, 16; 5.8.5.

3 'Quoniam longinquis per hiemem noctibus in agro ... terræ Atticæ commentationes hasce ludere ac facere exorsi sumus', *præf.* 4. 'Ut liberis quoque meis partæ istiusmodi remissiones essent', *Ibid.*, 1. The first part of this opening sentence is lost, so the suggestion that *NA* is meant to provide amusement for the children is inferential.

indistincte atque promisce annotabam'. The key words are *indistincte* and *promisce* which suggest a work not dissimilar from that of pseudo-Aristotle. But then he goes on to say that these notes were intended to act as an *aide-mémoire*, 'facile inde nobis inventu atque depromptu foret'.¹ Now, if the *commentationes* which he arranged during his Attic nights are 'the same *commentarii* in which ... the same disunity of subject-matter obtains as "in illis annotationibus pristinis" in the original notes',² it is difficult to see how he could easily pick out those references and pieces of information he might later require unless the *commentarii* were not quite as unorganised as *indistincte* and *promisce* suggest. Nevertheless, the subject-matter is very varied and such organisation as there is breaks down on occasion.³ In consequence, the summaries Gellius attached to each Book are indispensable guides to their contents and one must presume that it was these he had in mind when he said matter could easily be retrieved by his readers.⁴ We must also, perhaps, bear in mind that our notions of what constitutes ease and speed of retrieval may be very different from that of people used to the incommodities of papyrus scrolls.

Still, Pliny himself may have sympathised with our point of view, since he added a table of contents to *NH* in the form of Book 1, (see *supra*, pp. 105, 164), with a view to making it easy for Titus to save time by turning to the subject he wanted to investigate further, 'quia occupationibus tuis publico bono parcendum erat, quid singulis contineretur libris huic epistolæ subiunxi, summaque cura ne legendos eos haberes operam dedi', (*Præf.* 33). We must bear in mind, however, the difference between writing a common-place book and compiling an encyclopædia. The latter is by far the more complex endeavour and in consequence may by its nature call for a much greater degree of organisation. There is also a difference in the way the material is recorded and used. Pseudo-Aristotle, faithful to the *auscultatio* of the title,

1 *Præf.* 2.

2 Holford-Strevens: *Gellius*, 24-5.

3 'The final editing [was] somewhat slipshod'. 'Some attempt at deliberate arrangement is detectable'. 'What Gellius says is no guide to what he does', Holford-Strevens, *op. cit.*, 24, 26.

4 'Capita rerum quæ cuique commentario insunt, exposuimus hic universa, ut iam statim declaretur quid quo in libro quæri inveniri que possit', *præf.* 25. He tells us that Soranus and Hermippus added summaries to their works, *præf.* 30.4.

introduces most of his information by φασί, λέγεται or λέγουσι—which is not to say, of course, that it was not originally literary rather than oral material.¹ Pliny, to be sure, uses *dicunt, dicitur, ferunt, tradunt, traditur*, etc., but, as we have remarked, he tends to let us see when his material has been taken from a book and when it has come orally from an informant. For whatever reason, pseudo-Aristotle wishes to give the impression—and it may be a perfectly correct one—that his information has come from people's mouths rather than their pens. Since the material has not been 'worked up', so to speak, either by intention or default, we cannot tell what a revised and re-organised version might have been like.

Differences, too, can be seen in the way Pliny and Gellius quote *verba ipsissima*. Since Gellius's intention is to produce a literary gallimaufry, he tends to quote accurately. Two examples will suffice:

Gellius

Ea verba Ciceronis, si recensere quis vellet, apposui. His igitur finibus utendum esse arbitror, ut, cum emendati mores amicorum sunt, tum sit inter eos omnium rerum, consiliorum, voluntatum sine ulla exceptione communitas, ut etiam, si qua fortuna acciderit, ut minus iustæ voluntates amicorum adiuvandæ sint, in quibus eorum aut caput agatur aut fama, declinandum de via sit, modo ne summa turpitudine sequatur; est enim quatenus amicitiae venia dari possit'.

1.3.13

Gellius

Sed ipsius illius egregii scriptoris uti verbis libet, quæ et dignitate et fide graviora sunt: Καὶ μετὰ ταῦτα ἡ ξύνοδος ἦν· Ἀργεῖοι μὲν καὶ οἱ σύμμαχοι ἐντόνωσ καὶ ὀργῇ χωροῦντες, Λακεδαιμόνιοι δὲ βραδέως καὶ ὑπὸ αὐλητῶν πολλῶν, νόμου ἐγκαθεστῶτων, οὐ τοῦ θεοῦ χάριν, ἀλλ' ἵνα ὁμαλῶς μετὰ ῥυθμοῦ βαίνοντες προσέλθοιεν καὶ μὴ διασπασθεῖν αὐτοῖς ἡ τάξις, ὅπερ φιλεῖ τὰ μεγάλα στρατόπεδα ἐν ταῖς προσόδοις ποιεῖν.

1.11.5

Cicero

His igitur finibus utendum arbitror, ut, cum emendati mores amicorum sint, tum sit inter eos omnium rerum, consiliorum, voluntatum sine ulla exceptione communitas, ut etiam si qua fortuna acciderit ut minus iustæ amicorum voluntates adiuvandæ sint, in quibus eorum aut caput agatur aut fama, declinandum de via sit, modo ne summa turpitudine sequatur; est enim quatenus amicitiae dari venia possit.

De Amicitia 61

Thucydides

Καὶ μετὰ ταῦτα ἡ ξύνοδος ἦν· Ἀργεῖοι μὲν καὶ οἱ σύμμαχοι ἐντόνωσ καὶ ὀργῇ χωροῦντες, Λακεδαιμόνιοι δὲ βραδέως καὶ ὑπὸ αὐλητῶν πολλῶν νόμῳ ἐγκαθεστῶτων, οὐ τοῦ θεοῦ χάριν, ἀλλ' ἵνα ὁμαλῶς μετὰ ῥυθμοῦ βαίνοντες προσέλθοιεν καὶ μὴ διασπασθεῖν αὐτοῖς ἡ τάξις, ὅπερ φιλεῖ τὰ μεγάλα στρατόπεδα ἐν ταῖς προσόδοις ποιεῖν.

5.70

¹ Of the 178 entries in the book, φασί is used 103 of them; λέγεται = 24, λέγουσι = 14. There are only three named authors to whom entries are attributed: Xenophanes (38), Polykratos (112), and Eudoxos (173).

These, typical of Gellius's citations, help to illustrate a major difference in approach between himself and Pliny. Gellius strings together quotations and summaries of other writers' arguments as a means of presenting to his readers a wide selection of *excerpta* as a *divertissement*, and with no other purpose in mind.¹ Pliny, on the other hand, is clearly intent on creating something out of his material. In spite of the self-depreciatory tone of his prefatory letter to Titus, his claim to have produced something new—'nemo apud nos qui idem temptaverit invenitur', (14)—expresses a wish to be original and not simply to collect and record other people's opinions. His very frequent practice of re-arranging the internal order of his quotations, as well as his juxtaposing different points of view interlarded with his own observations and comments,² illustrates that perfectly well.

Comparison with pseudo-Aristotle and Gellius, then, as well as the possible implications of etymology combine to suggest that Pliny's *commentarii* are likely to have been works organised according to some kind of plan. His nephew has this to say about them: 'electorumque³ commentarios centum sexaginta mihi reliquit, opisthographos quidem et minutissimis scriptos; qua ratione multiplicatur hic numerus', (*Ep.* 3.5.17).

The adjective *opisthographus* is highly unusual. Lucian provides an example of its usage: ἡ πῆμα δέ σοι θέρμων ἔσται μεστὴ καὶ ὀπισθογράφων βιβλίων, and so does Ulpian, 'proinde et si in opisthographo quis testatus sit, hinc peti potest bonorum possessio'.⁴ Juvenal refers to something similar in his description of an interminable tragedy—

1 'Ut hoc ... laxari indulgerique potuisset ... Ne consilium quidem in excerptendis notandisque rebus idem mihi, quod plerisque illis, fuit', *Præf.* 1 and 11.

2 A good example of this can be seen in his discussion of the origin and nature of amber, 37.30-53.

3 Cf., 4.14.6; 7.9.3; 8.21.4.

4 Lucian: *Vitarum Auctio* 9; Ulpian in *Digest* 37.11.4. Manfredi suggests that there are two meanings to the word, (i) 'written on the back', (ii) 're-used'. The first is technical usage, the second colloquial, *PP* 38 (1983), 47. Clearly it is the first which is applicable to Pliny's context. See also Turner: *The terms 'Recto' and 'Verso': the anatomy of the papyrus roll = Papyrologica Bruxellensia n° 16* (1978).

aut summi plena iam margine libri
scriptus et in tergo necdum finitus Orestes (1.5-6)—

but this is rather different from Lucian's context which implies that writing on both sides of a roll was part of the cheese-paring, negative hardship to be expected from Cynicism. Martial's epigram on Picens seems to contain a double smear; Picens is a cheap-skate because he uses the back of a roll, and he writes bad poetry anyway.¹ One of the problems of writing on the back of thin papyrus was that it let the writing show through to the front and the pen tended to tear the paper;² and although we know that the back of a papyrus was sometimes used for quite lengthy pieces of writing—*P. Ox.* 2694, for example, contains a text of Apollonius's *Argonautica* with marginal notes and separate notes on the verso³—such a practice does not seem to have been particularly common. Therefore, we should observe that the younger Pliny is drawing our attention to an unusual feature of his uncle's *commentarii*.

The other unusual feature is the very small writing. A trawl through the Oxyrhynchus Papyri suggests that very small handwriting is almost entirely confined to marginal or interlinear notes. There are two possible explanations of Pliny's practice. One is that he wanted to save paper and in consequence the small hand—whether his own or that of secretaries or both—was intended to facilitate this economy. Nothing we know about Pliny suggests that he was careful or mean—not that his nephew could be expected to record such a negative detail in his two encomiastic letters—but, bearing in mind his important and thus, presumably, lucrative position in society, the *argumentum e silentio* is

1 'Scribit in aversa Picens epigrammata charta,
et dolet averso quod facit illa deo', (8.62)

The piquancy of the thrust lies in the repeated 'averso ... averso'.

2 'Nimia quippe Augustæ tenuitas tolerandis non sufficiebat calamis; ad hoc transmittens litteras lituræ metum adferebat ex aversis, et alias indecoro, visu pertralucida', Pliny: *NH* 13.79. Therefore, he says, 'primatum mutavit Claudius Cæsar'.

3 See Kingston's note on pp. 49-50 of the *P. Ox.* edition. He concluded that the verso did not contain a continuous commentary, but only sporadic notes, since there was plenty of room on the recto for the addition of explanatory material. For another example of writing on both sides, see NT *Apocalypse* 5.1: καὶ εἶδον ἐπὶ τὴν δεξίαν τοῦ καθημένου ἐπὶ τοῦ θρόνου βιβλίον γεγραμμένον ἔσωθεν καὶ ὀπισθεν, and *P. Herc.* 1021 which is either a list of excerpts or a first draft of the *Index Academicorum* of Philodemus. Its date is first century BC. See Dorandi: *ZPE* 65 (1956), 73-4. See also Birt: *Die Buchrolle in der Kunst*, 86 and 338.

reasonable. The second possibility is that he wanted to keep material devoted to a particular subject as closely assembled as he could, and this carries with it the suggestion that initially each *commentarius* was devoted to a particular topic. As Pliny's collection of *excerpta* grew, additions were written on the back of the roll as well and writing was either kept or became small in order to accommodate ever more material. Certainly had Pliny wanted to be able to find information, let us say about fruit-trees or iron, it would have been easier to turn to the volume/volumes *Arbores fructiferæ* and *Metalla* than to unroll and roll every one of his 160 scrolls each time.¹

Pliny the Younger's description gives no clear indication whether the *commentarii* were in his uncle's handwriting or in that of others. One presumes both are likely.

Finally, the Younger adds: 'Referebat ipse potuisse se, cum procuraret in Hispania, vendere hos commentarios Larcio Licino quadringentis milibus nummum; et tunc aliquanto pauciores erant'.

Four hundred thousand sesterces was a great deal of money. It represented, for example, the financial standing required to be an *eques*.² Pliny quotes that sum as an example of the ludicrously high price some people were prepared to pay for an ass, an ass dam, or a vineyard of no more than sixty *iugera*.³ Tacitus also mentions it as the size of a bribe

¹ One assumes that the *commentarii* were written on papyrus rolls rather than in codices. Pliny the Younger's *opisthographos* makes no sense if the books were codices, since the form of the codex automatically means that one writes on both sides of the page, and therefore it would be superfluous of Pliny to draw attention to it. See *PW* 4.738. It is also unlikely that the nephew's *minutissimis* refers only to personal notes, whether marginal or interlinear, which Pliny may have added to his *excerpta*. Had that been the case, one would have expected the nephew to say so rather than to give the impression, as he clearly does, that the whole text of the *commentarii* was very small. Pliny's ability to cross-reference his material also argues that he had some kind of efficient, systematic control over it. See Starr: *AJPh* 102 (1981), 433-7, and Rubincam: *Phoenix* 43 (1989), 48-51 and his Table Z. Cf., also my Appendices 2 and 13.

² Pliny: *NH* 33.32. Pliny: *Ep.* 1.19.2. Devijver: *Equestrian Offices*, 406, 408.

³ *NH* 8.167, 170; 14.49, 60. Sixty *iugera* was the size of a small-holding. These tended to be between ten and eighty *iugera*. See White: *Roman Farming*, 387. Pliny: *Ep.* 6.3.1 and Sherwin-White: *Letters*, 358. This refers to a small farm of 40-50 *iugera* which Pliny had given his nurse. He reckons it was worth 100,000 sesterces. This puts the price of the vineyard in perspective.

offered to Suillius by an *equus* who wanted admission to the senate.¹ The notion of buying (or, indeed, selling) *commentarii* also appears to be somewhat unusual. Quintilian tells us that ‘decem milibus denariorum didicisse artem, quam edidit, Euathlus dicitur’, referring (presumably) to the rough draft or notebook of Protagoras.² If 1 *denarius* = 4 *sestertii*, this makes the sum of 40,000 *sestertii*, a tenth of what Licinus was offering Pliny.³

So, as I have asked before, why did Licinus want those volumes and why would not Pliny sell them? One can scarcely imagine that Licinus would offer so immense a sum for note-books which were unstructured, a jumble of disparate reading. Of course, he might. People often do unexpected things, especially if they are rich and can afford to do so. But the inference must be that not only had Pliny collected a great deal of material Licinus found particularly interesting, but he had also arranged it in such a way that information on a variety of subjects was easy of access. We may also infer that the 160 double-sided *commentarii*, representing 320 single rolls, which could have existed by August, 79⁴ represents far more material than is required for the 36 rolls of the *NH*, and that in consequence it is unlikely they were begun with composition of the *NH* specifically in mind. One is reminded of Dio Cassius’s claim, ἀνέγνων μὲν πάντα ὡς εἶπεῖν τὰ περὶ αὐτῶν τισι γεγραμμένα, συνέγραψα δὲ οὐ πάντα ἀλλ’ ὅσα ἐξέκρινα, (1.2). Pliny’s refusal to sell them to Licinus is interesting, as I have said before. Clearly they already represented the fruit of much reading, some of it perhaps esoteric,⁵ so perhaps Pliny was unwilling, understandably enough, to hand it over to someone else, even

1 *Annales* 11.5.2.

2 *Institutio* 3.1.10. Cicero says that Plato got hold of Philolaus’s notes, (‘Philolao commentarios esse nantum’), but does not mention a price, *Republic* 1.10 (16).

3 Cf., Suetonius: ‘[M. Pompilius Andronicus] verum adeo inops atque egens ut coactus sit praecipuum illud opusculum suum *Annalium Ennii Elenchorum* XVI milibus nummum cuidam vendere’, *De Grammaticis* 8. Presumably the book was not yet published, otherwise the unnamed buyer would have been laying out his money to little purpose.

4 Pliny the Younger says, ‘opisthographos quidem et minutissimis scriptis, qua ratione multiplicatur hic numerus’, *Ep.* 3.5.17. By referring to 320 rolls, I have taken this multiplication to its furthest point *argumenti gratia*.

5 ‘Lectioe voluminum circiter duorum milium, quorum pauca admodum studiosi attingunt propter secretum materiae’, *praef* 17.

for a huge sum of money. It argues that he had been reading and excerpting for a long time and thus perhaps, that the *commentarii* represented in some measure a lifetime's work.¹

Two final brief questions: (i) how long did it take Pliny to build up 160/320 rolls of *commentarii*, and (ii) if he had had to bring them with him when he travelled (while he was procurator in more than one province, for example) what are the implications of this for packaging and transport? A round figure of ten volumes per year, (remembering that, as Pliny the Younger tells us, 160 rolls written on both sides could actually double the number), means that, using the largest possible figure, we can say that at the outside he might have taken thirty-two years to complete the number he handed on to his nephew. Thus, he would have started in c. 47, the year in which Model A of his biography has him begin his military career in Germania, while Model B has him still engaged in civilian office.

Any suggestion which has him begin the *commentarii* in 66 (which is more or less when both Models put him in literary retirement either after or in the last period of his military service) and finish them in 76, which is the latest year for his starting composition of the *NH*, means he will have written an average of thirty-two volumes of *commentarii* per year, a figure ludicrously too high. We must, therefore, come to the conclusion that he had begun his habit of excerpting and recording well before then, and this in turn raises the question of what was the variety of material which went into his notebooks. Since reading for his histories must have taken up time and effort while he was still in the army, it is difficult to imagine that he excerpted from books on animals, plants and medicine but not from chronicles. The implication must be that the *commentarii* contained a great deal of diverse material and were not begun with composition of the *NH* in mind. Nevertheless, one is at liberty to suppose that, if the *commentarii* were arranged according to

¹ He could have lent them to Licinus for copying, of course. Such loans were made. Senecio, on trial for writing an apparently unauthorised biography of Helvidius, argued that he had done so at the widow's request. During cross-examination, the advocate asked her 'an *commentarios scripturo dedisset*' to which she replied, 'Dedi', Pliny: *Ep.* 7.19.5. Nevertheless, it is still understandable that the elder Pliny might not have wanted to relinquish control of his hard-won material by having it copied and then broadcast in some form with someone else's name attached to it.

theme, as I have suggested, there is no reason why some should not have been devoted to history and others to natural inquiry.

Secondly, how did Pliny manage the *commentarii* when he was in his provinces? It would surely have been too inefficient to leave them behind in Italy and start new ones altogether when he was in Hispania and so forth. Besides, it is clear from what Pliny the Younger says about Licinus's desire to buy them that his uncle had the complete set with him; otherwise one is at a loss to understand why Licinus should want to pay so much money for them. By 79 there were 160 rolls. If we allow Pliny to be in Hispania in 73, which is the date assigned thereto by Syme, we have seven years, and at our hypothetical ten rolls per year, that gives a possible ninety rolls by which Licinus was tempted.¹ Each roll was probably c. 210cm long and 30cm high. Papyrus was light, compact, and easily transported.² Rolls were tied up in groups or bundles (*fascēs*) or kept in round wooden boxes (*capsæ*).³ This represents (allowing Pliny ninety rolls in Hispania) twelve bundles of eight and perhaps, therefore, for safety's sake during transport, twelve boxes—scarcely a major problem for a traveller as important as a procurator.⁴

1 'Et tunc aliquanto pauciores erant', Pliny: *Ep.* 3.15.17.

2 Hendriks: *ZPE* 37 (1980), 126, 130. Skeat: *JThS* 30 (1979), 174. The standard commercial length was twenty sheets, Skeat: *ZPE* 45 (1982), 169-72.

3 *Fascēs*, Gellius: *NA* 9.4.1. Cf., Juvenal 7.107. A picture shows *fascēs* consisting of eight rolls tied together, Daremberg-Saglio: *Dictionnaire* vol. 3² s.v. 'Liber', figure 4451. *Capsæ*, Horace: *Satires* 1.10.63; Statius: *Silvæ* 4.9.21; Pliny: *NH* 16.229.

4 The Emperor ordered fifty Bibles to be conveyed from Cæsarea to Constantinople in two specially commandeered wagons, Eusebius: *Historia Ecclesiæ* 5.20.2. This helps put Pliny's transport problem in perspective. Perhaps one should note here that I reject the notion of Pliny's using *pugillares* as an intermediary stage between his marking passages for excerption and their being copied into his *commentarii*. This smacks of the time-wasting and impractical piles of little tablets and scraps of papyrus envisaged by Locher in French-Greenaway: *Science*, 27. It is a notion also rejected by Dorandi: *ZPE* 65 (1986), 72. One therefore does not have to take into account storage, weight and transport of an unspecified number of wooden tablets.

D) The format of the *commentarii*

(1) Preliminary Remarks

If the intention of an historical text is to record the past and instruct the present and future therein by means of coherent argument, the intention of an encyclopædia is to record and inform by means of expanded lists. The list has an underlying theme; even a shopping-list is essentially about buying, however disparate the individual items may be. Pliny's preparations for writing his *Historia Germania* or *A fine Aufidi Bassi* and for compiling the *NH* must therefore have been somewhat different. If we argue that his *commentarii* contained extracts of his reading from very far back in his life, we are faced by one or two basic questions about what they were for. Were they self-contained, in the sense that they covered a vast range of subjects unrelated to any specific literary work he may have decided to undertake later? Were they so undifferentiated in theme that he was capable of extracting both his historical works and his encyclopædia—not to mention his *Dubius Sermo* and *Studiosus*—from the same set of *commentarii*? Or were they much more particular in theme (basically historical or basically encyclopædic); in which case are we to assume that the type of work not represented therein had entirely separate research? Were there essentially two groups of *commentarii*, one devoted to history, the other to encyclopædic record? Was the *NH* based upon his *commentarii* at all? As I have remarked earlier, Pliny the Younger does not say so and the two works are recorded separately in his letter to Bæbius Macer. Still, if it was not, one is faced by the problem of asking whence he got his huge amount of diverse information, and it is universally agreed that the *NH* did, in fact, grow out of the *commentarii*. Nevertheless, the other questions remain hanging in the air, unanswerable for lack of evidence; so it is perhaps worth observing that any attempt to speculate upon the format of the *commentarii* rests upon the assumption, rather than the fact, that they contained the raw material of the *NH* and were related to it rather than to any of Pliny's other writings.

(2) Descriptores

With this proviso, therefore, we can proceed to discuss the nature of the lists which made up each *commentarius*—and from this point I am going to concentrate on *commentarius* material suitable for the *NH*. It is my contention, however, that a similar organisation of material would or

could have been employed in arranging *commentarius* material for the Histories, although one might argue that relatively straightforward narration of past events would require a less elaborate system than the complex diversity of material required for an encyclopædia. Any reading of the *NH* indicates clearly that Pliny was able to do certain things when he consulted his raw material: he could pick out individual subjects; he could pick out individual authors; he could count separate items of information such as *res*, *historiæ*, *observationes*, *medicinæ*, etc.; he could cross-reference. Now, these points suggest that each *commentarius* (or group of *commentarii*) had a particular theme. It is always possible, of course, that Pliny could have set his secretaries to work their way through all 160/320 rolls every time he wanted information about, say, fruit-trees or amber or Æthiopia. But such an inefficient, time-wasting process runs entirely counter to what we know of his character as recorded by his nephew. If each roll had been devoted to a particular author, however, this is exactly what he and his secretaries would have had to do.¹ Almost certainly, therefore, each roll or group of rolls had a theme, and one can easily see from Book 1 what a number of these could have been.

Main subject	Subsections	Book(s) of <i>NH</i>
<i>Arbores</i>	<i>De peregrinis</i>	12, 13
	<i>De fructiferis</i>	14, 15
	<i>De silvestribus</i>	16
	<i>De sativis</i>	17
<i>Medicinæ</i>	<i>Ex hortis</i>	20
	<i>E floribus</i>	21 (majority)
	<i>Ex herbis</i>	22, 25, 27

¹ As Locher observes in French-Greenaway: *Science*, 26. Arrangement of an author's works by theme was done as we know from Porphyrius: *Vita Plotini* 24. There he draws attention to the practice of Apollodorus of Athens and Andronicus the Peripatetic, and describes how he himself has gathered Plotinus's fifty-four Books into six groups of nine, each group containing Books which discuss the same kind of subject. Detlefsen suggests that Pliny composed his *Dubius Sermo* by studying carefully *excerpta* on word-forms and the use of language, and then arranging these according to specific headings, *Untersuchungen*, 14. See also Quintilian: *Institutio* 10.7.32. I have already mentioned the possibility that each *commentarius*-volume had its own list of contents, and the problems attendant upon this notion, *supra*, p. 285, note 1.

<i>Ex arboribus silvestribus</i>	24
<i>Ex animalibus</i>	28, 29, 30
<i>Ex aquatilibus</i>	31, 32 ¹

Already this is a somewhat different suggestion from that proposed by Locher. In his view, 'the selections in the *commentarii* were collected in the exact order they occurred in his reading'—which may or may not be true: but Locher does not make it clear whether he thinks each *commentarius* contained a jumble of different subjects or concentrated upon one—and so

Pliny added, or had added, to his *commentarii* notes which would make it easier to find them later ... Pliny either dictated *adnotationes* into the *commentarii* to serve there as retrieval aids, for instance in the margin, or these *adnotationes* were added by Pliny himself in the margin of the books he read or were read to him, and contained hints as to where the excerpt in question was to be included in the *commentarii*.²

This last I think cannot be right; it is far too cumbersome. If the *commentarii* were composed according to theme, as I have suggested, it would have been perfectly obvious where each *excerptum* was supposed to go. Any marginal notation would merely have indicated which passage Pliny wanted recorded.

Marginal Notes

But marginal notes in the *commentarii* are certainly possible. Indeed, I think they were essential. The question is, of what did they consist? Locher thinks they may have been 'the key-words and brief questions of the *indices: quid sit ... qui primus ... de— ... genera, differentia, quando primum Romæ*'.³ Once again, however, one is at a loss to understand how Pliny could work quickly through indicators such

¹ These six groups have totals of *medicinæ et historiæ et observationes* at the end of each Book's summary in Book 1, rather than the *res et historiæ et observationes* of the others. Clearly, therefore, it was the record of drugs which was deemed important and is the link or common theme which they share.

² *Op. cit., supra* in p. 295, note 1, pp. 26-7. Locher adds that 'in this case the *commentarii* would then have been a kind of structured collection of material for the *Natural History*'.

³ *Ibid.*, 27.

as these. Rottländer's notion of *descriptores* has more to recommend it.¹ He concentrates on *NH* 34.140-8, a section on iron.

The main *descriptor* is obviously "iron". The next must have been something like 'work of art' ... a third, most probably *terra* ... Next he took *aqua* in chapters 144 and 145, accompanied by a *descriptor* for different peoples. Then he adds the *descriptor oleum to ferrum* and *aqua* ... [then] *ignis*. In chapters 147 and 148 the system of *descriptores* becomes particularly clear. Here his *descriptor* is clearly *magnes lapis*.²

The notion of *descriptores* is undoubtedly attractive, but the system here described is far too complex. If one can imagine *commentarii* loaded with hundreds of *descriptores* in the margins, one can see how confusing it would be for Pliny or anyone else to reduce that immense gallimaufry to a coherent system. What is needed is something simple, and that means as few *descriptores* as possible. This in turn means that such *descriptores* as are used must be general rather than specific to a particular topic. A review of the indices of Book 1 reveals that there is an underlying pattern thereto, and I suggest that actually no more than eight *descriptores* would have been necessary to provide Pliny with all the guidance he needed for the bulk of material he used in the *NH*.³

The *descriptores* I have in mind are these:

¹ In French-Greenaway, 18. The original notion belonged to Schaaber, as Rottländer is careful to acknowledge. See further Schaaber: *JOEAI* 51 (1976-77), 85-105.

² This quotation comes from p. 18 of his article in French-Greenaway.

³ The apparent exceptions are Book 2 and the geographical Books (3-6), but I shall return to these later. The outline of a system very similar to that of Schaaber can be seen in Isager's book on Pliny. For example, he gives 'Plan and Intention' for Books 33-6 with 'theme-words' in his right-hand margin. Some turn up frequently—*luxuria, utilitas, mirabile*—but again, most refer specifically to the particular context of the individual Book and would not easily transfer to the role of key-word applicable to any of the Books in the *NH*; and a coherent, efficient system of *descriptores* surely needs to use as few key-words as possible so that they may be applicable to the whole. For Isager's analyses, see *Art and Society*, 77-8, 109-13, 206-9.

<i>Natura</i>	Of the various meanings given by <i>OLD</i> , two are pertinent to Pliny: (a) 'physical characteristics, size, shape, structure, etc.', (b) 'distinctive feature or characteristic'. A third, 'abilities, natural endowments' may also be applicable, depending on the subject-matter. Thus, twelve Books begin with this type of discussion: <i>aquatilium natura</i> (9), <i>volucrum natura</i> (10), <i>arborum naturæ</i> (12), <i>naturæ frugiferum arborum</i> (15), <i>silvestrium arborum naturæ</i> (16), <i>sativarum arborum naturæ</i> (17), <i>frugum naturæ</i> (18), <i>lini natura</i> (19), <i>naturæ florum et coronamentorum</i> (21), <i>naturæ herbarum sponte nascentium</i> (25), <i>metallorum naturæ</i> (33), <i>naturæ lapidum</i> (36). ¹
<i>Exempla</i>	This gives examples drawn from both past and present. Pliny has a practice of contrasting former times with modern, or adding contemporary illustrations to older ones. ²
<i>Origo</i>	Three Books begin with discussion of how things began or whence they came: <i>origo gemmarum</i> (37), <i>de origine medicinæ</i> (29), <i>de origine magices</i> (30).
<i>Genera</i>	<i>Insectorum animalibus genera</i> (11), <i>reliquæ per genera medicinæ</i> (26), <i>reliqua genera herbarum</i> (27), <i>æris metalla-genera æris</i> (34).
<i>Cultura</i>	This is obviously applicable especially to those Books which deal with plants of one kind or another, just as <i>Natura</i> and <i>Genera</i> will be dominant in Books about animals and <i>Medicinæ</i> in the eleven Books which concentrate on <i>remedia</i> .
<i>Usus</i>	<i>Passim</i> throughout the indices of Book 1.
<i>Mirabilia</i>	<i>Gentium mirabiles figuræ-prodigiosi partus</i> (7).
<i>Medicinæ</i>	<i>Medicinæ ex his quæ in hortis seruntur</i> (20), <i>Medicinæ ex arboribus cultis</i> (23), <i>Medicinæ ex animalibus</i> (28), <i>Medicinæ ex aquatilibus</i> (31 and 32).

(3) Examples of the system at work

Most of the opening words of the indices, then, supply most of the key-words required to cover the subject-matter of the *NH*; but do these suggestions work in practice? Let us begin by re-examining the section on iron from Book 34, which Rottländer analysed according to Schaaber's suggestions.

Reference	<i>Descriptores</i>	Comment
138	<i>Usus</i>	The ways in which iron is used.
138		Personal comment from Pliny.

¹ Book 14 might be included here because although the opening words of the appropriate index are 'continentur fructiferæ arbores', it goes on at once to a discussion of vines, which form the principal subject of the Book, and it starts its itemised headings with 'De vitium natura'.

² For example, 7.76; 10.121-3, cf., 124; 13.73; 33.161, cf., 162.

139-41	<i>Exempla</i>	The treaty of Porsina; an edict of Pompey the Great; 'ars antiqua'; modern instances.
141	<i>Natura</i>	Rust
142	<i>Origo</i>	Where deposits are found.
142	<i>Usus</i>	Smelting methods are similar to those used for copper.
143-8	<i>Genera</i>	Cappadocia; 'differentia ferri'.
148	<i>Exempla</i>	Timocharēs's use of iron.
149	<i>Mirabile</i>	An iron mountain.
149-50	<i>Natura</i>	The effects of different substances on iron.
151-5	<i>Medicinæ</i>	'Medicina e ferro'; <i>remedia</i> .

This, I submit, is a simpler system than Schaaber's because its *descriptores* are not particular to the subject-matter and can therefore provide a structure into which virtually any of the diverse material of the *commentarii* could fit. Relative specificity would be provided by the subject-matter of the individual *commentarius* roll (or set of rolls). For example, a roll (or group of rolls) could be devoted to *medicinæ ex arboribus cultis* or *metalla* or *flores*, the kind of subject-matter announced at the head of each Index in Book 1. Like Schaaber's system, this will have enabled Pliny to count individual entries, but unlike Schaaber's system it will have enabled him to see how many *naturæ*, *origines*, *usus*, etc., he had used in a particular Book. This matter of counting is one to which we shall return, (*infra*, pp. 304-14).

Rottländer also sketches an analysis of 37.30-4 which deals with amber, but does not attempt to go into any detail. 'The first main *descriptor* is *sucinum* ... In 31, a new *descriptor* appears: it is *electrum* ... In 33 there appears a new word, *liguria*, but it is not before 34 that a third Latin word for amber, *Lyncourion*, appears for the first time', (*art. cit.*, 18). A different analysis of the whole section on amber (30-53), however, produces the following:

Reference	<i>Descriptores</i>	Comment
30		Introductory remarks by Pliny
31	<i>Exempla</i>	The story of Phæthon.
32-3	<i>Origo</i>	Various Greek writers' information.
33-4	<i>Genera</i>	Names and descriptions according to different theories.
35	<i>Origo</i>	Electrides; amber carried by currents.
35-6	<i>Usus</i>	Fuel.
36	<i>Origo</i>	Two Greek theories.

37	<i>Usus</i>	Incense; ornaments.
37-40	<i>Origo</i>	Other Greek theories.
41		Remarks by Pliny on the foregoing.
42	<i>Exempla</i>	Names arising from Germanicus Cæsar's operations in Germania.
42-3	<i>Origo</i>	Amber in pine-resin; it is washed up on the shore.
43	<i>Exempla</i>	'Prisci nostri credidere'.
43	<i>Natura</i>	Scented when rubbed and burned.
44	<i>Origo</i>	Present trade-routes.
44	<i>Usus</i>	Ornament for women.
44	<i>Medicina</i>	Prophylactic.
45-6	<i>Exempla</i>	Length of modern trade-route; Roman <i>eques</i> in Nero's reign.
46	<i>Origo</i>	It is found in India; how it is transported; a resin containing insects.
47	<i>Genera</i>	'Genera eius plura sunt'; colours; 'Falernian' type.
48	<i>Natura</i>	It can be tinted artificially; magnetic properties; burns brightly.
49		Pliny's comments.
50	<i>Exempla</i>	Anecdote about Nero and Poppæa; modern hair colour.
50-1	<i>Medicinæ</i>	Amulet for babies; remarks of Callistratus.
51	<i>Usus</i>	Used in making artificial gems.
52-3	<i>Origo</i>	Lyncurium formed from lynx-urine.
53	<i>Natura</i>	Colour; magnetic properties.
53		Pliny's comments.
53	<i>Medicinæ</i>	Two remedial uses.

At first, glance, this system appears to be more complex than Schaaber's: certainly it is much more detailed. But the details always append to one or other of the same basic eight *descriptores* which are applicable almost anywhere in the *NH*, (the exceptions being Book 2 and the geographical Books, as I have said), and this therefore actually makes the system simple. Secondly, the notion of such repetitious detail is supported, at least in some measure, by Pliny's ability to count separate items of information in each Book and produce large numbers—747, 787, 2700—at the end of each of the indices.¹

¹ On this point Locher says,

One of the difficulties in making suggestions about a system of analysis is that it needs to be seen operating in whole Books of the *NH* rather than individual sections. Nevertheless, if it can be shown to work in passages drawn from different Books dealing with a variety of subject-matter, the likelihood that it will be equally applicable elsewhere in the *NH* is thereby strengthened. In consequence, I shall give one more example here and two in Appendix 12.

Book 9.104-23, on pearls

Reference	<i>Descriptores</i>	Comment
104-5		Pliny's personal comments.
106-7	<i>Origo</i>	Places of origin; shells.
107-9	<i>Natura</i>	Reaction of pearls to weather; colours.
109	<i>Usus</i>	Clustered pearls used for carrying perfumes.
109-10	<i>Natura</i>	Pearls harden out of water; other characteristic behaviour.
111	<i>Genera</i>	One type of pearl-shell.
112	<i>Natura</i>	Why pearls are valuable; <i>unio</i> .
113	<i>Genera</i>	Brilliance, size, shape.
114	<i>Usus</i>	Women's jewellery.
115-16	<i>Genera</i>	Types from different places; where they form in the shell.
117-23	<i>Exempla</i>	Lollia Paulina; Marcus Lollius; Cleopatra.

The countless pieces of information that Pliny worked on must have gone through a stage in the compiling when they were countable. Quite clearly there was a stage of mechanical separation. Here is imagined a pile of little tablets, of scraps of papyrus, each of which contained one passage taken from the *commentarii*, be it *res*, *observatio*, or *historia*, *art. cit.*, p. 27, *supra* in p. 295, note 1. This strikes me as being immensely cumbersome and time-wasting. If the *commentarii* had their own built-in system, as Schaaber's suggestion would provide and as mine would, too, there would be no need for such a potentially chaotic stage in the process of composition. Cf., Schanz-Hosius: *Geschichte der römischen Litteratur* 2.772-3. One can see what a nuisance it would be to try to disentangle a coherent piece from note-books without any system if one recalls the working-practices of Agatha Christie. She scribbled ideas for stories on any blank page of any handy note-book and in the end over thirty uneditable note-books existed, with ideas scattered all over the place. One had to comb through half a dozen to disentangle the origins of a single plot. Morgan: *Agatha Christie*, 166, 283, 317-18.

These examples illustrate, then, that a system of *descriptores* is a reasonable way of analysing the material in the *NH*. Whether Pliny actually used such a system is a matter for speculation: there is no proof. Whether such a system would have applied to the *commentarii* (as opposed to the *NH*) is also a matter of speculation. But it does seem legitimate to suggest that the material in the *commentarii* provided the material for the *NH*, even if the material in the *commentarii* covered much more ground than the *NH*: included material used in the *Historiæ*, for example. That there was *some* kind of scheme behind his extraction and use of material in the *commentarii* seems overwhelmingly likely, given his reputation for dislike of time-wasting. A system of *descriptores* fills that particular need. An arrangement which employed as small a number of generally-applicable *descriptores* would be more efficient and less time-consuming than one which relied on a large number of keywords geared to specific material. Whether the eight I have suggested are those Pliny might have used had he employed such a system is open to argument. Since they all appear in the indices of Book 1, and most come from the opening phrases of each Book, which thereby announce a major theme of the Book, one can claim that they are words which Pliny had in mind over and over again as he was writing.¹ A review of the indices will show that these eight words are scattered throughout the summaries: it is not just a question of some of them appearing once at the start.

The geographical Books (3-6) are, as I have said, somewhat different. They will not lend themselves to the eight *descriptores* I have suggested, but that is hardly surprising on account of their subject-matter, and in any case, Pliny himself supplies his own *descriptores* at the head of each

¹ I have assumed that Pliny himself either made or at least over-saw the making of the summaries on the grounds (a) that he claims to have produced at least one bibliography, that for Book 18: 'et alii auctores prodidere ea quæ prætexuimus volumini huic', (18.212, cf., 'alii illustres viri ... quos ... prætexuimus hoc in volumine', *ibid.*, 23). Strictly speaking these refer only to the list of authors, but it is difficult to see Pliny's taking a hand with the end of the index and not playing at least some part in the analytical section of the same index. (b) Pliny mentions his plan (*ratio*) of the whole work, 22.109. Cf., his reference to a plan for Book 12, (12.2). If he had an over-all plan and a detailed plan, it seems reasonable to suggest that he could either write the indices himself or at least direct his secretary how to proceed. Notice also Skydsgaard's comment, 'if such collections were worth such large sums of money ... the excerpts must have been arranged according to some system, enabling the person using them to do so without too much difficulty', *Varro*, 103.

relevant index: *situ, gentes, maria, oppida, portus, montes, flumina, mensuræ, populi*. (These require further discussion, *infra*, pp. 317-19). Book 2, on the other hand, takes a remarkably wide canvas for its picture and thereby differs from all the other Books. A system of *descriptores* works best when the subject-matter is fairly limited. Book 7, for example, although ostensibly about mankind, devotes over half its space to *mirabilia*. Book 8, supposedly about land animals, leaves out a remarkable number—no dogs, cats, horses, deer, wolves, foxes, rabbits, hares, rats or mice, for example—and even if it be argued that Pliny has based himself largely on Aristotle for the first half of the Book,¹ (not to mention Varro and Columella for the second), and is therefore much dependent on what Aristotle discusses, it should be noticed that Aristotle does, in fact, write in *Historia Animalia* about all the animals in that list with the exception of the rabbit and the rat. Book 9 is restricted to aquatic animals, Book 10 to birds, Book 11 to insects, and so on. With fairly limited subject-matter to deal with in each Book, a limited number of *descriptores* is bound to be applicable, even though there may be anomalies in the system.²

But Book 2, dealing as it does with the *mundus*, ranges somewhat too far for the *descriptores* which will happily fit the other Books, and in consequence one is compelled to suggest that it has been organised in a different way. A set of nine *descriptores* peculiar to this Book would cover the subject-matter: *mundus, stellæ, imbres, flumina, tempora, umbræ, motus terræ, maria, ignes* are punctuated by *mirabilia*. This system could work, but it does suggest that Book 2 stands on its own in relation to Books 7-37, as does the geographical group (3-6). Hence, I am tempted to wonder whether it is just the nature of the subjects *mundus* and *geographia* which require somewhat different organisation, or whether they were not part of the original subject-matter of the *commentarii* but were added later when Pliny decided to embark on the encyclopædic *NH*. But this is to assume that Pliny did indeed use a system of *descriptores* and that it was more or less similar to the one I have proposed; and since both these points are conjectural, one cannot employ them to construct an additional theory of composition. The most one can say about the *descriptores* is that they

¹ As Ernout does in his introduction to the Budé edition, p. 5.

² I have indicated in Appendix 12 those places where the *descriptores* I have chosen could be replaced by others, although it should be noted that they would be replaced by others from the list of eight and not by others entirely new to the proposed system.

make sense and do not conflict with anything we know about Pliny's working-methods and the material of the *NH* as we have it.

Counting items in the Indices

I mentioned earlier that the indices clearly tell us that Pliny could count individual items, (*supra*, p. 295). There are, in fact, several numbers which appear in his Prefatory letter, in the indices, and in the body of the *NH* itself. Why are they there and what do they mean? When Pliny says (*Præf.*, 17) that he has perused 2,000 volumes and collected 20,000 facts (*res*) obtained from 100 authors, we may be right to view these figures with a certain degree of caution, not necessarily because they are large, but because they are neatly rounded and do not square with the totals of volumes and authors obtainable by counting numbers elsewhere in the *NH*.¹ It may be that the 'hundred' authors represent those most commonly used by Pliny and other excerptors; or that they are the *exquisiti* who make up the authors he actually used in the *NH*; or the number is symbolic and, together with two thousand and twenty thousand, stands for 'a very large number'.² A similar phenomenon can be seen in the Old Testament where forty may be both a real and a symbolic number indicating 'a generation' or 'a very large number' or 'a very long time'.³ Nevertheless, although other Latin authors can be seen to treat *centum* and *mille* in a fashion which is clearly meant to be similarly symbolic of 'largeness',⁴ it is noticeable that no other technical writer or historian displays as much interest in numbers as does Pliny.⁵ It is not the numbers

¹ Pliny actually cites (as opposed, perhaps, to uses) 476 *auctores* both Latin and *externi*. See also Detlefsen who counts 34,707 pieces of information, by adding together the numbers of the indices, where Pliny claims 20,000 in the letter to Titus, *Untersuchungen*, 21.

² (i) Brunn: *De auctorum indicibus Plinianis*, 45. (ii) Oehmichen: *Plinianische Studien*, 87sq. (ii) Ferraro: *ASNP* 5 (1975), 530-3, especially 532. See also Köves-Zulauf: *WS* 86 (1973), 164-78.

³ See the *Jewish Encyclopædia* s.v. 'Numbers', p. 1258. Islamic lore treats forty in much the same way, especially in Persian and Turkish tradition.

⁴ Catullus 5.7., *mille, centum, mille, centum* etc. Horace: *Satires* 1.1.49, *centum, mille*; 2.3.69-70, *decem, centum, mille*. These references come from Ferraro's article, 532.

⁵ Santini and Scriveretto, for example, discuss twenty-one prefaces to technical works and one can see therefrom that numbers do not appear therein at all, *Prefazioni, prologhi, proemi di opere tecnico-scientifiche Latine*, (Rome, 1990). None of the remaining Greek or Roman historians

of the prefatory letter which are important, however, but those of the indices, as Detlefsen was right to point out. He suggests that these numbers fulfil two functions: they enable Pliny to boast of his achievements, and they offered him a means of bringing order to his material.¹ The first point may or may not be true. The second requires expansion.

Detlefsen's general argument runs as follows. Noticing that Pliny incorporates numbers of separate items within the content-guide of his indices as well as adding an overall total at the end of each index, he comes to the conclusion that 'Pliny added these numbers where he thought he had contributed to an increase in knowledge',² and then makes this further point.

The greatest density of numbers can be found in the indices of the medical Books, 20-32. In the index to Book 20, for example, one finds numbers of the *medicinæ* at each *lemma*:³ (xxxii) *seris gen II, medicinæ VII*; (lxix) *origano Heraclio gen. III, medicinæ XXX*; (lxxxvii) *sinapi gen. II, medicinæ XLIII*. Adding those figures, one arrives at 1791. Deducting the 8 *genera*, one gets 1783. The end of the index, however, reads: *Summa: medicinæ et historiæ et observationes MDCVI*, a figure considerably smaller than 1791 (1783) ... In no case does the grand total of the single numbers correspond to the figures at the end of the indices. The latter are always smaller, sometimes considerably smaller, than the former.

The obvious conclusion is that the end-figures have an origin different from the single figures ... [The latter] correspond to the content of their respective parts of the text.⁴ The end-figures can originate only in the *commentarii*. One cannot be absolutely certain about this, but one assumes Pliny tried to order his manuscripts by numbering sections and writing down their sums in each excerpt-roll. It seems that Pliny added the

betrays a Plinian interest in numbers, either. Cf., Detlefsen: *Untersuchungen*, 21.

¹ *Untersuchungen*, 21-2 and 91. Cf., T. Annius Rufus, consul in 128 BC, who boasted of his achievements by giving lists of the miles of roads he had built. Reference from Wiseman: *Roman Political Life*, 5-6.

² *Op. cit.*, 90.

³ Detlefsen earlier suggested that the *excerpta* to which Pliny the Younger referred were arranged in paragraphs for the sake of clarity, like *lemmata*, *op. cit.*, 22.

⁴ Detlefsen has given examples of what he means on pp. 24 sq., 67 sq., 81 sq.

numbers of the sections of the scrolls he had used in each Book, and put them at the end of the indices.¹

In other words, Pliny was able to count separate items of information in the text of the *NH*, and also separate items in his *commentarii*. The larger numbers represent extra contributions to knowledge which Pliny was able to make, presumably from autopsy, oral evidence, and so on.²

The problems of the numbers, however, are somewhat greater than Detlefsen acknowledges, although I think he is right when he says there must be two separate sources for the two different sets in the indices. Figures appear in the indices which can be divided into two groups: (a) Books 14-16 and 19, (b) Books 20-37. In group (a) the figures refer to *genera*; in group (b) they refer overwhelmingly to *medicinæ*—not surprisingly, considering the subject-matter of Books 20-32—with a mixture of *medicinæ* and other subjects in Books 34-7. The following table gives both figures, those in the body of the index and the total sum at the end.³

Group (a)					
Book	Body	Summary	Book	Body	Summary
14	289	510	16	206	1135
15	282	520	19	148	1144
Group (b)					
Book	Body	Summary	Book	Body	Summary
20	1780	1606	29	429	621
21	507	730	30	708	854
22	806	906	31	1004	924

¹ *Op cit.*, 91-2.

² *Op. cit.*, 23. Locher flatly denies that Pliny could count individual items in his text, although he suggests Pliny could count his notes. These, he assumes, must have existed as individual scraps of papyrus, etc. To this notion I have already objected, *supra*, p. 301, note 1.

³ I am aware, as was Detlefsen, that there are a good many manuscript variations in the summary figures, but in no case does any of the variant readings match the figure obtained from counting figures in the index. I shall discuss those Books without figures later.

23	1216 ¹	1418	32	1482	990
24	2020	1176	33	37	288
25	1728	1292	34 ²	239	257
26	560	1019	35	154	956
27	1066	602	36	92	434
28	1340	1682	37	4	1300 ³

Now, whereas it is true to say that the final figures in group (a) are always substantially larger than the Body figures, it is also noticeable that the figures in group (b)—and I intend to concentrate on Books 20-32 which focus on *medicinæ*—are variable. Sometimes the Body figure is larger than the summary, sometimes *vice versa*. If Detlefsen is correct in thinking that the Body figure is the sum of items in Pliny's text of the *NH*, it should be possible to show some kind of correlation between them. Let us take three examples:

(i) Book 20.3-8

The index says, 'cucumere silvestri XXVI',⁴ referring to sections 3 and 4. The text gives us *medicamentum elaterium* which is good for 'obscuritates et vitia oculorum, genarum ulcera', = 1 *medicina* and 3 diseases.

Vine-roots touched by the juice are protected from birds = 1 *medicina* and 1 magical use.

The root contributes to an ointment effective for gout = 1 *medicina* and 1 disease.

Its juice cures toothache = 1 *medicina* and 1 disease.

¹ This figure contains 'observationes circa ea XCI' because the *ea* refers back to 'quibus ægris danda' and is thus likely to be concerned with *medicinæ*.

² The Body figures for this and the next three Books refer only to *medicinæ*. There are one or two other figures, not amounting to any great total, which refer to examples or *genera*: 'nobilitates ex ære operum et artificium CCCLXVI' (34); 'nobilitates artificium in plastice XIV' (35), and so on.

³ The figures for Book 37 appear to be remarkably discrepant. I suspect that they may reflect the nature of the material in the sources which Pliny used for this Book. A good deal of it seems to have consisted of lists—hence the large summary figure which represents 'separate' items—whereas it provided him with scarcely any information about the medical uses of precious and semi-precious stones.

⁴ Or 'XX' in manuscript R^α.

When dried, it helps to heal 'impetiginem et scabiem quæque psoram et lichenas vocant, parotidas, panos sanat et cicatricibus colorem reddit', = 1 *medicina* and 7 diseases.

The juice helps to remedy deafness = 1 *medicina* and 1 disease.

Total = 6 *medicinæ*, 1 magical use, 13 diseases. If one adds together the 6 + 1 + 13, one arrives at 20 which is the reading of R^α but falls short of the 26 of the other manuscripts.

The index continues 'elaterio XXVII', referring to sections 5-8.¹ Sections 5 describes the best way to prepare *elaterium*, how long it can be kept, how to tell the genuine article, and what it looks and tastes like.

The seed can be used as an amulet in cases of conception and labour = 1 *medicina* and 2 magical uses.

The seed of 'scorpion' cucumber, and *elaterium*, are effective antidotes to scorpion stings = 2 *medicinæ* and 1 disease.

Doses of the same are remedies for phthiriasis and dropsy = 2 *medicinæ* and 2 diseases.

Elaterium helps to cure quinsy and tracheal affections = 1 *medicina* and 2 diseases. Total = 5 *medicinæ*, 2 magical uses, 7 diseases. If one adds together 5 + 2 + 7, one produces 14 which agrees neither with 27 nor with the 26 of manuscript R^α.

(ii) Book 21.121-7

The index says, 'de rosa, genera eius XII, *medicinæ* XXXII'; it is the latter with which I am concerned.² Sections 121-2 are concerned with describing the various parts of the plant and ways of removing extracts from those different parts. Pliny refers to a previous discussion on how to make wine from roses, (14.106), and then comes to the business of *medicinæ*.

The juice is used for 'aures, oris ulcera, gingivas, tonsillas, gargarizati, stomachum, vulvas, sedis vitia, capitis dolores ... somnos, nausias' = 1 *medicina* and 10 diseases.

The dried leaves 'in calliblepharum et siccis femina adsperguntur' = 1 *medicina* and 2 diseases.

The flower induces sleep, checks menstrual discharge and spitting blood. It relieves stomach ache = 1 *medicina* and 4 diseases.

¹ Or 'XXVI' in manuscript R^α.

² XXXII S. om. E¹ H. XXXII (XXIII VdT) alibi XXXIII r.

The seed is good for toothache, acts as a diuretic, and is applied to the stomach and erysipelas. It also clears the head = 1 *medicina* and 5 diseases.

Rose heads check diarrhoea and hæmorrhage = 1 *medicina* and 2 diseases.

The white part of the petals heal eye-fluxes and the discharges of eye-sores = 1 *medicina* and 2 diseases.

The petals are good for 'stomachi roсионibus et vitiis ventris aut intestinorum ... et præcordiis' = 1 *medicina* and 4 diseases.

Dried petals check perspiration = 1 *medicina* and 1 disease.

The galls help in a remedy for mange = 1 *medicina* and 1 disease.

Its roots treat snake-bite, fungus-poisoning, corns, hair-growth on burns, extravasated blood, the spleen, ruptures, spasms, menstrual discharge, cuts, lichens, leprous sores, face-scurf, and wrinkles = 1 *medicina* and 14 diseases.

The petals are applied to wounds = 1 *medicina* and 1 disease.

The seed is applied to erysipelas = 1 *medicina* and 1 disease.

The flowers and leaves help chronic sores = 2 *medicinæ* and 1 disease.

The juice helps the uterus, induces sweat, and brings boils to a head = 1 *medicina* and 3 diseases.

Total = 15 *medicinæ* and 51 diseases. If one adds together 15 + 51, one produces 66 which is over twice the number given by the index (32). Even restricting oneself strictly to *medicinæ* produces a number less than half that of the index.

(iii) Book 32.21-4

This is an example of the mixture of *medicinæ* and *observationes* which Pliny sometimes gives. The index reads, 'de curalio, medicinæ et observationes XLIII'.¹ Disentangling what Pliny may mean by separate *observationes* is more or less an impossible task. For example, the first sentence of 21 runs as follows: 'Quantum apud nos Indicis margaritis pretium est, de quis suo loco satis diximus, tantum apud Indos curalio; namque ista persuasione gentium constant'. How many *observationes* are there here? Two, if one takes the contrast between the values placed upon

¹ XLIII B S. om. FR.-III r H(D). The Loeb edition prints XLIV but translates '66'. The Budé edition prints XLIII and translates correctly. König-Winkler do likewise.

coral and pearls as a single statement followed by the generalisation about cost; or three, if one treats the Roman-Indian comparison as two separate points. If one adopts the latter (absurdly extreme) view, one can produce 55 *observationes et medicinæ* from 21-4, including 11 examples of *medicinæ* or *magica*. Neither the whole figure nor that for *medicinæ* agrees with the index total.

Certain conclusions can be drawn from these examples: (i) the totals of numbers mentioned in the separate indices do not correspond with the numbers given as totals at the end of each index; (ii) the separate numbers of the indices do not correspond with the numbers produced by counting individual items in the text of the *NH* to which one is directed by the indices; (iii) the inconsistencies are random, some numbers being smaller and some larger than others which are supposed to be related to them; (iv) not only, therefore, do the totals at the end of each index seem to come from a source different from the totals produced by adding the indices' figures together, but even those separate index figures appear to bear little or no relation to the text of the *NH*. We have, then, three separate possible sets of figures: (a) the index *summa*, (b) the separate figures within each index, and (c) the figures in the *NH* itself which can sometimes be counted with reference to *medicinæ* and the problems to be treated.

(5) Lists

I think an explanation is to be sought in the conditions which would almost inevitably give rise to confusion over numbers and, indeed, compound that confusion the longer and more detailed the *commentarii* became. Lists are methods of recording and classifying information of which Pliny availed himself frequently. Book 27, for example, consists almost entirely of an alphabetical list of plants; in Book 28.149, Pliny announces, 'digeremus enim in mala singula usus', and this he does for almost the rest of the Book; in Book 32.42, he says, 'hinc deinde in morbos digeremus aquatilia';¹ in Book 34 he has lists of sculptors (52-85) and (86-93); in Book 37 he gives an alphabetical list of stones, 'expositis per genera colorum principalibus gemmis, reliquas per litterarum ordinem

¹ It is worthwhile noting Pliny's further comment here, 'sed hoc utilius est vitæ, contributa habere remedia, cum aliud alii prosit, aliud alibi facilius inveniatur', since it shows he is conscious of trying to produce a work which will be both useful and easy to use.

explicabimus' (138-85) and again 'a membris corporis ... nomina' (185) and 'ab animalibus' (187). Indeed, whole swathes of the *NH* are at basis lists wherein the subject-matter is arranged according to various criteria.¹

There are, to be sure, different kinds of lists. Goody distinguishes three principal ones: (i) the inventory of persons, objects or events; (ii) the guide for future action, such as a plan or a shopping-list; (iii) the lexical list which is an inventory of concepts, an embryonic encyclopædia. A list of any kind encourages the ordering of its items by number, initial sound, category, and so forth: there are various ways of constructing it.² One can give Classical examples. Columella gives an inventory of persons—a bibliography, in fact—at the beginning of his work on agriculture, dividing the authors first into a Greek list and secondly into a Latin.³ Pliny starts to give a similar list in *NH* 18.22-3, but then breaks off, saying that he has already appended a full bibliography at the beginning of the Book.⁴ *P. Ox.* 3724, dated to the late first century AD, appears to be a kind of *commentarius* in which the principal of the three contributing hands has listed in abbreviated form a large number of epigrams, probably from more than one source, intending to copy the epigrams in full later. They seem to have been listed simply by their opening words and there are check-marks every so often, which may indicate either that the text has been located or that it has been copied.⁵ Alphabetically arranged material can also be found in both Greek and Latin texts. Verrius Flaccus ordered

¹ Book 35, for example, consists in large part of lists of painters, *celebres* (53-145), *non ignobiles* (146), *mulieres* (147-8) and then modellers (*plasticæ*), (153-8), and in 32.142 he carefully informs us that there are 144 species of aquatic plants. Cf., *P. Ox.* 1241, a chrestomathy of the second century AD, especially col. iv.10-35. In Pliny's *NH*, the geographical Books (3-6) are, of course, almost entirely lists of towns, peoples, rivers, mountains, etc. Book 7 contains lists of examples of longevity (153-64) and of inventors (191-200).

² *The Domestication of the Savage Mind*, 80-1.

³ *De Re Rustica* 1.1.7-14. Pliny mentions that there was a *præfatio* to Gaius Valgius's work on plants used in medicine (*NH* 25.4), but whether his *præfatio* was the same as, or similar to, Pliny's Book 1 is impossible to tell.

⁴ 'Sapientiæ vero auctores et carminibus excellentes quique alii illustres viri composuissent quos sequemur prætexuimus hoc in volumine'. *Prætexuimus* is important. Does it refer to Book 1 which would therefore already be written, or simply to a list at the front of Book 18?

⁵ See the comments by P. J. Parsons on column LIV of the published text, p. 68.

his *De Significatu Verborum* thus; *P. Ox.* 3239 (late second century AD) appears to consist of an alphabetical list of words along with their meanings; and in the same period, Harpocration's *Lexicon* listed 1247 glosses on words or phrases found in the Attic orators.¹ Valerius Soranus's *Ἐποπτίδων* according to Pliny, was prefaced by a table of contents and list of authors very similar in style to his own, (*Præf.* 33).

But if Pliny's lists are representatives of a not uncommon practice, one must be careful to distinguish between the lists in the *NH* itself and the lists which compose the initial indices. It is the latter which contain the numbers we were discussing earlier and which pose problems for our understanding of Pliny's compositional method. The lists in Books 2-37 are likely to have been lifted, either in part or *in toto*, from the source or sources he was using at the time of composition. To be sure, it would have been possible for him to have manufactured his own, but time and efficiency would surely dictate that he copy or modify existing lists whenever he came across them and wanted to use them.

An example of this has been discussed by Richmond in an article which has a bearing on the problem of indices.² He picks up a point which had been noted by Detlefsen,³ that in Book 32.142 Pliny says that a 'complete list of all 144 races of sea-fishes is known' whereas in the index to the Book he says 'animalium omnium in mari viventium nomina CLXXVI'. Reconciliation of these two figures needs to be undertaken. Richmond analyses Pliny's catalogue into four distinct lists:

- A: *Beluæ* (including river fish and amphibians)—32.144
- B: An alphabetical list of fishes *peculiares maris*—32.145-51.
- C: (i) *ab Ouidio posita nomina quæ apud neminem alium reperiuntur*, to which is added
(ii) 'Ovid's' *insignia piscium*—32.152-3.
- D: Fishes *a nullo auctore nominati*—32.154.⁴

Richmond assumes that certain groups in Pliny such as *chemæ striatæ*, *chemæ leves*, etc., are to be regarded as one *nomen* or *genus*. He also assumes that Pliny, 'when excerpting from "Ovid's" *Haliœutica*, intended to include only those names he had not already listed, and that

¹ Flaccus, see Festus's *Epitome*. Harpocration, see Keaney: *GRBS* 14 (1973), 416. There are some (but not many) dislocations in the material; one cannot be sure why.

² *Hermes* 99 (1971), 135-41.

³ *Untersuchungen*, 75.

⁴ *Art. cit.*, 135.

where he has a name included elsewhere in his catalogue, that name does not enter into the reckoning of the 144 or 176 names'.¹ By examining this catalogue closely, Richmond is able to come to a conclusion about Pliny's working method. 'He excerpted the names and brief descriptions from the *Halieutica*, and struck out what names were already in his list, unless there seemed to be some feature that indicated a separate species, or was of interest for its own sake'.²

Now, I suggest that this view of Pliny invites one or two further conclusions. First, it strengthens the notion that the *commentarii* consisted in large part of lists of fairly short pieces of information. This would have assisted checking and would have helped to make counting easier. Thirdly, however, it makes one think that there would also have been many chances of miscalculating the numbers of pieces of information, since the problem of whether to count items or names or *genera* as single pieces or multiple would always have been there and different people may have had different solutions to the question. I have already illustrated this point (*supra*, p. 309) in a discussion of *NH* 32.21. How does one write the first sentence?

'Quantum apud nos Indicis margaritis pretium est ... tantum apud Indos curalio;

namque ista persuasione gentium constant',

which looks like a single *res* followed by an *observatio* = 2 items or

'Quantum apud nos Indicis margaritis pretium est ...

tantum apud Indos curalio;

namque ista persuasione gentium constant',

which looks like two *res* followed by an *observatio* = 3 items. Writing it the second way would, surely, be absurd and yet someone who wished to count *every* item of information as a separate piece might well miss seeing all the possibilities.

When it comes to counting, however, I think we may put these problems on one side as of secondary importance. What matters to the format of the *commentarii* is how the totals and figures contained in the indices were arrived at. One thing they have in common, as we have seen. They do not agree with each other. This failure to agree is consistent and therefore not simply a matter of Pliny or his secretary's making a few

1 *Ibid.*, 136.

2 *Ibid.*, 138.

errors of calculation here and there, or failing to notice pieces of information.

Detlefsen has said, and I agree with him, that the figures in the indices and the sums at the end came from different sources. In his view, 'the end figures can hardly have any other origin than the excerpt-rolls'.¹ In my view the opposite is true. The figures within the indices came from the *commentarii* those at the end came from the text of the *NH* itself. Let us see how this would work.

Pliny was collecting material from his reading-matter over a long period of time. The number of *commentarii* tells us that. While he read, or was read to, he made marks against those passages he wanted to record or have recorded, in his *commentarii*. Each *commentarius* dealt with a separate general subject—*medicinæ ex arboribus silvestris, metallorum naturæ*, etc.—and in due time more than one roll may have been required, depending on how much material he was collecting for any given subject. In the margin, Pliny wrote the name of the author he was consulting. Constructing the lists of Latin and non-Latin authors at the end of each index would then have amounted to a simple matter of running the eye down the columns. Each *excerptum* was prefaced by a *descriptor* which would indicate at a glance the nature of the extract, and this would make collection of *excerpta*—*origines*, let us say, or *mirabilia*—to form coherent paragraphs in the text of the *NH* again a simple thing to do. These *descriptores* could have been set out slightly from the main body of the *excerptum*, in the manner we can see in the illustration on page 395. This is an abstract of contracts, dated to 42 AD, and employs a regular system of *descriptores*—Ομολογουσι, Συγγραφης, Τροφιδιτος— which are usually abbreviated and set in ekthesis.

Now clearly, if Pliny was writing a fairly long extract in his current roll—'Metalla', for example—a single *descriptor* such as *usus* or *origo* might not cover all the points contained in that particular extract. One might, therefore, posit the notion that Pliny could arrange the material—say on iron—according to blocks, each with its particular *descriptor*: a block on *usus*, a block on *origo*, etc. But here we can see the beginnings of confusion and inefficiency. In the current roll on 'Metalla', how can Pliny ensure that he leaves space for extra material on the nature of iron, the medical uses of iron, the origin of iron, *exempla* related to iron, and so forth? Frankly, I cannot see how he would manage to do this. In

¹ *Untersuchungen*, 91.

consequence, it is perhaps more plausible to suggest that any extract, however short or long, would carry its own *descriptor* and that in consequence a long extract would have to be split up as it was being transcribed so that the relevant *descriptores* could be appended wherever was thought convenient. The basic building-blocks of the *NH* are thus likely to have consisted of extracts which actually covered more than one *descriptor*, but had been recorded in such a way that Pliny could easily see what type of material they contained and could therefore re-arrange it as he saw fit—just as we have seen him doing with excerpts from Cato and Aristotle.

(6) Numbers (ii)

Now we come again to the question of numbers. Pliny's intention of adding indices to the *NH* was to render it unnecessary for Titus, a busy man, to have to read the text in order to find out what he wanted to know about any particular point. Others, too, could benefit from this facility which serves also as an indicator of where material is to be found in the *NH* itself.¹ Pliny is thus making two important points: (i) the indices form a time-saving device for busy people, and (ii) they serve as indices to the encyclopædia.² Now, it is noticeable that in the indices, not everything is counted. Apart from the geographical Books, the numbers refer almost entirely to *genera* or to *medicinæ*.³ They tell one how many kinds of *x* there are, how many *medicinæ* can be obtained using *y*. If Titus wanted to know the answers to that type of question, there they were in the indices, his reference-book. But when Pliny came to compose the *NH*, he was not necessarily intent on using every piece of information he had accumulated over the years. From a select number of authors ('ex exquisitis auctoribus'),⁴ he chose such material as he saw fit, supplementing his literary *excerpta* with information drawn from other sources.⁵ I have suggested that this included autopsy and oral evidence.

1 'Quia occupationibus tuis publico bono parcendum erat, quid singulis contineretur libris huic epistolæ subiunxi, summaque cura ne legendos eos haberes operam dedi. Tu per hoc et aliis præstabis ne perlegant, sed ut quisque desiderabit aliquid id tantum quærat, et sciat quo loco inveniat', (*Præf* 33).

2 Pascucci also distinguishes between the role of the *NH* for Titus and for others, *Como*, 196-7.

3 The exceptions are numbers of famous artists or works of art in the indices to Books 34-6.

4 Not necessarily exactly one hundred.

Because he was using selected extracts and not everything at his disposal,¹ the numbers of *genera* and *medicinæ* in the indices do not correspond with the numbers of *genera* and *medicinæ* one can count in the text itself. Hence the consistent mis-matching we have noted.

What, then, of the summaries at the end of each index? We are told that these represent totals, not of *genera* and/or *medicinæ*, but of *res*, *historiæ* and *observationes*, except in Books 20-33 and 35 where *medicinæ* is substituted for *res* in the formula. (The geographical Books have their own formula). Clearly it is not the numbers of the indices which are being counted, so the totals must refer to items in the *NH* text. But can one actually distinguish, and therefore count, *res* from *historiæ* and both from *observationes*? *Res* is given 19 separate paragraphs in *OLD* in an attempt to indicate the wide spread of meanings attached to it. *Historia* means 'inquiry, record of investigations, history, narrative'. *Observatio* is a 'remark, note, observation'. How would one be able to set up criteria tightly enough defined to be able to point out individual sentences in the *NH* and say, 'this is a *res*' or 'this is an *observatio*'? It is much more likely that these three terms are simply intended to give the reader of the indices an indication of the fact that the evidence contained in the *NH* is not entirely of one kind, but mixed. Some is fact, some is the result of inquiry, some of observation: in other words, it is a mixture of reading, oral evidence, and autopsy. If this is so, the *summa* at the end of each index is a piece of showing-off. Pliny either kept a running-total of items he was using from the *commentarii*, or made up an impressive number to go at the end. Detlefsen is reluctant to admit the last possibility,² but I think it ought to be mentioned. Nevertheless, the numbers do look as though they are real rather than fictitious totals—there is no evidence of the rounding up or down one might expect if they were false³—and it would have been possible for Pliny to count his *descriptores* without much trouble.⁴

5 'Adiectis rebus plurimis quas aut ignoraverant priores aut postea invenerat vita', (*Præf* 17).

1 As I have already pointed out, 160/320 rolls of *commentarii* represent potentially far more material than he needed for the *NH*.

2 *Untersuchungen*, 28.

3 Book 2 = 417; 7 = 747; 8 = 787; 9 = 650; 10 = 794, etc.

4 Some totals are very large. Book 11 = 2,700; 16 = 1,135; 17 = 1,380; 18 = 2,060; 19 = 1,144; 37 = 1,300. Documents and commentaries often had wider columns than other types of written work, (Turner: *Greek*

The geographical Books present problems of their own. Each begins by announcing the same list of subjects, (possibly in themselves *descriptores*)—*situs, gentes, maria, oppida, portus, montes, flumina, mensuræ populi qui sunt aut fuerunt*—but each ends with a group of six totals, not just one: *summa: oppida et gentes; summa: flumina clara; summa: montes clari; summa: insulæ; summa: quæ intercidere oppida aut gentes; summa: res, historiæ et observationes*. First, it should be noted that the totals are not attempting to count every item mentioned at the head of each Book; only certain items are chosen. Secondly, it is famous rivers and mountains, as opposed simply to rivers and mountains. That should limit the objects counted. Thirdly, each Book does actually end with a sum total like that of all the other Books. Detlefsen was concerned that the figures for individual items in the geographical indices and in the text of the geographical Books do not match the figure (available only for Book 6) of *res, historiæ et observationes*.¹ But if I am right about the functions of the two different figures, this inability to match is of no consequence. Indeed, one does not expect them to match.

One of the most noticeable curiosities of the indices of Books 3-5, however, is that the *summa* figures are almost entirely missing. The exception is *insulæ CXVIII* in Book 5. Detlefsen tries suggesting that the *summa: res, historiæ et observationes MMCCXIII* in Book 6 may have been meant as the *summa* for all four geographical Books.² This figure he

Manuscripts of the Ancient World, 8). If we measure such a column at 7 inches, (the width, for example, of the manuscript in the illustration on p. 395) and assume, with Pliny, that the average length of a roll is 15 feet (*NH* 13.71), we have a roll of approximately 20 columns. There are 45 lines to the column in my illustration. This gives us 1,800 for a roll written only on one side: 3,600 for a roll written on both, as at least some Pliny's *commentarii* may have been: and an even larger number of lines (and even columns) per roll because Pliny's *commentarii* were written in a very small hand (Pliny: *Ep.* 3.5.17). This merely demonstrates that a very large number of separate items, obviously of varying length, could be recorded on one excerpt-roll: and there is no reason to suppose that each subject Pliny tackled was confined to a single roll. The widely differing figures of the *medicinæ* Books (*supra*, p. 306) could be governed by the differing amounts of available material and by inconsistencies in counting. Does the *descriptor* 'medicina', for example, refer to every single item mentioned as a remedy for a particular problem, or does it stand for a group of such *remedia*? The implications for counting are obvious.

1 *Untersuchungen*, 28.

2 *Ibid.*

links to *res*, although he does not explain why or how. One has to ask why Pliny would depart from his established practice of giving such a *summa* at the end of each index only for the geographical Books? It cannot relate to the subject-matter, otherwise one would have to explain why geographical features should be lumped into a single total and why not plants and *medicinæ*. Nor will the size of the final figure be significant. That for Book 11 is greater (2700), that for Book 18 only slightly less (2060). Moreover, the formula for each *summa* is written at the end of Books 3-5. Why bother, if only Book 6's figures are supposed to count?

Finally, Detlefsen comes to the conclusion that the absence of figures cannot be blamed on copyists but must have existed in Pliny's master-copy. Pliny then continued to work on the *NH* after presenting it to Titus in 77, but did not have time to fill the gaps and did not inform himself about the islands of the western Mediterranean until he became Prefect of the Misenian Fleet.¹ I have to confess myself unconvinced by these suggestions. The notion that Pliny should present an incomplete copy of the *NH*—and incomplete in that very part which he has urged upon Titus in his prefatory letter as an informative, time-saving section of the whole—I find untenable. Nor can I envisage a man of Pliny's standing and intellectual curiosity being uninformed about islands in that part of the Mediterranean with which—considering his certain procuratorship in Hispania and very likely procuratorship in Africa—he would probably, in fact, have been perfectly well acquainted.

The fact of the matter is that although most of the *summa* are missing from Books 3-5, not all are. In some manuscripts of Book 3, *summa: oppida et gentes* has XXVI, and *summa: res et historiæ et observationes* has CCCXXVI.² Book 4 has no *summa* figures, but Book 5 has *summa: insulæ* CXVIII with one manuscript variation, CXVII, not to mention two conjectures.³ Numbers, then, do exist and it would be extraordinary to suggest that they had been inserted by later copyists who had chosen to fill in one or two gaps but leave the majority still blank. Therefore we must assume that numbers existed for all the blanks at least

1 *Ibid.*, 29.

2 *va. H.* and *va. D.* respectively.

3 CXVIII *ll.v(S)*. CXVII *dT Brot.* CCCXVIII *coni. H.* CCVIII *coni. D(UZp. 27)*. Some figures, all relating to islands, occur in the body of the index, too. *Insularum ante Asiam*, CXII with the variant CCII *D(UZp. 26)*. Book 3 has *insularum* LXIII. Even Book 4 has *insularum in Gallico oceano* XCVI *quas inter Britannia*.

in the copy which Pliny presented to Titus. The indices, as I have suggested, were supposed to be summaries of the current state of knowledge for Titus's particular consultation. The *summa* figures were of a different order, simply indicating the amount of material Pliny had used in the *NH* itself. Now, of all the items of *summa* knowledge, *insulæ* provide the easiest to count since islands are less likely to appear or disappear than are towns and peoples. In consequence, it is not surprising that this is the item which has numbers in all four geographical Books, although 3 and 4 have them in the body of the indices and 5 and 6 as *summa* figures. Explaining this feature is difficult. Over all, however, I think that the problem of providing Titus with accurate and up-to-date numbers in the geographical indices would have posed special problems. Numbers of *genera* and *medicinæ* would naturally have been much more stable. At some point, therefore, *after* Titus received his copy of the *NH*, I suggest that Pliny or someone else, (possibly his nephew), wanted to revise the figures in these Books and had the majority scrubbed from the copy which subsequently provided the master-copy for subsequent 'editions'. A few numbers were thought to be accurate: these were retained. The others were to be replaced. It is the only explanation which will satisfy Titus's receiving a complete copy of the work, and the survival of a version which is incomplete in only one area. Book 6 may have its numbers complete, of course, either because these are the original figures which were found to be correct, or because these are the revised figures themselves.

(7) Conclusions

- (i) Pliny had a long-standing habit of excerpting from what he read. He indicated, either to himself or to his secretary, those passages he wished to be copied into his *commentarii*, such indication consisting of marks made (probably) in the margins of the book he was reading.
- (ii) Pliny abbreviated, re-assembled, and summarised these passages, whether at the point of including them in the *commentarii* or using them during the composition of the *NH*, one cannot tell.
- (iii) Pliny's large number of *commentarii* was built up over a long period of time. It seems possible that the *commentarii* could have contained more information than was necessary for the composition of the *NH* alone. It is also worth asking whether the *NH* actually was composed from material contained in the *commentarii*, since Pliny the Younger does

not explicitly link the two, although it is generally (and reasonably) accepted that this was, in fact, the case.

(iv) He must have had some pre-determined way of ordering the material he included therein.¹ My suggestion is that each fresh general topic had a *commentarius* roll and that second and third rolls could be added if the volume of *excerpta* for that particular subject required it.

(v) Pliny further organised the material in each *commentarius* by attaching to each extract a *descriptor* which would tell him at a glance what kind of material the extract contained. These *descriptores* would also enable him to count the number of items in each *commentarius* and would help him to keep a tally of the number of items he was using in composition.

(vi) I have further suggested that the *summa* numbers at the end of each index in Book 1 refer to the number of separate items Pliny has included in each Book of the text. *Res/medicinæ, historiæ* and *observationes* should not be regarded as individual pieces of information which can be identified and counted, but as Pliny's way of telling us that the *summa* consists of factual material taken from his reading, oral evidence and autopsy.

(vii) The numbers contained in the body of each index inform Titus of the number of *genera, medicinæ, etc.*, which were known at the time of Pliny's writing. Pliny designed the indices as tools specifically for Titus's further information and to save him from having to read the *NH* to get the information.

(viii) Three of the four geographical Books have indices which lack most of the numbers. They must have been there in the copy given to Titus, but it is possible they were largely removed from later editions to make way for revised figures which, for whatever reason, were never added. Thus the transmission of the *NH* manuscripts—in a highly patchy state²—was left with blanks.

¹ Cf., Skydsgaard: 'If a person excerpts all that seems of interest to him as he reads and gradually makes his notes directly on a papyrus roll, it goes without saying that his collection of notes will soon become as unhandy for practical reference as the original books', *Varro*, 102.

² See again Reynolds: *Texts*, 307-16.

Appendix 1
Records of posts held by equestrian officers
before and after their military careers

This information offers a break-down of 299 careers falling between the beginning of the reign of Augustus and the end of Nero's. These careers are dated, but I have not included any which are given simply as 'first century', as there is no telling whether they are pre- or post-Flavian.

Pre-military and military offices only	75
Military and post-military offices only	88
Military and pre- and post- military offices	32
Military offices only	110

The types of evidence fall into eight categories as follows:

Sources

Mutilated inscriptions ¹	50
Honorary inscriptions	93
Sepulchral inscriptions ²	99
Literary passages	26
Votive inscriptions	13
<i>Diploma militare</i>	3
Dedication by the man himself	10
Other ³	11

¹ I have not distinguished herein the type of inscription, whether honorary or sepulchral, for example. If it is recorded as 'mutilatus', it has been included.

² There are often question marks by the side of both this and honorary inscriptions. I have seen fit to include both certain and uncertain material, otherwise there would be too little evidence to make any investigation worthwhile. It is usually clear that the attribution of 'honorary' or 'sepulchral' is a sensible conjecture, almost certain to be right in most instances.

³ These are inscriptions which, for various reasons, do not fall clearly or conjecturally into one of the other categories.

If we now distribute those categories among the records of pre-military, post-military, and pre- and post- offices, we obtain the following information:

Pre-military and military posts only

Mutilated	14
Honorary	28
Sepulchral	25
Literary	0
Votive	2
<i>Diploma</i>	0
Dedication	4

Military and post-military offices only

Mutilated	16
Honorary	32
Sepulchral	30
Literary	0
Votive	4
<i>Diploma</i>	0
Dedication	0
Other	2

Records of both

Mutilated	3
Honorary	16
Sepulchral	10
Literary	0
Votive	2
<i>Diploma</i>	0
Dedication	1

Military career only

Mutilated	17
Honorary	17

Sepulchral	39
Votive	5
Dedication	3

APPENDIX 2:
Pliny's references to earlier Books in the *NH*

Reference	Text	Earlier text
4.104	ultima omnium quæ memorantur Tyle	2.187
4.118	præter iam dictos	3.13
4.122	ut diximus	3.43
5.135	Icaron, de qua dictum est	4.68
5.150	diximus	4.76
6.15	ut dictum est	5.98
6.25	ut dictum est	5.83
6.116	Arabum populis in <i>priore dictis volumine</i>	5.86sq.
6.119	Nicephorion quod diximus	5.86
6.119	dicta est Apamea	5.86
6.120	diximus	5.89
6.125	diximus	5.87
6.141	introitu operis	3.2
6.142	ut diximus	5.85
6.142	ut docuimus	5.65
6.143	ut diximus	5.65, 86; 6.125
6.171	hæc est regio <i>secundo volumine</i> a nobis significata	2.83
6.177	diximus	5.61
6.195	diximus	5.10
7.6	diximus	Books 3–6
7.9	indicavimus	4.88; 6.53
7.10	Arimaspi quos diximus	4.88; 6.50
8.152	ut diximus	2.107
9.57	sicut in genere terrestrium retulimus	8.126sq.
9.106	ut diximus in circuitu mundi	6.81, 110
10.58	ut diximus	6.70; 7.26sq.
10.127	in insula quam diximus	3.151
10.142	filio a quo devoratas diximus margaritas	9.122
10.143	quæ diximus in aquatilibus	9.37, 78
10.179	elephanti ut diximus	8.28

10.184	de quibus ante diximus	7.63
10.200	lupi ut diximus	8.83
10.207	dicta sunt quæ Arcadia narrat	8.61
11.6	quod docuimus	9.16sq.
11.122	diximus	10.68
11.132	suo diximus loco	8.130; 10.117
11.133	quæ mollia appellavimus	9.83
11.136	quæ cartilaginea appellavimus	9.78
11.142	de geminis pupillis satis diximus	7.16
11.170	reliqua dicta sunt	7.68sq.
11.173	de purpurarum linguis diximus	9.128
11.224	diximus	8.122; 9.87
11.225	quæ mutare diximus colorem	8.122; 9.87
11.258	diximus	9.83
11.261	diximus	10.173
11.267	alii de quibus diximus	9.70
11.279	diximus	7.13sq.
11.280	quæ animalium pascerentur veneno diximus	10.69
12.16	diximus	11.278
12.17	lanigeras Serum narravimus	6.54
12.17	item Indiæ arborum magnitudinem [narravimus]	7.21
12.19	ut diximus	6.81
12.37	quod Persicum sinum appellavimus	6.108
12.102	ex quo diximus oppido	6.144
13.8	de quibus supra diximus	12.108
13.16	quæ esse dictas	12.43sq.
13.73	ille calamus lacum	12.104
13.90	qualis dicta est	12.38sq.
13.90	in mentione earum dicta sunt	6.198sq.
14.98	diximus <i>priore libro</i>	12.130
14.101	dictum est	13.106sq.
15.9	sicut in omphiaco diximus	12.130
15.28	dictum est	12.100, 109
15.29	de ipsa œnanthe dictum est in unguentis	12.132
15.39	dicta sunt	13.112

15.47	de citreis diximus	13.103
15.67	de palmis diximus	13.39
15.68	de Ægyptiæ Cypriæque miraculis retulimus	13.56sq.
15.83	ut diximus	13.51
15.91	in suo loco retulimus	13.51
15.114	quam in Ægypto diximus	13.62
15.118	ut diximus	14.104
16.2	diximus	13.139
16.14	ut retulimus suo loco	7.102
16.31	ut diximus	11.30
16.32	in conchyli mentione tradidimus	9.140sq.
16.33	uti diximus inter unguenta	12.108
16.38	de quibus dictum est	12.35
16.61	dicta est de nucleis	15.36
16.85	quam et cici diximus vocari	15.24
16.89	dictum est	13.30
16.93	ut diximus	8.166
16.112	ut dictum est	13.30
16.240	regionem Aulocrenen diximus	5.106
17.5	de longissimo ævo arborum diximus	16.234sq.
17.11	quod diximus	16.109
17.23	diximus <i>secundo volumine</i>	2.119
17.29	diximus	14.23
17.60	genera eius diximus	15.127sq.
17.73	ut diximus	16.211
17.136	diximus	14.74, 77
17.151	de cupresso satis diximus	16.139sq.
17.153	ut dictum est	16.163; 13.122
17.187	docuimus	14.20sq.
17.200	abunde tractatus est	12.22sq.; 15.1sq.; 16.62sq.
17.216	abunde diximus	13.26; 130sq.
17.237	ut diximus	8.204; 15.34
17.238	diximus	13.36

17.248	diximus	16.123, 130, 173, 241
18.1	inter initia operis	2.154sq.
18.3	indicavimus	8.88, 96sq.
18.23	<i>[illustres viri composuissent quos sequemur prætexuimus hoc in volumine]</i>	
18.28	dictum est	17.36
18.34	abunde dixisse possumus videri	17.25sq.
18.44	abunde indicata est	17.3
18.134	diximus	17.54
18.148	diximus inter frutices	13.130
18.167	ut diximus	5.57
18.187	ut <i>priore</i> diximus <i>volumine</i>	17.56
18.191	quam appellavimus teneram	17.36
18.192	<i>priore</i> diximus <i>volumine</i>	17.50
18.217	in <i>sexto volumine</i> fecimus	6.212sq.
18.219	diximus	2.7sq.
18.225	ut diximus	2.125
18.232	tempus hoc dedimus	16.188
18.239	diximus <i>secundo volumine</i>	2.122
18.240	diximus	17.176
18.240	uti dictum est	17.28
18.270	ut suis locis diximus	2.107; 9.58
18.273	diximus	17.11
18.275	ut sæpius diximus	2.46
18.278	ut sæpius diximus	2.106
18.283	[refers indirectly] diximus	16.99, 103
18.287	ut docuimus	16.104; 17.11
18.301	indicavimus	15.33
18.320	de viniis adfatim dicta sunt	14.59sq.; 15.5sq., 49
18.323	dicta nobis <i>secundo volumine</i>	2.41sq.
18.329	diximus	2.119
19.6	<i>priore libro</i>	18.326sq.
19.15	ut diximus	12.38
19.32	ut iam et alio loco diximus	15.1

19.63	diximus	16.31
19.77	in rapis dicta sunt	18.129
19.145	abunde dictum	16.173
19.151	indicavimus	16.173
19.160	sæpius dicta est	18.227
19.163	diximus inter peregrinos frutices	13.127
19.173	ut diximus	8.99
19.173	de qua diximus inter externos frutices	13.124
19.175	in peregrinis fruticibus diximus	13.123
19.179	diximus	18.159
19.187	de panace abunde dictum est	12.127
20.22	diximus	19.82
20.64	effectus (præter iam dictos)	19.127sq.
20.67	quam meconidem vocavimus	19.126
20.126	iam de venere stimulanda diximus	19.154
20.127	ut diximus	19.155
20.165	de cappari satis diximus	13.127
20.168	ut diximus	19.165
20.172	quam libanotida appellavimus	19.187
20.174	quam et siliquastrum appellavimus	19.187
20.175	ut diximus	19.165
20.198	papaveris sativi tria diximus genera	19.168
20.204	rhoeam vocavimus et erraticum	19.169
20.236	sinapi cuius in sativis tria genera diximus	19.171
20.241	inter silvestria dicta	16.167
20.254	ut diximus	8.98
20.262	de carduorum satu inter hortensia diximus	19.152
21.15	ut diximus	13.9
21.30	diximus in nardi generibus	12.47
21.52	in fruticum loco abunde diximus	16.144sq.
21.58	de qua diximus	20.172
21.83	de qua diximus in natura apium	11.16
21.85	in natura [apium] dicta sunt	11.11sq.
21.106	ut diximus	18.244
21.120	ut suo loco rettulimus	12.104
21.123	diximus inter genera vini	14.106
21.135	ut diximus	12.45
21.165	quod rhoean vocavimus	19.168

22.1	<i>prioris ... voluminis</i>	21.
22.16	<i>priore libro nominavimus</i>	21.
22.26	diximus	11.24
22.31	diximus	15.30
22.37	lamium appellavimus	21.93
22.41	diximus <i>priore libro</i>	21.96
22.57	sæpius diximus	2.109; 18.252
22.66	ut diximus	21.105
22.67	anthericum vocavimus	21.109
22.97	ut diximus	16.31
22.97	adversus hæc diximus remedia	20.25, 47, 86,94, 132, 236; 21.126, 184
22.100	ut dictum est	19.41
22.100	ut diximus	19.39
22.107	ut diximus	11.11
22.107	de qua diximus	11.16
22.109	diximus	11.32
22.109	rursus [diximus]	21.74
22.112	ut diximus	21.182
22.115	docuimus in ratione vini	14.85
22.116	suis locis diximus	11.18; 21.83
22.126	in frugum loco satis diximus	18.72
22.132	diximus	23.95
		(anomalous)
22.151	de ervo quædam diximus	18.139
22.158	diximus	18.96
22.159	ut diximus	18.96
22.162	orobanchen appellavimus	18.155
23.2	quæ suis locis diximus	12.133
23.7	in unguentorum loco docuimus	12.130
23.8	dicta nobis in unguenti ratione	12.132
23.14	suo loco diximus	14.117
23.31	vini genera exposuimus	14.59sq.
23.52	vini genera quæ fingi docuimus	14.98sq.

23.53	quod bion appellavimus	14.77
23.59	ea quæ diximus	20.98sq.
23.74	de amurca poteramus videri satis dixisse	15.33sq.
23.79	olei naturam causasque abunde diximus	15.4sq.
23.88	quod caryinum appellavimus	15.28
23.90	docuimus	12.109
23.92	ut in unguentis diximus	12.111
23.93	malobathri naturam et genera exposuimus	12.129
23.94	narcissinum dictum est	21.129
23.95	Syrium vocavimus	21.127
23.95	diximus	15.21
23.96	diximus	15.32
23.103	quod melinum vocavimus	13.11
23.106	quæ apyrena alio nomine appellavimus	13.112
23.106	vinosa diximus	13.113
23.112	quos balaustium vocari diximus	13.113
23.134	ut diximus	13.56sq.
23.135	diximus	16.102
23.158	his nominibus quæ diximus	15.132
23.164	myrtidanum diximus	14.104
24.6	diximus suis locis	21.103; 13.104sq.
24.8	principalia genera diximus	16.32, 26
24.11	diximus	16.30, 245sq.
24.17	diximus	16.52
24.21	de galbano diximus	12.126
24.22	diximus	12.126
24.23	ut diximus	12.107
24.24	in peregrinis arboribus exposuimus	12.124
24.25	spondylium demonstratum	12.128
24.27	ut indicavimus	12.108
24.32	docuimus	14.122
24.32	postea [docuimus]	16.38
24.34	satis demonstravimus	16.54
24.37	indicavimus	14.127sq.; 16.52sq.
24.40	diximus	16.52
24.41	zopissam eradi navibus diximus	16.56

24.46	indicavimus	16.64
24.47	in unguentis usum exposuimus	12.132
24.49	uti diximus	16.192
24.65	cum docuerim	19.15
24.68	ut diximus	16.108
24.75	hederæ genera viginti demonstravimus	16.141sq.
24.77	hedera quam chrysocarpon appellavimus	16.147
24.83	diximus	16.155
24.85	harundinis genera XXVIII demonstravimus	16.156sq.
24.89	ut docuimus	12.17
24.96	quam struthion a Græcis vocari diximus	19.48
24.99	dictum rosmarinum est	19.187
24.101	ut diximus	16.30
24.105	cummium genera diximus	13.66sq.
24.107	in odorum loco diximus	13.63
24.111	ut diximus	12.110
24.113	diximus	12.110
24.125	in Indicis arboribus diximus	12.31
24.142	inter bulbos diximus	19.96
24.158	in terræ miraculis diximus	2.235
24.172	rumpotinum arborem demonstravimus inter arbusta	14.12
24.184	docuimus suo loco	18.140
25.12	diximus	21.44, 145
25.14	ab alite quam retulimus	10.40
25.16	quam retulimus	18.160
25.18	in <i>priore ... volumine</i> diximus	24.143
25.30	qualem diximus	12.127
25.31	inter peregrina docuimus	12.127, 128
25.32	de quo origano diximus	20.170
25.34	diximus inter vites	23.27
25.34	sicuti [diximus]	22.43
25.37	ut diximus	15.30; 23.94
25.52	ut diximus	22.133
25.52	diximus	19.4; 24.9
25.77	indicavimus	19.128
25.92	de qua diximus	22.79

25.92	ut indicavimus	8.112
25.105	indicavimus	22.5
26.7	diximus	20.144
26.20	<i>priore libro</i>	25.
26.24	ut in quibusdam diximus	21.144; 25.174
26.38	quam nuper inventum diximus	25.86
26.39	suo loco diximus	21.44, 145-7
26.44	uti dictum est	25.88
26.48	plura de eo diximus inter unguenta	12.73sq.
26.49	ut diximus	24.81
26.78	ut diximus	25.23
26.94	ut diximus	25.75
26.100	uti dictum est	25.88
26.104	quam psyllion appellavimus	25.140
26.107	de qua diximus	25.28
26.112	ut dictum est	25.88
26.113	quam heraclion diximus	25.32
26.123	ut diximus	25.67
26.132	dicta in pratis	18.259
26.139	quam chironiam diximus	25.32
26.147	ut diximus	22.70
26.157	ut diximus	25.173
26.163	quod digitillum appellavimus	25.160
27.26	de qua diximus	26.85
27.44	in satis diximus	23.19
27.46	ut diximus	14.109
27.121	diximus	18.155
27.143	ut diximus	20.5
28.3	dictas iam a nobis naturas animalium	8.97sq.; 25.89sq.
28.13	ut suo loco docuimus	2.140
28.30	diximus in portentis gentium	7.13sq.
28.34	diximus de Pyrrhi regis pollice	7.20
28.62	docuimus	8.138
28.77	ut suo loco indicavimus	7.64
28.80	docuimus	7.65
28.92	de permutatione sexus diximus	8.105

28.121	ut diximus	8.96
28.125	diximus in ratione herbarum	25.94
28.131	de generibus caseorum diximus	11.240
28.149	dictum est	8.118
28.150	ut indicavimus	8.118
28.153	diximus	8.214
28.228	ut diximus	8.119
28.247	diximus in natura boum	11.203
29.49	diximus	10.167
29.50	quod rhus diximus	24.91
29.57	de anserum honore diximus	10.51
29.59	ut diximus	2.109; 11.196
29.97	diximus et mellis venenati genera	21.74
29.122	ut suo loco docuimus	2.163
29.123	diximus	10.10
29.127	ut in capris diximus	28.170
30.12	<i>priore volumine exposui</i>	28.17
30.20	ut diximus	29.89
30.30	ut supra dictum est	29.59
30.30	diximus	22.45
30.40	ut diximus	29.70, 121
30.54	quam oniscon appellavimus	29.136
30.56	de quibus diximus	29.112
30.90	ut diximus	29.60
30.123	sicut in capris rettulimus	28.256
31.16	fontibus his quos diximus	2.230
31.21	inter initia operis abunde multa rettulimus	2.224sq.
31.26	ut diximus	2.231
31.28	ut indicavimus	4.31
31.44	de qua dictum est	26.30
31.62	ut diximus	24.28; 28.54
31.124	docuimus	9.149
32.5	nos plurium opiniones posuimus	9.79
32.6	ut diximus	9.79
32.14	ut diximus	9.76
32.16	de quo diximus	31.37

32.21	de quis suo loco satis diximus	9.104sq.
32.25	utpote dixerimus	9.155
32.43	venenatum mel diximus	21.74sq.
32.43	quod esset scincus diximus	8.91; 28.119
32.43	sæpius [diximus]	7.64; 28.82
32.50	ut diximus	8.110
32.59	ut in natura aquatiliū diximus	9.96
32.66	ut diximus	26.103
32.108	diximus	9.40
32.110	de quo diximus	27.56
32.112	ut diximus	8.111
33.58	<i>septimo volumine</i> diximus	7.97
33.116	ut diximus	8.34
34.1	ut diximus	33.43, 138
34.1	docuimus	33.42sq.
34.2	dictum est	33.95
34.27	ut diximus	33.132
34.116	diximus	33.93
34.160	ut diximus	33.130
34.173	quam alio loco galenam appellavimus	33.95
35.29	diximus	33.117
35.30	quos in metallis diximus	30.111, 158
35.37	in plumbi metallis diximus	34.175
35.39	sandaraca quomodo fieret diximus	34.177
35.85	ut diximus	7.125
35.106	ut diximus	34.91
35.128	dictus est nobis	34.50
35.153	de quo diximus	34.61
35.157	de quibus supra diximus	8.161; 28.16
35.163	in natura avium diceremus	10.141
35.174	diximus	3.92sq.
35.178	ut diximus	5.72
35.179	in <i>secundo</i> diximus <i>volumine</i>	2.235
35.182	diximus	34.15

35.202	de quibus iam diximus	3.78; 5.42
36.20	inter statuarios diximus	34.69, 70
36.55	dicta sunt	4.67; 5.22
36.76	diximus	5.48
36.115	ut indicavimus	34.36
36.149	sicut in <i>decimo volumine</i> diximus	10.12
36.152	ubi terram laudavimus	35.191
36.202	indicavimus	26.5
37.2	diximus	33.8
37.13	regibus in <i>VII volumine operis huius indicatis</i>	7.98
37.62	in <i>nono</i> diximus <i>volumine</i>	9.106-23
37.177	de opsiano lapide diximus <i>priore libro</i>	36.196-7

APPENDIX 3:
Examples of *scimus* in the *Naturalis Historia*

Reference	Quotation
1 7.78	voluntate scimus sitim victam, equitemque Romanum Iulium Viatorem e Vocontiorum gente ... in senecta caruisse potu.

This anecdote is preceded by 'concretis quosdam ossibus ac sine medullis vivere accepimus', and that 'accepimus' suggests a context of oral evidence. Pliny has been told about people with solid bones ('accepimus') and has accepted as reliable information the story of Iulius Viator ('scimus'). It is possible, of course, that he knew Viator personally, but the passage will not allow us to say this as a fact. It is also possible that the 'we' in either instance or in both does not refer to Pliny alone.

2 8.119	Quasdam modo principes feminas scimus omnibus diebus matutinis carnem eam [i.e., venison] degustare solitas et longo ævo caruisse febribus.
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Given Pliny's friendship with Titus and Vespasian, it is possible that he is providing a personal observation. There is no telling which Imperial women he meant. Vespasian's first wife, Flavia Domitilla, died in c. 69. His unofficial wife, Antonia Cænis, was about fifty when Flavia died and herself lived on into the early 70s, being dead by 75 AD. [See Dio Cassius: 65.14.1]. This may have counted as 'a long life'. We do not know when Vespasian's mother, Vespasia Polla, died or even if she lived at Court. 'Modo' is also difficult to gauge. 'Only recently, just now' are the meanings given by the *OLD*, and yet Pliny the Younger can write to Caninius Rufus, 'An non videtur tibi Nero modo modo fuisse?' (*Ep.* 3.7.11) referring to a gap of thirty years or so; and his use of 'nuper' two short sentences further on implies an even greater gap. Since Pliny the Elder's use of such words reveals a similar breadth of meaning, we cannot assume that his observation here refers to Vespasian's Court, and in consequence there is no reason to press this 'scimus' into anything like an implication of autopsy.

3 14.130	Et addi scimus tinguendi gratia colores ut pigmentum aliquod vini atque ita pinguius fieri.
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Pliny has just referred to Cato: *De Agricultura* 23 and 114, 115, 122, although he seems to have muddled his information somewhat [See André's note *ad locum* in the Budé edition]. In the sentence before 'scimus', Pliny offers an explanatory comment on Cato's word 'tortivus'—'nos intelligimus novissime expressum'. Here the 'we' almost certainly refers to Pliny himself, and so this increases the likelihood that 'scimus' which occurs only two words later, should be interpreted in the same way.

- 4 19.35 Larcio Licino ... paucis his annis scimus accidisse mordenti tuber ut deprehensus intus denarius primos dentes inflecteret.

It is generally assumed that Licinus and Pliny knew one another in Spain. Certainly Licinus offered to buy Pliny's *commentarii*. The inference is, therefore, that 'scimus' here refers to Pliny himself.

- 5 20.199 Sic scimus interemptum P. Licini Cæcinæ ... patrem in Hispania Bavili.

All we know about Licinius is that he made his mark in the Senate as a new man under Galba, [Tacitus: *Historiæ* 2.53]. We know nothing about his father apart from this notice of his death. In consequence, we have no means of telling how to interpret 'scimus' in this passage. It is possible, of course, that Pliny picked up the anecdote from hearsay during his own procuratorship in Hispania. We do not know the location of Babilum.

- 6 21.57 Thymo quidem nunc etiam lapideos campos in provincia Narbonensi refertos scimus.

Syme's comments upon Pliny's knowledge of Gallia Narbonensis are entirely persuasive [RP 2.751-2]. Pliny had certainly been in the province at some point, because we have an example of autopsy therefrom ('vidi', 2.150). But there is no clear indication in this instance of autopsy or, indeed, that 'scimus' refers to Pliny alone.

- 7 22.3 Infici vestes scimus admirabili fuco.

The context suggests that this 'scimus' is a generalised 'we, the Romans'.

- 8 25.16 [Re a certain plant I have mentioned ('retulimus') in an earlier Book (=18.160)], 'scimusque defossam in angulis segetis præstare ne qua ales intret.

Since the earlier 'retulimus' certainly refers to Pliny, it is probable that 'scimus', only three words later, refers to him as well. There is, however, no particular suggestion of autopsy.

9 26.123 Nos scimus vixisse aliquos etiam ad hac desperatione [=jaundice].

The context suggests that 'scimus' here refers to Pliny. It follows an opinion about jaundice attributed to Hippocrates, and Pliny offers a contradiction based upon experience—not necessarily his own, of course: Pliny was not a professional doctor—but perhaps upon oral evidence from other people.

10 28.21 [Saying a prayer for a safe journey] id quod plerosque nunc facere scimus.

Pliny reports a story that Julius Cæsar used to say three times a prayer for a safe journey each time he got into his carriage. The above passage follows at once, so the context suggests that here 'scimus' probably means 'you and I', that is, Pliny and his Roman readers.

11 33.143-4 Pompeium Paulinum ... XII pondo argenti habuisse apud exercitum ferocissimis gentibus oppositum scimus; lectos vero iam pridem mulierum totos operiri argento, quædam et triclinia.

The second part of the sentence gives an indication of the meaning of 'scimus' here. It is an Accusative and Infinitive clause dependent on 'scimus', and obviously not a piece of information known to Pliny rather than to a wider general audience. Here, 'scimus' must mean 'you and I know this to be a fact'. In consequence, it seems clear that the first part of the sentence refers to a notorious story which everyone knew or remembered: 'it is a fact well known to you and to me'. Therefore 'scimus' here is unlikely to mean simply, 'I know'. Whether Pliny's involvement in the 'knowing' implies autopsy is a matter open to debate.

12 33.147 Scimus eundem HS VI in singulas libras vasa empta habuisse.

This anecdote refers to Lucius Crassus, 140-91 BC, and so 'scimus' cannot indicate knowledge peculiar to Pliny alone. Again, it must mean 'it is a fact well known to you and me'.

- 13 36.159 [On Siphnos, a stone can be hollowed out on a lathe to form cooking utensils or table-ware] quod et in Comensi Italiæ lapide viridi accidere scimus.

Mention of Como suggests that this 'scimus' may refer to Pliny alone, and that he is speaking from personal experience.

Of these thirteen examples, six appear to refer to Pliny alone, four to 'we', and three are not clear enough to be interpreted with certainty.

APPENDIX 4:
The length of time spent
by equestrian officers
in their various appointments

The following information is taken from *PME*, excluding the section 'Incerti-Ignoti'. These dates give the minimum known time during which the man filled his office. We know they represent his complete time in one post only if we also know when he took it up.

Præfectus Cohortis

Reference	Comment	Years
1 A120	Held all three offices and went on to a procuratorial career. PC in Cappadocia: c. 175-8.	3-4
2 B21	PC in Germania Inferior c. 100. He was tribune when his legion transferred to Pannonia Superior in 103.	3-4
3 C22	PC in Pannonia. Appointed 12 th November, 102. He became tribune on 12 th January, 105.	2+
4 C117	PC in Dacia Inferior, 177-5.	3-4
5 C128	PC in Germania Inferior, c. 172-5.	3-4
6 D31	Held all three offices and went on to a procuratorial career. Became PC in c. 120 for the second time in Germania Inferior, having held that office already for an unknown period in Britannia. Became tribune in c. 122.	2-3
7 E14	Became a soldier at the age of 20 and served for 4 years in the infantry. Transferred to the cavalry where he remained for 10 years. Promoted centurion, a post he held for 21 years. Aged 55, he obtained his first commission which he held until he died, aged 60. Cf., V38.	5-6
8 F75	PC in Germania Inferior, 231-3.	2-3
9 I32	PC in Syria Palæstrina (?). Appointed c. 200 and became tribune c. 202.	2-3
10 I136	Held all three offices and went on to a procuratorial career. Became PC in Syria at the age of 30, c. 157-60.	3-4
11 M4	Held all three offices before going on to a procuratorial career. He died in c. 176, aged 42 years and 5 months. PC in c. 158 at the age of 25. Held office until 160/1.	2-4

12	P57	Held all three offices. PC in Germania Inferior. Appointed c. 70 and became tribune c. 74.	4-5
13	V43	Held all three offices and went on to a procuratorial career. PC in Pannonia Superior, c. 178-83.	5-6
14	V116	PC in Britannia, 202-8.	6-7

If we take the lower of the two figures, we find that the average minimum time spent in this office was 3.2 years. The higher figure gives us 4.2 years

Tribunus Cohortis/Legionis

Reference	Comment	Years
1 A120	Held all three offices and went on to a procuratorial career. TL in Rætia between 178 and 180.	2-3
2 A172	TL in Spain for 16 years, according to his tombstone. He served in Tiberius's reign. This may account for the unusually long service because from 26 onwards, as Suetonius tells us, '[princeps] rei publicæ quidem curam usque adeo abiecit ut postea ... non tribunos militum præfectosque ... mutaverit', <i>Tiberius</i> 41.	16
3 A196	A joint memorial to father and son. The son was TL in Egypt for 9 years.	9
4 A199	Companion to A196. The father was TL in Hispania Citerior for 5 years.	5
5 A217	TL in Pannonia Superior and Dacia, c. 192-7 which may refer to both appointments or to only one. He held various procuratorial posts between 198 (misprinted in <i>PME</i> as 189) and 209. He died at the age of 55. He was thus in his mid-thirties at least when he was appointed tribune (c. 39), if 192 represents his first appointment.	5-6

6	B21	Served as TL in Pannonia Superior, c. 103-5. This may have been somewhat longer, as the date refers to a translation of his legion from Germania Inferior to Pannonia Superior, during which time he certainly was tribune. He became <i>praefectus alæ</i> , but we do not know when. Subsequent procuratorial offices conclude with <i>procurator provinciae Mauretaniae Tingitanæ</i> , c.113-4. The usual time-scale for holding the tribunate (4-5 years) allows him to continue therein until c. 107/8 and then serve as <i>praefectus alæ</i> for the usual 2-3 years before his procuratorial career began in c. 110.	2-3
7	C71	Held all three offices. TC in Pannonia Inferior, 176-80.	4-5
8	C128	TL in Britannia, c. 175-7.	2-3
9	C162	Held all three offices. TL in Pannonia Superior (?), 101-6.	5-6
10	C222	Held all three offices and went on to a procuratorial career. TL in Pannonia Inferior, 162-6.	4-5
11	C260	Tribune in Egypt, 57-8. It is difficult to know whether this represents the whole of his time there or only a part of it.	1-2
12	F60	TC in Britannia, 235-8.	3-4
13	F65	TL in Pannonia Superior, 198-209.	11-12
14	F68	Held all three offices. TC in Pannonia Inferior, c. 106. Went on to become <i>praefectus alæ</i> in the same place, c. 114.	8-9
15	F91	TL in Britannia Inferior, 218-222.	4-5
16	F105	Held all three offices. TL in Dacia, followed by TC in Moesia Inferior. The first appointment came in c. 209. He became <i>praefectus alæ</i> on 23 rd August, 219.	10+-11+
17	H9	The future Emperor, Pertinax: a man of undistinguished background who had to find his feet in the army. Held all three offices. TL in Britannia, 161/2-166. Aged c. 35 on appointment.	4-6
18	I5	TC in Pannonia Inferior, 180-3.	3-4
19	I32	Held all three offices. TL in c. 202 and <i>praefectus alæ</i> in c. 204.	2-3
20	I136	Held all three offices before going on to a procurator's career. TC in Pannonia Superior, c. 160-3. Appointed at the age of c. 33.	3-4

21	M4	Held all three offices before going on to a procuratorial office. TL in Britannia 161-2. His appointment as <i>praefectus alæ</i> in Pannonia Superior is dated 166-7, so there was either a gap between appointments or he served continuously for 6-7 years. I have chosen to err on the conservative side.	1-2
22	M65	TC in Pannonia Inferior, 199-202.	3-4
23	M81	TC in Britannia, 214-16.	2-3
24	N20	Tribune in Numidia, 244-6.	2-3
25	P57	Held all three offices. TL in Germania Inferior c. 74. Appointed <i>praefectus alæ</i> in the same place by 77/8.	3-5
26	P76	TC in Britannia, 270-3.	3-4
27	P107	Held all three offices and went on to a procuratorial career. TL in Germania Inferior c. 100, and appointed <i>praefectus alæ</i> c. 101.	1-2
28	S51-52	TL in Africa, 27-8.	1-2
29	S59	Held all three offices. TL in Germania Superior in 74. Appointed <i>praefectus alæ</i> , 15 th April, 78.	4+-5+
30	S69	Held all three offices and went on to hold various posts as procurator. TL in Syria first, and then in Britannia. He held the latter post in c. 122 and was <i>praefectus alæ</i> in Germania Inferior in c. 125.	3-4
31	S87	TC in Britannia, 251-3.	2-3
32	T7	TL in Germania Superior, 88-9. His next post was that of procurator in 90.	1-2
33	V43	Held all three posts and went on to hold procuratorial office. TC in Pannonia Inferior c. 183-6.	3-4

If we take the lower of the two figures, we find that the average minimum time spent in this office was 3.6 years. The higher figure gives us 4.6 years. In both cases, A172 has been omitted, as his term seems to have been unusually prolonged.

Præfectus Alæ

Reference	Comment	Years
1 A120	Held all three offices. PA in Mauretania Cæsariensis c. 191-3, before going on to become sub-prefect of the Misene fleet.	2-3

2	C162	Held all three offices. PA in Dacia, c. 108-10 before going on to become procurator of Judæa in c. 111.	2-3
3	C234	Held all three offices. PA in Cappadocia, 132-5.	3-4
4	H9	The future Emperor, Pertinax. Became PA in Mœsia Inferior (?) at the age of 41, i.e., in 167 and served until he entered upon an increasingly distinguished career in 168.	1-2
5	I136	Held all three offices before going on to a procuratorial career. PA in Syria, 167-8 at the age of 40.	1-2
6	M4	Held all three offices. PA in Pannonia Superior, 167-9 before going on to be procurator of Dacia in 170-1.	2-3
7	M8	No previous office recorded. Appointed PA in Mauretania Tingitana on 14 th October, 109. His next appointment was <i>subpræfectus vigilum</i> in 113.	3+4+
8	P57	Held all three offices. PA in Germania Inferior where he is recorded for 77/8. His next appointment was <i>flamen</i> in 80.	3-4
9	P107	Held all three offices and went on to a procurator's career. PA in Dacia, 101-2.	1-2
10	V43	Held all three offices before going on to a procurator's office. PA in Dacia, 186-90.	4-5

If we take the lower of the two figures, we find that the average minimum time spent in this office was 2.3 years. The higher figure gives us 3.3 years.

Adding together the average minimum time for all three offices gives us 9.1 years. The higher figure produces 12.1 years. We may note, by way of comparison, that V52 had a career of 13 and 14 years, and D31 of between 16 and 17 years. Compare V3 who had joined up at the age of 21 and had served for 17 years by the time he died as a tribune at the age of 38.

APPENDIX 5:

A suggested work-rate for the composition of the *NH*

A word-count of the *NH* based on the Loeb edition, at an average of 200 words per page gives the following highly speculative but nevertheless suggestive table. A rough word-count based on the Teubner edition gives similar figures.

Book	Words	Time in days at:	
		1500 per diem	2500 per diem
2	20,200	14	8.5
3	11,000	7.5	4.5
4	9,400	6.5	4
5	11,600	8	4.5
6	16,200	11	6.5
7	14,400	9.5	6
8	15,600	10.5	6.5
9	12,400	8.5	5
10	13,400	9	5.5
11	17,800	12	7.5
12	9,000	6	4
13	8,400	6	3.5
14	9,800	6.5	4
15	9,200	6.5	4
16	16,400	11	6.5
17	18,200	12.5	7.5
18	22,600	15.5	9
19	11,800	8	4.5
20	15,200	10.5	6.5
21	13,000	9	5.5
22	11,400	8	4.5
23	11,200	7.5	4.5
24	13,000	9	5.5
25	12,200	8.5	5
26	12,000	8	4.5
27	9,000	6	4
28	17,600	12	7.5
29	9,000	6	4

30	9,400	6.5	4
31	8,200	6	3.5
32	9,400	6.5	4
33	12,000	8	4.5
34	12,800	8.5	5.5
35	14,800	10	6
36	16,000	11	6.5
37	16,600	11.5	7
Total:	459,400	321	194

Now, if we take these work-rates and apply them to the suggested dates for composition, (a) 72-78 and (b) 76-78, bearing in mind that neither 72 nor 76 was liable to have provided Pliny with a full twelve months for writing, we find that he would have needed about 54/55 days per year at an average slower rate and 33/34 days for the faster in case (a), and about 158 days per year and 96 days respectively in case (b).

APPENDIX 6:

The age at which Roman writers began to publish

We are remarkably fortunate in having Pliny the Younger's chronological list of his uncle's works. Nothing else like it exists for any other classical author. It may be asked, then, whether Pliny the Elder was not rather unusual in publishing his first work at the age of about forty, if my suggested dating for his works is to be accepted. In the absence of exactly parallel evidence for anyone else, comparison between him and other Roman writers of roughly the same period is bound to suggest an answer rather than prove anything. But there is an interesting trend which is revealed by such an exercise.

Name	Born	First Known Work	Date of Publication	Age
Livy	59BC	<i>Ab urbe condita</i>	Begun in 29BC	30
Velleius	19BC	<i>Historiæ Romanæ</i>	30AD	49
Paterculus				
Tacitus	56/7AD	<i>Agricola</i>	98AD	42
Frontinus	c. 35AD	<i>Strategemata</i>	Earliest date = 83AD	c. 48
Quintilian	c. 35AD	<i>De causis corruptæ eloquentiæ</i>	Before 88AD	40s?
Aulus	130AD	<i>Noctes Atticæ</i>	Not before 165AD	35+
Gellius				

One might expect poets to be younger. After all, poetry is generally considered to be a young man's game. The following, however suggests differently.

Lucan	39AD	<i>De bello civili</i>	65 (death also)	26
Stattius	c. 45AD	<i>Thebais</i>	c. 91	46
			(worked on for 12 years)	[34]
Italicus	26AD	<i>Punica</i>	88+	62
Martial	38-41 AD	<i>Liber spectaculorum</i>	80	39-42

Now, admittedly this is a very small sample. Many missing names fail to provide necessary data, especially a date of birth. But the sample does suggest—and I claim no more for it—that the forties were not a particularly unusual age for a man to produce either his first literary work, or at least the first literary work of any consequence.

APPENDIX 7:
Pliny's use of 'vidi'/'vidimus'

	Reference	Place	Date
VIDI			
2.101	<i>Vidi</i> nocturnis militum vigiliis inhærere pilis pro vallo fulgorem effigie ea.	—	—
2.150	Ego ipse <i>vidi</i> in Vocontiorum agro paulo ante delatum [lapidem de cælo].	Gallia Narbonensis	—
7.36	Ipse in Africa <i>vidi</i> mutatum in marem nuptiarum die L. Consitium civem Thysdritanum.	Africa	—
9.117	Lolliam Paulinam quæ fuit Gai principis matrona ... <i>vidi</i> .	[Rome?]	c. 38 ¹
12.98	[A type of casia]. Extreмоque in margine imperii, qua Rhenus adluit, <i>vidi</i> in alvariis apium satam.	Germania Inferior (near the Batavi)	—
13.83	Tiberi Gaique Gracchorum manus apud Pomponium Secundum vatem civemque clarissimum <i>vidi</i> annos fere post ducentos.	[Rome?]	late 60s/ early 70s
14.11	<i>Vidique</i> iam porticus, totas villas et domos ambiri singularum palmitibus ac sequacibus loris.	[Campania?] ²	—
18.128	[Turnips]. <i>Vidi</i> XL libras excedentia.	—	—
18.319	Sed iam et kal. Ian. defectu vasorum vindemiantes <i>vidi</i> .	—	—
27.99	[Plant lithospermon]. Ego volsam non hærentem <i>vidi</i> . ³	—	—

¹ Lollia Paulina, according to Pliny's anecdote, was wearing a fortune in jewellery which was either a gift from her husband or an inheritance from her family ('nec dona prodigi principis fuerat, sed avitæ opes'), so we must not assume she had yet married Caligula. That took place in 38. By 39 he had divorced her. Pliny later describes her as a *muliercula*, by which he may indicate 'mistress' (9.118). At any rate, the context suggests a date not far from 38, when Pliny would have been about fifteen.

² 'In Campano agro', he says 914.10), the vines soar to prodigious heights and 'nulla fine crescendi'. He then goes on at once with this reference. It seems clear that he is probably talking about the same area.

³ *Aspexi* occurs earlier in the same passage: 'nec quicquam inter herbas maiore equidem miraculo aspexi'.

29.53	[Snake's egg]. <i>Vidi</i> equidem id ovum mali orbiculati modici magnitudine etc.	—	—
31.60	<i>Vidique</i> iam turgidos bibendo in tantum ut anuli integerentur cute.	—	—
32.154	Hyænam piscem <i>vidi</i> in Ænaria insula captum.	[Naples ?] ¹	—
37.19	[Myrrhine ware]. <i>Vidi</i> tunc adnumerari unius scyphi fracti membra.	Rome	54-68, (refers to Nero's reign)

VIDIMUS

5.14	Suetonius Paulinus quem consulem <i>vidimus</i> etc.	—	66
7.35	Hippocentaurum ... nos principatu [Claudi] allatum illi ex Ægypto in melle <i>vidimus</i> .	[Rome ?]	41-54, (refers to Claudius's reign)
7.75	Manium Maximum et M. Tullium equites Romanos binum cubitorum fuisse auctor est M. Varro, et ipsi <i>vidimus</i> in loculis adservatos.	—	—
7.76	Ipsi non pridem <i>vidimus</i> eadem ferme omnia præter pubertatem in filio Corneli Taciti.	—	—
7.83	Nos quoque <i>vidimus</i> Athanatum nomine prodigosæ ostentationis etc.	—	—
8.182	<i>Vidimus</i> ex imperio [tauros] dimicantes et iocose demonstratos rotari etc.	—	—
8.197	<i>Vidimus</i> iam et viventium vellera purpura ... infecta.	—	—

¹ 'Ænaria' is now Ischia in the Bay of Naples. The ὄαινα (Charax puntazzo) is a sea-fish. See D'Arcy Thompson: *A Glossary of Greek Fishes* s.v.v. ὄαινα and χάραξ. The island is nearly opposite Cape Misenum. Did Pliny see the fish during one of his tours of duty in the area as commander of the Misene fleet? The context does not allow us to say with certainty whether he saw it on the island itself or after it had been landed somewhere nearby on the mainland.

8.226	[Moles]. Quarum e pellibus cubicularia <i>vidimus</i> stragula.	—	—
9.15	[Navigia] quorum unum mergi <i>vidimus</i> reflatu beluæ oppletum unda.	Ostia	c. 50?
9.116	[Pearls]. <i>Vidimusque</i> iam in extremis etiam marginibus velut e concha exeuntes.	—	—
12.94	Radicem [cinnami] magni ponderis <i>vidimus</i> in Palatii Templo ... aureæ pateræ impositam.	Rome	—
13.22	<i>Vidimus</i> etiam vestigia pedum tingui.	—	—
15.47	Sex. Papinius quem consulem <i>vidimus</i> .	—	36
17.41	In Byzacio Africæ illum ... fertilem campum ... post imbres vili asello et a parte altera iugi anu vomerem trahente <i>vidimus</i> scindi.	Byzacium in Africa	—
17.99	<i>Vidimus</i> cerasum in salice etc.	—	—
17.120	Tot modis insitam arborem <i>vidimus</i> iuxta Tiburtes tullios.	Tibur, 20 Roman miles NE of Rome	—
19.11	<i>Vidimusque</i> iam tantæ tenuitatis [plagas] ut anulum hominis cum epidromis transirent.	—	—
19.19	[Asbestos]. Ardentesque in focis conviviorum ex eo <i>vidimus</i> mappas sordibus exustis splendescentes igni magis quam possent aquis.	—	—
25.123	Sunt et ranis venena, rubetis maxime, <i>vidimusque</i> Psyllos in certamen e patinis candefactis admittentes.	Africa	—
33.63	Nos <i>vidimus</i> Agrippinam Claudii principis edente eo navilis prælii spectaculum, adsidentem etc.	Fucine Lake	52
33.152	<i>Vidimus</i> et ipsi Arellium Fuscum ... argenteos anulos habentem.	—	—

35.201	[Former slaves]. quos et nos adeo potiri rerum <i>vidimus</i> ut prætoriam quoque ornamenta decerni a senatu iubente Agrippina Claudii Cæsaris <i>videremus</i> .	[Rome ?]	52 ¹
36.60	[Onyx marble columns). Nos ampliores XXX <i>vidimus</i> in cenatione quam Callistus Cæsaris Claudii libertorum potentia notus, sibi exædificaverat.	[Rome ?]	post 43
36.111	Bis <i>vidimus</i> urbem totam cingi domibus principum Gai et Neronis, huius quidem, ne quid deesset, aurea.	Rome	post 64
36.196	<i>Vidimus</i> et solidas imagines divi Augusti capaci materia huius crassitudinis.	Rome	—
37.81	avusque Servili Noniani quem consulem <i>vidimus</i> .	—	35
37.118	Magnitudine XVI unciarum <i>vidimus</i> formatam inde effigiem Neronis thoracatam.	—	post 54 ?

To these, not every one of which is uncontestedly an example of autopsy by Pliny himself, should be added the following which employ different formulæ.

14.9	Iovis simulacrum in orbe Populonio ex una <i>conspicimus</i> tot ævis incorruptum, item Massiliæ pateram.	(i) Populonium in Etruria, about 170 miles NW of Rome; (ii) Massilia in Gallia Narbonensis	—
16.2	Sunt vero et in septentrione <i>visæ nobis</i> Chaucorum qui maiores minoresque appellantur.	Coast of the Ijsselmeer (?)	—

¹ This is probably a reference to the Senate's voting *ornamenta prætoriam* to Pallas, freedman of Antonia, secretary of Claudius, and supporter of Agrippina. The award took place in 52. (See Tacitus: *Annales* 12.53. Pliny: *Ep.* 7.29.2; 8.6). One presumes that the scene of this event was Rome.

25.9	<i>Nobis</i> certe ... <i>contigit</i> reliquas <i>contemplari</i> scientia Antoni Castoris ... <i>Visendo</i> hortulo eius in quo plurimas alebat centesimum annum ætatis excedens.	[Rome ?]	—
25.18	In eadem provincia [Lacetania] <i>cognovi</i> in agro hospitis nuper ibi repertum dracunculum appellatum.	Lacetania	—
25.98	Piscatores Campaniæ radicem eam quæ rotunda est venenum terræ vocant, <i>coramque nobis</i> contusam mixta calce in mare sparsere.	Campanian sea-coast	—
25.116	<i>Mihi</i> et tertia cyclaminos <i>demonstrata est</i> cognomine chamæcissos etc.	—	—
27.99	[Plant lithospermon]. Nascitur et in Italia, sed laudatissimum in Creta, nec quicquam inter herbas maiore equidem miraculo <i>aspexi</i> .	—	—
30.18	Adulescentibus <i>nobis visus</i> Apion grammaticæ artis prodiderit etc.	—	—
35.17	Exstant certe hodieque antiquiores urbe picturæ Ardeæ in ædibus sacris, quibus equidem nullas æque <i>miror</i> . ¹	Ardea, 24 miles south of Rome	—
35.83	[Picture by Apelles]. Consumptam eam priore incendio Cæsaris domus in Palatio audio, <i>spectatam nobis</i> ante, etc.	Rome	64 ? ²
37.27	Magnitudo amplissima adhuc <i>visa nobis</i> erat quam in Capitolio Livia Augusti dicaverat.	Rome	—

1 The context tells us that *miror* represents autopsy.

2 The Loeb edition dates this fire to 4AD but, as the Budé edition's note *ad locum* points out, the passage—and especially the word *priore*—makes much better sense if one thinks of the two fires of 64 and 69. The former would then indeed be *priore*. Moreover, if *nobis* refers to Pliny—and the manuscripts all agree on the reading *nobis*, despite the doubts of some editors—4AD becomes impossible. The context makes it fairly clear that *nobis* does mean Pliny, so 64 is likely to be the date of the reference.

37.27 *Nos liquido adfirmare possumus in
cautibus Alpium nasci adeo inviis
plerumque ut fune pendentem eam
extrahant.*¹ Alps —

Place	Date	Reference
Rome and Latium		
Ostia	c. 50	9.15
Rome	—	12.94
Tibur	—	17.120
Ardea	—	35.17
Rome	—	35.83
Rome	post 64	36.111
Rome	—	36.196
Rome	54-68	37.19
Rome	—	—
Rome	—	33.10
Rome	—	34.22
Italy		
Populoneum	—	14.9
Campania	—	25.98
Fucine Lake	52	33.63
Alps	—	37.27
Gallia Narbonensis		
Vocontii	—	2.150
Massilia	—	14.9
Lacetania	—	25.18
Germania Inferior		
Near Batavi	—	12.98
Netherlands	—	16.2
Africa		
Unidentifiable	—	7.36
Byzacium	—	17.41
Unidentifiable	—	25.123

¹ The context suggests that *adfirmare* may well refer to autopsy.

To these may now be added references which, for one reason or another, have a question-mark attached.

Rome

Unspecified	41-54	7.35
"	c. 38	9.117
"	late 60s/early 70s	13.83
"	—	25.9
"	52	35.201
"	post 43	36.60
"	—	11.4
"	—	34.46

Campania

Unidentifiable	—	14.11
sea-coast	—	25.98
Naples (?)	—	32.154

Italy

—	27.99
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Seven other examples of 'videmus' can clearly be seen as appeals by Pliny to shared knowledge with his Roman audience.

18.8 = Circus	19.5 = Forum	33.24 = Capitol
34.39 = (a) Capitol	(b) Campus Martius	(c) Tarentum
34.43 = Temple of Augustus	34.141 = Temple of Mars Ultor	36.85 = Campus Martius

APPENDIX 8:
Measurement of Time

Modern experience of time tends to be governed by reliance upon clocks whose mechanisms divide each day into hours consisting of sixty minutes, each of which is divided in turn into sixty seconds, all of equal length regardless of the season of the year. Sundials illustrate this by marking hours of equal length throughout seasons also reckoned to be of equal length. Greek and Roman sundials, on the other hand, record 'seasonal hours' by dividing the available daylight hours into twelve, thus producing six morning and six post-morning hours of variable length. Moreover, measurement of time was more important to the city than it was to the countryside. Sundials were very common in the former—some thirty have been excavated from Pompeii alone; for example, they were found in private homes as well as in public places.¹ Each dial, however, was intended to work at a particular latitude, and if one removed it from its provenance, there was an increasing likelihood, depending on how far it was removed, that sooner or later it would simply not record meaningful time at all, as Pliny himself remarked.²

Water-clocks were either large, intricate pieces of machinery³ or relatively simple devices usually used in a court of law to time a lawyer's speech.⁴ According to Seneca, they did not always agree with one another, although the context in which he says this is that of an elaborate joke.⁵

Together, however, the *gnomon* and the *clepsydra* suggest that city-dwellers at least must have been conscious of the passage of time in a way similar to ours, even if their means of measuring it was not as minutely accurate. Carcopino probably sums up the position fairly when he observes:

¹ Gibbs: *Greek and Roman Sundials*, 5.

² NH 2.182; 6.212; 36.72-3. Carcopino's tables of winter and summer hours, (*Daily Life in Ancient Rome*, 149-50), must refer to Rome itself. They would not be valid for the whole of Italy, let alone elsewhere in the Empire.

³ Vitruvius: 9.8.2-14. Cf., Pliny: NH 7.215.

⁴ Cicero: *De Oratore* 3.138; *Tusculanæ* 2.67. Martial 6.35; 8.7. Pliny: *Ep.* 1.23.2; 6.2.6. Cf., Petronius: *Satyricon* 26 for an example of domestic usage.

⁵ Seneca: 'Horam non possum certum tibi dicere, facilius inter philosophos quam inter horologia conveniet', *Apoc.* 2.2

"it is clear that the hourly division of the day had become part and parcel of their [the Romans'] everyday routine. On the other hand, it would be an error to suppose that the Romans lived with their eyes glued to the needles of their sundials or the floats of their water-clocks as ours are to the hands of our watches."¹

¹ *Daily Life in Ancient Rome*, 148. See further Rehm, *PW* 8.2416-33 sv. 'Horologium' and Thalheim, *PW* 11.807-6 sv. 'Klepsydra'. I am grateful to Dr. A. S. Gratwick for his advice on this subject.

APPENDIX 9:

A note on the *Histories* of Livy and Dio Cassius

A comparison between Pliny and other voluminous authors is interesting. Livy, for example, seems to have written a hundred and twenty Books of his *History* between 29BC and 14AD, a rate of three Books per year on average, assuming a steady and regular rate of composition.¹ Now if, for the sake of illustration only, one credits him with the daily work-rate of Cicero, his time-table works out as follows: Book 2 = 19,000 words, (a very rough computation); 1,500 words per day = 13 days for composition; 2,500 words per day = 8 days for composition. At three Books per year, this means 5.5 weeks for the slower rate and 3.5 weeks for the faster. Even if we assume that Livy worked at a very much slower rate, intermittently, and did much of his research as he went along, this is still not a heavy work-load.

Dio Cassius's time-table is also revealing. He wrote his *History* between c. 207 and 219. For most of that period he was in Rome, the only major interruptions being a few months in 213 when he was in Gaul and Germany with Caracalla, and the winter of 214-5 when he joined the Imperial Court at Nicodemia and spent a little time on his own estate at Nicæa.² With thirteen years to compose eighty Books, Dio's average works out at between six and seven Books per year.³ Applying the Ciceronian figures to Dio Cassius produces the following: Book 37 = 22,000 words (by rough computation); 1,500 words per day = 15 days for composition; 2,500 words per day = 6 days for composition. At seven Books per year, this means 15 weeks for the slower rate and 6 weeks for the faster. Dio had already done all his research, although he reviewed and revised everything when he came to write. So this work-rate, too, cannot be regarded as particularly heavy.

Comparison between these two work-rates and the alternative composition time-tables for Pliny suggests that 72-78, being the slower, is perhaps more in tune with them. On the other hand, if we are to accept Pliny the Younger's portrait of his uncle as a man always pressed by a

1 See Ogilvie in *Cambridge History of Classical Literature* 2.458.

2 Millar: *Cassius Dio*, 17-23.

3 It looks as though Book 52 had been completed by 214, so this provides a slight check on the work rate.

sense of working urgency, perhaps the quicker period, 76-78, might seem more appropriate.

APPENDIX 10:
Sources which Pliny claims to quote verbatim

N°	NH	Quotation	Original
1	2.94	[Augustus] his verbis id gaudium prodit.	Lost ¹
2	3.129	Tuditanus qui domuit Histros in statua sua ibi inscripsit.	Lost
3	3.136-7	Non alienum videtur hoc loco subicere inscriptionem e tropæo Alpium, quæ talis est.	Lost
4	7.83	Idem M. Varro ... inquit.	Lost
5	7.97	[Pompey] hos ergo honores urbi tribuit in delubro Minervæ quod ex manubiis dicabat.	Lost
6	7.98	[On Pompey]. Triumphi vero quem duxit a. d. III Kal. Oct. M. Pisone M. Messala cos. Præfatio hæc fuit.	Lost
7	7.210	Indicio erit Delphica antiqui æris ... Minervæ dicata [in bibliotheca] cum inscriptione tali.	Lost
8	9.93	Ut ipsius Trebi verbis utar.	Lost
9	9.137	Nepos Cornelius ... inquit.	Lost
10	11.275-6	Trogus et ipse auctor e severissimis ... verbis eius subiciam.	Lost
11	13.86	In re tanta ipsius Herminæ verba ponam.	Lost
12	14.46	[Cato] de vitibus uvisque ita prodidit.	Ag 6.4; 7.2 ²
13	14.58	Androcydes sapientia clarus ad Alexandrum Magnum scripsit.	Lost
14	14.88	Numæ regis Postumia lex est.	Lost
15	14.92	Fabius Dossennus his versibus decernit.	Lost
16	14.93	[Plautus] In <i>Pseudolo</i> sit.	
		Pliny	Plautus
		Quod si opus est ut dulce promat indidem, ecquid habet?—Rogas?	Quid, si opus sit ut dulce promat indidem, ecquid habet?—Rogas?
		Murrinam, passum, defrutum, mella	Murrinam, passum, defrutum, mellam <i>Pseudolus</i> 740-1.
17	14.95	[Anonymous] Sicut apparet ex illo comico versu.	Lost

¹ 'Lost indicates that we no longer possess the complete text from which the quotation comes. In the case of laws and inscriptions, it means that we cannot be sure we have the full, uncorrupted text.

² These passages have been discussed *supra*, pp. 274-5.

- 18 14.95 [Edict] Hæc enim verba sunt. Lost
- 19 14.96 M. Varro his verbis tradit. Lost
- 20 15.72 Cato de ficis ita memorat.

Pliny

Ficos mariscas in loco cretoso aut aperto serito, in loco autem crassiore aut stercoreto Africanas et Herculanæas, Saguntinas, hibernas, Telanas atras pediculo longo.

Cato

Ficos mariscas in loco cretoso et aperto serito; Africanas et Herculanæas, Sacontinas, hibernas Tellanas atras pediculo longo, eas in loco crassiore aut stercoreto serito.

Ag 8.1

There seems to be no good reason for Pliny's altering Cato's word-order. It is possible, of course, that he wanted this minor change for stylistic reasons.

- 21 16.193 Cato ... hæc adicit

Pliny

Prelum ex sappino atra potissimum facito. Ulmeam, pineam, nuceam, hanc atque aliam materiem omnem cum ecfodies, luna decrescente eximito post meridiem sine vento austro. Tum erit tempestitiva cum semen suum maturum erit. Cavetoque per rorem trahas aut doles.

Cato

Prelum ex carpino atra potissimum facito. Ulmeam, pineam, nuceam, hanc atque aliam materiem omnem cum effodies, luna decrescente eximito post meridiem sine vento austro. Tum erit tempestitiva, cum semen suum maturum erit, cavetoque per rorem trahas aut doles.

Ag 31.2

- 22 16.194 [Cato] Idemque mox.

Pliny

Nisi intermestri lunaque dimidiata ne tangas materiem; quam effodias aut præcidas abs terra, diebus VII proximis quibus luna plena fuerit, optime eximitur. Omnino caveto ni quam materiem doles neve cædas neve tangas nisi siccam, neve gelidam neve rorulentam.

Cato

Nisi intermestri lunaque dimidiata tum ne tangas materiem. Quam effodias aut præcidas abs terra, diebus VII proximis, quibus luna plena fuerit, optime eximetur. Omnino caveto nequam materiem doles neu cædas neu tangas, si potes, nisi siccam neu gelidam neu rorulentam.

Ag 37.34

- 23 17.34 Cato breviter atque ex suo more vitia determinat

Pliny

Terram cariosam cave neve plaustro neve pecore inpellas.

Cato

Terram cariosam cave ne ares, neve plostrum neve pecus inpellas.

Ag 5.6

- 24 17.38 Cicero ... inquit

Pliny

Meliora unguenta sunt quæ terram, quam quæ crocum sapiunt.

Cicero

Et magis laudari quod terram quam quod crocum olere videatur.

De Oratore 3.99

It is clear that Pliny has relied here on his memory or on a summarising note or on a text we no longer have. 'Olere' appears in the codices of *De Oratore*; some editors have preferred 'sapere' because of Pliny's text.¹

25 17.55 Cato

Pliny

Stercus unde facias, stramenta, lupinum, paleas, fabalia ac frondis iligneam, querneam. Ex segete evellito ebulum, cicutam, et circum salicta herbam altam ulvamque; eam substernito ovibus, bubus que frondem putidam.

Cato

Stercus unde facias stramenta, lupinum, paleas, fabalia, acus, frondem iligneam, querneam. Ex segeti vellito ebulum, cicutam et circum salicta herbam altam ulvamque; eam substernito ovibus bubusque, frondem putidam.

Ag 37.2

[Pliny continues without a break, but in fact there is a whole sentence following in Cato, which he omits.]

Vinea si macra erit, sarmenta sua comburito et indidem inarato.

Vitis si macra erit, sarmenta sua concidito minute et ibidem inarato aut infodito.

Ag 37.3

[Pliny now acknowledges a break in his 'quotation' by saying, 'idemque'.]

Ubi saturus eris frumentum, oves ibi delectato.

Ubi sementim facturus eris, ibi oves delectato.

Ag 30

The differences in wording are not significant, but the first sections of Pliny illustrate the point that sometimes what appears to be a large single unbroken quotation may be nothing of the kind.

26 17.56 [Cato] dicit

Pliny

Segetem stercorent fruges, lupinum, faba, vicia.

Cato

Quæ segetem stercorent fruges: lupinum, faba, vicia.

Ag 37.2

[Pliny continues: 'sicut e contrario'.]

Cicer, quia vellitur et quia salsum est, hordeum, fenum Græcum, ervum, hæc omnia segetem *exurunt* et omnia quæ velluntur. Nucleos in segetem ne indideris.

Cicer, quod vellitur et quod salsum est, eo malum est. Hordeum, fænum Græcum, ervum, hæc omnia segetem *exsugunt* et omnia quæ velluntur. Nucleos in segetem ne indideris.

Ag 37.1

¹ See the Teubner apparatus for details. Pliny refers earlier to this same passage in 13.21: 'In M. Ciceronis monumentis invenitur unguenta gratiora quæ terram quam quæ crocum sapiant'.

The difference between Pliny's 'exurunt' and Cato's 'exsugunt' is interesting. Pliny's next sentence runs, 'Vergilius et lino segetem exuri et avena et papavere arbitratur', but what Vergil actually wrote was

urit enim lini campum seges, urit avenæ

Georgics 1.77

which lays a heavy emphasis on 'burning'. So it may be that Pliny, having skimmed through his sources for this section, had Vergil's line stuck in his mind and so repeated the verb in his version of Cato's passage.

27 17.125-7 Quæ custodienda in olearum cura Cato iudicaverit, ipsius verbis optime præcipiemus.

Pliny

Taleas oleagineas quas in scrobe saturus eris tripedaneas ⁽ⁱ⁾ facito, diligenterque tractato ne liber laboret cum dolabis aut secabis. Quas in seminario saturus eris pedales facito. Eas sic inserito: locus bipalio subactus sit ⁽ⁱⁱ⁾ beneque glutus; cum taleam demittes, pede taleam opprimito; si parum descendet, malleo aut mateola adigito, cavetoque ne librum scindas cum adiges. Palo prius locum ne feceris quo taleam demittas, ⁽ⁱⁱⁱ⁾ ita melius vivet. Taleæ ubi trimæ sunt, tum denique maturæ sunt, ubi liber se vertet. Si in scrobibus aut in sulcis seres, ternas taleas ponito easque divaricato. Supra terram ne plus quattuor digitos transversos emineant, vel oculos serito.

Cato

Taleas oleagineas, quas in scrobe saturus eris tripedaneas ⁽ⁱ⁾ decidito diligenterque tractato, ne liber laboret, cum dolabis aut secabis. Quas in seminario saturus eris, pedalis facito, eas sic inserito. Locus bipalio subactus siet ⁽ⁱⁱ⁾ beneque terra tenera siet beneque glittus siet. Cum taleam demittes, pede taleam opprimito. Si parum descendet, malleo aut mateola adigito cavetoque ne librum scindas, cum adiges. Palo prius locum ne feceris, quo taleam demittas. ⁽ⁱⁱⁱ⁾ Si ita severis uti stet talea, melius vivet. Taleæ ubi trimæ sunt, tum denique maturæ sunt, ubi liber sese vertet. Si in scrobibus aut in sulcis seres, ternas taleas ponito easque divaricato, supra terram ne plus IIII digitos transversos emineant; vel oculos serito.

Ag 45

Pliny has either made one or two adjustments as he has recorded his reading or composed the *NH*, or has used a version of Cato's *De Agricultura* which is slightly different from ours. The differences between the texts are not particularly significant.

(i) 'facito' for Cato's 'decidito'.

(ii) Pliny omits 'beneque terra tenera siet'. This may be due to nothing more than his eye slipping to the second 'beneque'.

(iii) Pliny omits 'Si ita severis uti stet talea'.

Pliny's text now continues without a break, but actually he is using a completely different passage from Cato.

(i) Diligenter eximere oleam oportet et radices quam plurimas cum terra ferre; ubi radices bene operueris, calcare bene, ne (ii) quid noceat. Si quis quæret quod tempus oleæ serendæ sit, agro sicco per sementem, agro læto per ver.

(i) Cetera cultura est multum sarire et diligenter eximere semina et per tempus radices quam plurimas cum terra ferre; ubi radices bene operueris, calcare bene, ne (ii) aqua noceat. Si quis quæret quod tempus oleæ serendæ siet: agro sicco per sementim, agro læto per ver.

Ag 61.2

(i) It is clear that Pliny has adapted the first part of his sentence so as to sew the argument neatly to what has gone before. He is principally interested at this point in olive trees and their growth; Cato is writing in more general fashion about ploughing. Excising 'cetera ... et' and changing 'semina' into 'oleam' does Pliny's job well enough.

(ii) Pliny's 'quid' for Cato's 'aqua' may be a deliberate generalisation.

Pliny's text continues without a break.

Olivetum diebus XV ante æquinoctium
vernum incipito putare, ex eo die dies XL
recte putabis. Id hoc modo putato: qua
locus recte ferax erit, quæ arida erunt et si
quid ventus interfregerit, inde ea omnia
eximito; qua locus ferax non erit, id plus
concidito aratoque bene enodatoque
stirpesque levis facito.

Olivetum diebus XV ante æquinoctium
vernum incipito putare. Ex eo die dies XLV
recte putabis. Id hoc modo putato. Qua locus
recte ferax erit, quæ arida erunt, et siquid
ventus interfregerit, ea omnia eximito. Qua
locus ferax non erit, id plus concidito
aratoque. Bene enodato stirpesque levis
facito.

Ag 44

The codices of Pliny agree on XL. Those of Cato on XLV. Either Pliny has decided to reduce the number of days. or there has been a simple mis-reading or mis-recording of Cato's text.

Again, there is no break in Pliny's text before the following.

Circum oleas autumnitate ablaqueato et
stercus addito.

Circum oleas autumnitate ablaqueato et
stercus addito.

Ag 5.8

Finally, Pliny's 'quotation' continues without a break.

Qui oletum sæpissime et altissime
miscabit, is tenuissimas radices exarabit.
(Si male arabit) radices susum abibunt,
crassiores fient et eo in radices vires oleæ
abibunt.

Qui oletum sæpissime et altissime miscabit,
is tenuissimas radices exarabit. Si male
arabit, radices susum abibunt, crassiores
fient, et in radices vires oleæ abibunt.

Ag 61.1

'Si male arabit' in Pliny's text has been supplied from Cato by an editor.

This passage illustrates two points clearly: (a) a single 'quotation' by Pliny may well consist of several disparate passages from an author; (b) in order to be able to weld several passages into one, Pliny must have had a system which let him see quickly, presumably from his *Commentarii*, the passages relevant to his purpose. This has been discussed, *supra* pp. 297sq.

28 17.195-8 Cato de omni cultura vitium ita præcipit

Pliny

Quam altissimam vineam facito alligatoque recte, dum ne nimium constringas. Hoc modo eam curato: capita vitium per sementim ablaqueato; vineam putatam circumfodito, arare incipito; ultro citroque sulcos perpetuos ducito; vites teneras quam primum propagato, sic occato. Veteres quam minimum castrato; potius, si opus erit, deicito biennioque post præcidito. Vitem novellam reseca tum erit tempus ubi valebit. Si vinea ab vite calvata erit, sulcos interponito ibique vivam radicem serito; umbram a sulcis removeto, crebroque fodito. In vinea vetere serito ocinum si macra erit—quod granum capit ni serito—et circum capita addito sterco, paleas, vinaceas, aliquid ⁽ⁱ⁾ horumce. Ubi vinea frondere cœperit, pampinato. Vineas novellas alligato crebro, ne caulis præfringatur; et quæ iam in perticam ibit eius pampinos teneros alligato leviter porrigitoque uti recte ⁽ⁱⁱ⁾ stent. Ubi uva varia fieri cœperit, vites subligato. ⁽ⁱⁱⁱ⁾

Cato

Quam altissimam viniam facito alligatoque recte, dum ne nimium constringas. Hoc modo eam curato: capita vitium per sementim ablaqueato. Vineam putatam circumfodito, arare incipito, ultro citroque sulcos perpetuos ducito. Vites teneras quam primum propagato, sic occato; veteres quam minimum castrato, potius, si opus erit, deicito biennioque post præcidito. Vitem novellam resicari tum erit tempus, ubi valebit. Si vinea a vite calva erit, sulcos interponito ibique vivaradicem serito; umbram ab sulcis removeto, crebroque fodito. In vinea vetere serito ocinum, si macra erit—quod granum capiat ne serito—et circum capita addito sterco, paleas, vinaceas, aliquid ⁽ⁱ⁾ horum, quo rectius valeat. Ubi vinea frondere cœperit, pampinato. Vineas novellas alligato crebro, ne caules præfringantur, et quæ iam in perticam ibit, eius pampinos teneros alligato leviter corrigitoque uti recte ⁽ⁱⁱ⁾ spectent. Ubi uva varia fieri cœperit, vites subligato, ⁽ⁱⁱⁱ⁾ pampinato uvasque expellito, circum capita sarito.

Ag 33.14

(i) Pliny omits 'quo rectius valeat', not a significant omission.

(ii) Pliny writes 'stent' for 'spectent'. The sense is the same, so could this be a careless reading whereby the eye did not take the 'pec'?

(iii) Pliny has stopped in the middle of Cato's sentence. The reason for this is not clear, as Cato's additional advice is pertinent to Pliny's point.

There is no break in Pliny's text here.

Vitis insitio una est per ver, altera cum uva floret; ea optima est.

Vitis insitio una est per ver, altera est cum uva floret; ea optima est.

Ag 41.1

Again, there is no break in Pliny's text.

Vineam veterem si in alium locum transferre voles, dumtaxat bracchium crassam licebit. Primum deputato; binas gemmas ne amplius relinquito. Ex radicibus bene exfodito, ⁽ⁱ⁾ et cave ne radices saucies. Ita uti fuerit ponito in scrobe aut in sulco operitoque et bene occulcato; eodemque modo vineam statuito, alligato flexatoque uti fuerit; crebroque fodito.

Vineam veterem si in alium locum transferre voles, dumtaxat bracchium crassam licebit. Primum deputato; binas gemmas ne amplius relinquito. Ex radicibus bene exfodito, ⁽ⁱ⁾ usque radices persequito et caveto ne radices saucies. Ita uti fuerit, ponito in scrobe aut in sulco operitoque et bene occulcato, eodemque modo vineam statuito, alligato flexatoque, uti fuerit, crebroque fodito.

Ag 49

Apart from the omission of 'usque radices persequito', Pliny has given Cato's text accurately.

30 18.26 Principium autem a Catone sumemus

Pliny
Fortissimi viri et milites strenuissimi ex
agricolis gignuntur minimeque male
cogitantes.

Cato
At ex agricolis et viri fortissimi et milites
strenuissimi gignuntur, maximeque pius
quæstus stabilissimusque consequitur
minimeque invidiosus, minimeque male
cogitantes sunt qui in eo studio occupati sunt.

Ag præf. 4

Pliny has abridged Cato's text considerably, but has just announced that he is going to give a list of precepts ('oraculis'), so abridgement can be expected. This happens again in the following snippets.

Prædium ne cupide emas ... [Then he adds:
'in re rusta'] operæ ne parcas in agro
emendo minime.

Prædium quom parare cogitabis, sic in animo
habeto, uti ne cupide emas neve opera tua
parcas visere et ne satis habeas semel
circumire.

Ag 1.1

The Budé notes *ad loca* refer to Columella's recording of a precept by Cæsonius, 'quo fertur usus etiam Cato Marcus'. It does not appear in our texts of his *De Agricultura*. It runs, 'agrum esse revisendum sæpius eum quem velis mercari', (Columella: RR 1.4.1), which is a long way from both Cato and Pliny, although Cato's 'neve opera ... circumire' could be seen as a version of it, and Pliny's 'opere ... minime' as an abridged version of Cato.

31 18.27 Cato ... inquit

Pliny
In bona enim, inquit, regione bene nitent.

Cato
In bona regione bene nitere oportebit.

Ag 1.2

32 18.34 Etiamnum tamen traditas notas subsignabimus Catonis¹ Lost
maxime verbis:

33 18.65 Sophocles pœta in fabula Triptolemo frumentum Italicum
ante cuncta laudaverit ad verbum tralata sententia:

Pliny
et fortunatam Italiam frumento serere
candido

Sophocles
The Greek text for this line has been lost.²
[Triptolemus fr. 600]

34 18.163-4 Igitur Catonis hæc sententia est.

¹ Pintianus suggested that *Columellæ* should replace *Catonis* here, and Klotz offered *Magonis*. Manuscripts *ll* and *v* have *Catonis*. See further Münzer: *Beiträge zur Quellenkritik*, 61-2.

² Münzer thought Pliny had got this quotation from Nepos: *op cit.*, *supra*, 341.

Pliny

In agro crasso et læto frumentum seri, si vero nebulosus sit idem, rapa, raphanos, milium, panicum.

Pliny continues without a break.

In frigido aquoso prius serendum, postea in calido; in solo autem rubricoso vel pullo vel harenoso, si non sit aquosum, lupinum; in creta et rubrica et aquosiore agro adoreum; in sicco et non herboso nec umbroso triticum.

Cato

Ubi ager crassus et lætus est sine arboribus, eum agrum frumentarium esse oportet. Idem ager si nebulosus est, rapa, raphanos, milium, panicum, id maxime seri oportet.

Ag 6.1

Ubi quisque locus frigidissimus aquosissimusque erit, ibi primum serito. In caldissimis locis sementim postremum fieri oportet. Terram cave cariosam tractes. Ager rubricosus et terra pulla, materina, rudecta, harenosa, item quæ aquosa non erit, ibi lupinum bonum fiet. In creta et uligine et rubrica et ager qui aquosus erit, semen adoreum potissimum serito. Quæ loca sicca et non herbosa erunt, aperta ad umbra, ibi triticum serito.

Ag 34

Both texts continue without a break.

In solo valido fabam, viciam vero quam minime aquoso herbidoque; siliginem et triticum in loco aperto, edito, qui sole quam diutissime torreatur, lentem in rudecto et rubricoso qui non sit herboidus, hordeum in novali et in arvo quod restibile possit fieri, trimestre ubi sementem maturam facere non possis et cuius crassitudo sit restibilis.

Fabam in locis validis non calamitosis serito. Viciam et fænum Græcum quam minime herbosis locis serito. Siliginem, triticum in loco aperto celso, ubi sol quam diutissime siet, seri oportet. Lentem in rudecto et rubricoso loco, qui herbosus non siet, serito. Hordeum, qui locus novus erit aut qui restibilis fieri poterit, serito. Trimestre, quo in loco sementim maturam facere non potueris et qui locus restibilis crassitudine fieri poterit, seri oportet.

Ag 35.1-2

Once again Pliny has welded into a single 'quotation' quite different passages from Cato and has also produced an abridgement of them rather than a straight transcription.

35 18.165 Subtilis est illa sententia

Pliny

Serenda ea in tenuiore terra quæ non multo indigent suco, ut cytisis et, cicere excepto, legumina quæ velluntur e terra, non subsecantur—unde et legumina appellata, quia ita leguntur—in pingui autem quæ cibi sunt maioris, ut olus, triticum, siligo, linum.

Varro

Rectius enim in tenuiore terra ea quæ non multo indigent suco, ut cytissum et legumina præter cicer; hoc enim quoque legumen, ut cetera quæ velluntur e terra, non subsecantur, quæ, quod ita leguntur, legumina dicta. In pingui rectius quæ cibi sunt maioris, ut holus, triticum, siligo, linum.

RR 1.23.2

The rest of Pliny's sections 165 and 166 continue with what might appear, from his introduction—'subtilis est illa sententia'—to be a verbatim quotation, but is actually a highly-abridged series of notes from Varro: RR 1.9.4 and Columella: RR 2.9.3

36 18.174 In arando magnopere servandum est Catonis oraculum:

Pliny
 Quid est bene agrum colere? bene arare.
 Quid secundum? arare. Quid tertium?
 stercorare. ⁽ⁱ⁾ Sulco vario ne ares.
 tempestive ares.

Cato
 Quid est agrum bene colere? bene arare. Quid
 secundum? arare. Quid tertium? stercorare.
⁽ⁱ⁾ Qui oletum sæpissime et altissime
 miscebit, is tenuissimas radices exarabit. Si
 male arabit, radices susum abibunt, crassiores
 fient, et in radices vires oleæ abibunt. Agrum
 frumentarium cum ares, bene et tempestivo
 ares, sulco vario ne ares.

Ag 61

(i) Pliny omits two of Cato's sentences and then, having quoted him word for word at the start, decides to abridge the last sentence here given and to reverse the order of Cato's precepts. It is difficult to see why he has chosen to do this.

37 18.228 Ciceronis sententiam ipsius verbis subsignabimus.

Pliny
 Iam vero semper viridis semperque
 gravata
 Lentiscus triplici solita est grandescere
 fetu;
 Ter fruges fundens tria tempora monstrat
 arandi.

Cicero
 Iam vero semper viridis semperque gravata
 lentiscus triplici solita grandescere fetu
 ter fruges fundens tria tempora monstrat
 arandi.

De Div 1.9.15

These verses are, one presumes, Cicero's translation of Aratus: *Phænomena*, 1051-3. Pliny need not have culled them directly from Cicero. The subject-matter suggests they could have been quoted in almost any work on agriculture.

38 18.229 Cato de papavere ita tradit.

Pliny
 Virgas et sarmenta quæ tibi usioni
 supererunt in segete comburito. Ubi eas
 combusseris, ibi papaver serito.

Cato
 Si ligna et virgas non poteris vendere neque
 lapidem habebis, unde calcem coquas, de
 lignis carbones coquito, virgas et sarmenta,
 quæ tibi usioni supererunt, in segete comburito,
 Ubi eas combusseris, ibi papaver serito.

Ag 38.4

39 18.243 Caro verna opera sic definit.

Ag 40.1;
 50.1-2¹

40 18.243 Idemque

¹ These passages have been discussed *supra*, p. 275.

Pliny
Piro florente arare incipito macra harenaeque; postea uti quæque gravissima et aquosissima ita postremo arato.

Cato
Piro florente dapem pro bubus facito. Postea verno arare incipito. Ea loca primum arato, quæ rudenta harenaeque erunt. Postea uti quæque gravissima et aquosissima erunt, ita postremo arato.

Ag 131

41 18.260 Cato ... inquit

Pliny
Cato 'fenum' inquit, 'ne sero seces; prius quam semen maturam sit'.

Cato
Fænum, ubi tempus erit, secato cavetoque ne sero seces. Priusquam semen maturam siet, secato.

Ag 53

Pliny has not only abridged Cato here, but has also used only the first half of Cato's sentence.

42 18.348-9 Apud Varro ita est

Lost

43 20.83 [Cato] verba ipsius subiciam ad experimendam sententiam.

Pliny
Pueros pusillos, si laves ea urina, numquam debiles fieri.

Cato
Item pueros pusillos si laves eo lotio, numquam debiles fient.

Ag 157.10

Despite Pliny's 'verba ipsius', there is still a difference in the texts between 'ea urina' and 'eo lotio'. There does not appear to be any manuscript variant which would account for this, so we must suppose either that Pliny saw 'urina' in a text which no longer survives; or that he tried to remember the passage but did not do so quite accurately; or that he deliberately made the change. *Lotium* appears quite frequently in Cato, and Columella uses it in his book about trees. Otherwise the word does not appear to be particularly common and is used in contexts which suggest that it could be close to the slightly vulgar 'piss'.¹ It is possible that Pliny—who does not use the word himself—deliberately changed it for what he may have seen as a somewhat less argotic noun.

44 21.7 Inde, illa XII tabularum lex.

Lost

¹ Cato: Ag 7.3; 122; 127.1; 156.1; 7. Columella: *Arb* 23.1. Catullus:
Celtiberia in terra,
quod quisque minxit, hoc sibi solet mane
dentem atque russam defricare gingivam;
ut quo iste vester expolitor dens est,
hoc te amplius bibisse prædicet loti
39.17-21

Petronius: 'Bellum pomum, qui rideatur alios; larifuga nescio quis, nocturnus, qui non valet lotium suum', *Satyricon* 57.3. Suetonius: 'Reprehendenti filio Tito, quod etiam urinæ vectigal commentus esset, pecuniam ex prima pensione admovit ad nares, sciscitans num odore offenderetur; et illo negante, "Atqui", inquit, "e lotio est"', *Vespasian* 23.3.

45	28.17-18	Quid? non et legum ipsarum in duodecim tabulis verba sunt.	Lost
46	29.13-14	[Cato] Quam ob rem verba eius ipsa ponemus.	Lost ¹
47	31.8	[Tullus] Ponam enim ipsum carmen.	Lost
48	32.20	Auctor est Cassius Hemina cuius verba de ea re subiciam.	Lost
49	32.62	Sunt ergo Muciani verba quæ subiciam.	Lost
50	33.36	Iunius certe, qui ab amicitia eius Gracchanus appellatus est, scriptum reliquit his verbis.	Lost
51	34.25	Meritum eius ipsis ponam annalium verbis.	Lost
52	34.137	Verba ipsa de ea re Messallæ senis ponam.	Lost
53	35.40	Animadverto Vergilium existimasse herbam id esse illo versu.	

Pliny

Vergil

Sponte sua sandyx pascentis vestiat agnos. Sponte sua sandyx pascentis vestiet agnos.
Ecl. 4.45

54	35.113	Inquit Varro.	Lost
55	35.115	[Inscription] Quod est in ipsa pictura his versibus.	Lost
56	35.162	Inquit Fenestella	Lost
57	36.46	[Cicero] inquit.	Lost
58	36.91-2	Utemur ipsius M. Varronis in expositione ea verbis.	Lost
59	36.185	Indicio est Lucilianus ille versus	Lost
60	36.202	M. Varro ... inquit.	Lost
61	37.12-13	Verba ex ipsis Pompei triumphorum actis subiciam.	Lost

¹ See further, Münzer: *Beiträge zur Quellenkritik*, 70-1.

APPENDIX 11:

Pliny's use of Aristotle in *NH* Book 8
 The text and the numbering are those of the
 Loeb edition by Peck and Balme

Pliny		Aristotle	
Reference	Text	Text	Reference
8.28	<p><i>Aristoteles</i> biennio nec amplius quam [semel gignere pluresque quam] singulos,</p> <p>vivere ducenis annis et quosdam CCC.</p> <p>A iuventa eorum a sexagesimo incipit. B Gaudent amnibus maxime et circa fluvios vagantur, C cum alioqui nare propter magnitudinem corporis non possint, D iidem frigoris impatientes;</p>	<p>κύει δ' ἔτη δύο, τίκτει δ' ἔστι γὰρ μονοτόκον·</p> <p>τὸν δ' ἐλέφαντα ζῆν φασὶν οἱ μὲν περὶ ἔτη τρικόσια οἱ δὲ διακόσια.</p> <p>ζῆν δὲ φασὶ τὸν ἐλέφαντα οἱ μὲν ἔτη διακόσια, οἱ δ' ἑκατὸν εἴκοσι, καὶ τὴν θήλειαν ἴσα σχεδὸν τῷ ἄρρενι, A ἀκμάζειν δὲ περὶ ἔτη ἐξήκοντα, D πρὸς δὲ τοὺς χειμῶνας καὶ τὰ ψύχη δύσριγον εἶναι. B ἔστι δὲ τὸ ζῶον παραποτάμιον, οὐ ποτάμιον· [ποιεῖται δὲ καὶ διὰ τοῦ ὕδατος τὴν πορείαν, ἕως τούτου δὲ προέρχεται ἕως ἂν ὁ μυκτῆρ ὑπὲρ ἑχὴ αὐτοῦ· ἀναφυσᾷ γὰρ διὰ τούτου καὶ τὴν ἀναπνοὴν ποιεῖται.] C νεῖν δ' οὐ πάνυ δύναται διὰ τὸ τοῦ σώματος βάρος.</p> <p>(i) Pliny has altered the order of observations. (ii) [] is not in Pliny's passage.</p>	<p>HA 5.14 546b.11-12</p> <p>HA 7.9 596a.11-12</p> <p>HA 8.46 630b.23-31</p>

	<p>[maximum hoc malum,] A inflationemque et profluvium alvi nec alia morborum genera sentiunt. B olei potu tela quæ corpori eorum inhæreant decidere invenio, [a sudore autem facilius adhærescere.] C et terram edisse iis tabificum est, nisi sæpius mandant; D devorant autem et lapides. [] = not in Aristotle</p> <p>NB: Pliny goes on with details not found in Aristotle. His whole section—apart from the initial observation—may be taken from someone else who based himself on Aristotle, in which case, of course, the other person may have done the re-arranging. Or Pliny himself used genuine Aristotelian information no longer extant.</p>	<p>A οἱ δ' ἐλέφαντες κάμνουσι τοῖς φυσώδεσι νοσήμασιν· διὸ οὔτε τὸ ὑγρὸν περίττωμα προιεσθαι δύνανται οὔτε τὸ τῆς κοιλίας. C καὶ ἐὰν γῆν ἐσθίη μαλακίζεται, ἐὰν μὴ συνεχῶς· εἰ δὲ συνεχῶς, οὐδὲν βλάπτεται. D καταπίνει δὲ καὶ λίθους ἐνίοτε. A ἀλίσκεται δὲ καὶ διαρροία [ὅταν δ' ἀλώσιν, ἰατρούουσιν ὕδωρ θερμὸν δίδοντες τίνειν, καὶ τὸν χόρτον εἰς μέλι βάπτοντες διδόασιν ἐσθίειν, καὶ ἴστησιν ἐκάτερον τούτων. ὅταν δὲ κοπίαση διὰ τὸ μὴ κοιμηθῆναι, ἀλλ' τριβόμενοι καὶ ἐλαίῳ καὶ ὕδατι θερμῷ τοὺς ὤμους ὑγιάζονται. καὶ ὅταν τοὺς ὤμους ἀλγῆ, ὕεια κρέα ὀπτήσαντες προστιθέασι καὶ βοηθεῖ αὐτοῖς.] B ἔλαιον δ' οἱ μὲν πίνουσι οἱ δ' οὐ τῶν ἐλεφάντων· κἂν τύχη σιδήριόν τι ἐν τῷ σώματι ἔνον, τὸ ἔλαιον ἐκβάλλει ὅταν πῖωσιν, ὡς φασί· τοῖς δὲ μὴ πίνουσι τὸν οἶνον ρίζαν ἐψησαντες ἐν ἐλαίῳ διδόασιν.</p> <p>(i) Pliny has altered the order of observations. (ii) [] is not in Pliny's passage.</p>	<p>HA 7.26 605a.23-605b.5</p>
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8.40	Tradunt in Pæonia feram quæ bonasus vocetur equina iuba, cetera tauro similem,	<p>ὁ δὲ βόναςος γίνεται μὲν ἐν Παιονίᾳ [ἐν τῷ ὄρει τῷ Μεσσαπίῳ ὃ ὀρίζει τὴν Παιονικὴν καὶ τὴν Μαιδικὴν χῶραν· καλοῦσι δ' αὐτὸν οἱ Παίονες μόναπον] τὸ δὲ μέγεθος ἐστὶν ἡλίκον ταύρος, καὶ ἐστὶν ὀγκωδέστερον ἢ βοῦς· [οὐ γὰρ πρόμηκός ἐστὶν. τὸ δὲ δέρμα αὐτοῦ κατέχει εἰς ἐπτάκλινον ἀποταθέν.] καὶ τὸ ἄλλο δὲ εἶδος ὅμοιον βοί, πλήν χαίτην ἔχει μέχρι τῆς ἀκρῆμίας ὥσπερ ἵππος·</p> <p>[] not in Pliny. The rest has been epitomised. There follows in Aristotle, but not in Pliny (i) hair colour (ii) hair quality (iii) voice.</p>	HA 8.45 630a.18-25.
	cornibus ita in se flexis ut non sint utilia pugnæ;	<p>κέρατα δὲ γαμψά, κεκαμμένα πρὸς ἄλληλα καὶ ἄχρηστα πρὸς τὸ ἀμύνεσθαι.</p> <p>Next, but not in Pliny, (iv) size and thickness of horns (v) their colour (vi) forelock (vii) teeth (viii) legs and hoofs (ix) tail (x) bull-like behaviour (xi) strong skin (xii) pleasant meat</p>	Ibid. 31-2

	<p>quapropter fuga sibi auxiliari reddentem in ea fimum interdum et trium iugerum longitudine, cuius contactus sequentes ut ignis aliquis amburat.</p>	<p>ὅταν δὲ πληγῇ φεύγει, καὶ ὑπομένει ὅταν ἐξαδυνατῇ, ἀμύνεται δὲ λακτίζων καὶ προσαφοδεύων καὶ εἰς τέτταρας ὀργυῖας ἀφ' ἑαυτοῦ ῥίπτων· ῥαδίως δὲ χρῆται τούτῳ καὶ πολλάκις, καὶ ἐπικαίει ὥστε ἀποψήχεσθαι τὰς τρίχας τῶν κυνῶν. τεταραγμένου μὲν οὖν καὶ φοβουμένου τοῦτο ποιεῖ ἢ κόπρος. ἀταράκτου δ' ὄντος οὐκ ἐπικαίει.</p> <p>Next, but not in Pliny, (xiii) such is animal's form etc. (xiv) giving birth (xv) drop dung before birth (xvi) beast drops much dung</p> <p>Next follows 8.46 passage on elephants.</p>	<p><i>Ibid.</i> 630b.7-13</p>
<p>8.42</p>	<p>magna his libido coitus et ob hoc maribus ira; A Africa hæc maxime spectat, inopia aquarum ad paucos amnes congregantibus se feris. ideo multiformes ibi animalium partus varie feminis cuiusque generis mares aut vi aut voluptate miscente: B unde etiam vulgare Græciæ dictum semper aliquid novi Africam adferre.</p>	<p>B καὶ λέγεται δὲ τις παροιμία, ὅτι αἰεὶ φέρει τι ἢ Λιβύῃ καινόν. A διὰ γὰρ τὴν ἀνομβρίαν μίσγεσθαι δοκεῖ ἀπαντῶντα πρὸς τὰ ὑδάτια καὶ τὰ μὴ ὁμόφυλα, καὶ ἐκφέρειν ὧν οἱ χρόνοι τῆς κυήσεως οἱ αὐτοὶ καὶ τὰ μεγέθη μὴ πολὺ ἀπ' ἀλλήλων· πρὸς ἄλληλα δὲ πραιύνηται διὰ τὴν τοῦ ποτοῦ χρεῖαν.</p>	<p>HA 7.28 606b.19-24</p>

		<p>NB: The reversal of order by Pliny.</p> <p>The Budé note <i>ad locum</i> calls Pliny's version 'a translation'. Clearly it is not.</p> <p>NB: Also no mention of violence in Aristotle</p> <p>Cf., GA 2.7 (746b.9-12)</p>	
8.45	<p>A is ergo tradit leænam primo fetu parere quinque catulos, ac per annos singulis minus, ab uno sterilesce; [informes minimasque carnes magnitudine mustellarum esse initio,] B semenstres vix ingredi posse nec nisi bimenstres moveri; C in Europa autem inter Acheloum tantum Mestumque amnes leones esse, D sed longe viribus præstantiores iis quos Africa et Syria gignant.</p> <p>[] not in Aristotle</p> <p>D is not in a surviving text of Aristotle.</p>	<p>C σπάνιον γὰρ τὸ γένος τὸ τῶν λεόντων ἐστὶ καὶ οὐκ ἐν πολλῷ γίγνεται τόπῳ, ἀλλὰ τῆς Εὐρώπης ἀπάσης ἐν τῷ μεταξὺ τοῦ Ἀχελώου καὶ τοῦ Νέσσου ποταμοῦ.</p> <p>B τίκτει δὲ καὶ ὁ λέων πάνυ μικρὰ οὕτως ὥστε δίμηνα ὄντα μόλις βαδίζειν.</p> <p>A οἱ δ' ἐν Συρίᾳ λέοντες τίκτουσι πεντάκις, τὸ πρῶτον πέντε, εἴτ' ἀεὶ ἐνὶ ἐλάττοντα· μετὰ δὲ ταῦτα οὐκέτι οὐδὲν τίκτουσιν, ἀλλ' ἄγονοι διατελοῦσιν.</p>	HA 6.31 579b.5-11
8.46	<p>leonum duo genera: compactile et breve crispioribus iubis—hos pavidiores esse quam longos simplicique villo, [eos contemptores vulnerum.]</p>	<p>γένη δ' ἐστὶ λεόντων δύο· τούτων δ' ἐστὶ τὸ μὲν στρογγυλότερον καὶ οὐλοτριχότερον δειλότερον, τὸ δὲ μακρότερον καὶ εὐτριχὸν ἀνδρειότερον.</p>	HA 8.44 629b.33-5

	<p>urinam mares crure sublato reddere ut canes. gravem odorem, nec minus halitum.</p> <p>[] not in Aristotle</p>	<p>προίεται δὲ τὴν φύσαν σφόδρα δριμεῖαν καὶ τὸ οὔρον ἔχον ὀσμὴν, διόπερ οἱ κύνες ὀσφραίνονται τῶν δένδρων· οὐρεῖ γὰρ αἴρων τὸ σκέλος ὡσπερ οἱ κύνες. ἐμποιεῖ δὲ καὶ ὀσμὴν βαρεῖαν ἐν τοῖς ἐσθιομένοις καταπνέων· [καὶ γὰρ ἀνοιχθέντος αὐτοῦ τὰ ἔσω ἀτμίδια ἀφήσι βαρεῖαν]</p> <p>[] not in Pliny</p>	<p>HA 7.5 594b.24-7</p>
	<p>E rarus in potu, F vesci alternis diebus, a saturitate interim triduo cibus carere; G quæ possint in mandendo solida devorare, [nec capiente aviditatem alvo coniectis in fauces unguibus extrahere, aut, si fugiendum in satietate habeant.]</p> <p>[] not in Aristotle</p>	<p>G τῇ δὲ βρώσει χρῆται λάβρως, καὶ καταπίνει πολλὰ οὐ διαιρών, F εἰθ' ἡμέρας δύο ἢ τρεῖς ἀσιτεῖ· δύναται γὰρ διὰ τὸ ὑπερπληροῦσθαι. E ὀλιγόποτον δ' ἐστίν.</p>	<p>HA 7.5 594b.18-21</p>
8.47	<p>vitam iis longam docet argumento quod plerique dentibus defecti reperiantur.</p> <p>This sentence follows directly after the previous one in the last section</p>	<p>ἔτη δὲ ζῶσι πολλά, καὶ ὁ ληφθεὶς λέων χλωρὸς πολλοὺς τῶν ὀδόντων εἶχε κατεαγότας, ᾧ τεκμηρίῳ ἐχρῶντό τινες ὅτι πολλά ἔτη ζῶσιν· τοῦτο γὰρ οὐκ ἂν συμπεσεῖν μὴ πολυχρονίῳ ὄντι.</p>	<p>HA 8.45 629b.30-3</p>

<p>8.50</p>	<p>iidem satiati innoxii sunt.</p> <p>A generositas in periculis maxime deprehenditur, non illo tantum modo quo spernens tela diu se terrore solo tuetur ac velut cogi testatur cooriturque non tamquam periculo coactus sed tamquam amentiae iratus; illa nobilior animi significatio—quamlibet magna canum et venantium urgente vi contemptim restitansque cedit in campis et ubi spectari potest;</p> <p>This is either a very free epitomised version of Aristotle's passage, or it comes from a portion of Aristotle's works which has not survived.</p> <p>B idem ubi virgulta silvasque penetravit acerrimo cursu fertur velut abscondente turpitudinem loco. C dum sequitur insilit saltu, quo in fuga non utitur.</p>	<p>καὶ γὰρ ὁ λέων ἐν τῇ βρώσει μὲν χαλεπώτατός ἐστι, μὴ πεινῶν δὲ καὶ βεβρωκῶς πραότατος. [ἔστι δὲ τὸ ἦθος οὐχ ὑπόπτῃς οὐδενός οὐδ' ὑφορώμενος οὐδέν, πρὸς τε τὰ σύντροφα καὶ συνήθη σφόδρα φιλοπαίγμων καὶ στερτικός.]</p> <p>[] not in Pliny</p> <p>A ἐν δὲ ταῖς θήραις ὁρώμενος μὲν οὐδέποτε φεύγει οὐδὲ πτήσσει, ἀλλ' ἐὰν καὶ διὰ πλῆθος ἀναγκασθῇ τῶν θηρευόντων ὑπαγαγεῖν βάδην ὑποχωρεῖ καὶ κατὰ σκέλος καὶ κατὰ βραχὺ ἐπιστρεφόμενος·</p> <p>B ἐὰν μέντοι ἐπιλάβηται δασέος, φεύγει ταχέως ἕως ἂν καταστῆ εἰς φανερόν· τότε δὲ πάλιν ὑπάγει βάδην. C ἐν δὲ τοῖς ψιλοῖς ἐὰν ποτ' ἀναγκασθῇ εἰς φανερόν διὰ τὸ πλῆθος φεύγειν, τρέχει κατατείνας καὶ οὐ πηδᾷ.</p>	<p>HA 8.44 629b.8-26</p>
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<p>8.51</p>	<p>D vulneratus observatione mira percussorem novit et in quantalibet multitudine adpetit. eum vero qui telum quidem miserit sed non vulneraverit correptum rotatumque sternit nec vulnerat.</p> <p>E [] appears briefly in 8.52 as 'hoc tale tamque sævum animal ... terrent, sed maxime ignes'. Fire is part of a larger list, and there is no reference to Homer.</p>	<p>Ε [τὸ δὲ δρόμημα συνεχῶς ὥσπερ κυνός ἐστι κατατεταμένον· διώκων μέντοι ἐπιρρίπτει ἑαυτὸν ὅταν ἦ πλησίον.] ἀληθῆ δὲ καὶ τὰ λεγόμενα, τὸ τε φοβεῖσθαι μάλιστα τὸ πῦρ, ὥσπερ καὶ Ὅμηρος ἐποίησεν—καιόμεναί τε δεταί, τὰς τε τρεῖ ἐσσύμενός περ,—^D καὶ τὸ τὸν βάλλοντα τηρήσαντα ἴεσθαι ἐπὶ τοῦτον. ἐὰν δὲ τις βάλλῃ μὲν, μὴ ἐνοχλῆ δὲ αὐτόν, ἐὰν ἐπαίξας συλλάβῃ, ἀδικεῖ μὲν οὐδὲν οὐδὲ βλάπτει τοῖς ὄνουσι, σείσας δὲ καὶ φοβήσας ἀφήσῃ πάλιν.</p>	
<p>8.67</p>	<p>Camelos inter armenta pascit oriens, quarum duo genera, Bactriae et Arabiae; differunt, quod illae bina habent tubera in dorso, hae singula et sub pectore alterum cui incumbant;</p>	<p>αἱ δὲ κάμηλοι ἴδιον ἔχουσι παρὰ τὰλλα τετράποδα τὸν καλούμενον ὕβον ἐπὶ τῷ νῶτι. διαφέρουσι δ' αἱ Βάκτριαι τῶν Ἀραβίων· αἱ μὲν γὰρ δύο ἔχουσιν ὕβους, αἱ δ' ἓνα μόνον· ἄλλον δ' ἔχουσιν ὕβον τοιοῦτον οἷον ἄνω ἐν τοῖς κάτω, ἐφ' οὗ, ὅταν κατακλιθῆ εἰς γόνατα, ἐστήρικται τὸ ἄλλο σῶμα.</p> <p>The rest of the passage⇒ 499a.30 records (i) teats, (ii) tail, (iii) penis, (iv) movement of legs, (v) bones, (vi) feet. None of this appears in Pliny.</p>	<p>HA 2.1 499a.13-18</p>

	<p>dentium superiore ordine ut boves carent in utroque genere.</p> <p>[omnes autem iumentorum ministeriis dorso funguntur atque etiam equitatus in praeliis;] velocitas ut* equo</p> <p>*Mayhoff.</p> <p>[] not in Aristotle</p>	<p>ὄσα μὲν γὰρ ἐστὶ κερατοφόρα, οὐκ ἀμφώδοντά ἐστιν· οὐ γὰρ ἔχει τοὺς προσθίους ὀδόντας ἐπὶ τῆς ἄνω σιαγόνος. ἔστι δ' ἓνια οὐκ ἀμφώδοντα καὶ ἀκέρατα, οἷον κάμηλος.</p> <p>‡ [ἐκτέμνονται δὲ καὶ αἱ κάμηλοι αἱ θήλειαι, ὅταν εἰς πόλεμον χρῆσθαι αὐταῖς βούλονται, ἵνα μὴ ἐν γαστρὶ λάβωσιν. κέκτηνται δ' ἓνιοι τῶν ἄνω καμήλους καὶ τρισχιλίας·] θέουσι δὲ θᾶσσον τῶν Νισαίων ἵππων, ἐὰν εἰς πολὺ θέωσι, διὰ τὸ μέγεθος τοῦ ὀρέγματος.</p> <p>‡ Castration appears later in Pliny's passage.</p>	<p>HA 2.1 501a.12-14</p> <p>HA 8.50 632a.27-31</p>
<p>8.68</p>	<p>[sed sua cuique mensura sicut vires; nec ultra adsuetum procedit spatium, nec plus instituto onere recipit.] odium adversus equos gerunt naturale.</p> <p>[] not in Aristotle</p> <p>A sitim et quadriduo tolerant, implenturque cum bibendi occasio est et in præteritum et in futurum, B obturbata proculcatione prius aqua: aliter potu non gaudent.</p>	<p>ἵππῳ μὲν γὰρ ὄλωσ ἀεὶ πολεμεῖ,</p> <p>This is a single remark in the midst of other material involving other animals.</p> <p>B ἡ δὲ κάμηλος πίνει ἡδὶον θολερὸν καὶ παχύ, οὐδ' ἀπὸ τῶν ποταμῶν πρότερον πίνει ἢ συνταράξει.</p> <p>A δύναται δ' ἄποτος ἀνέχεσθαι καὶ τέτταρας ἡμέρας· εἶτα μετὰ ταῦτα πίνει πολὺ πλῆθος.</p>	<p>HA 6.18 571b.25</p> <p>HA 7.8 595b.31-596a.2</p>

	<p>vivunt quinquagenis annis, quædam et centenis;</p> <p>utrimque rabiem et ipsæ sentiunt.</p> <p>castrandi genus etiam feminas quæ bello præparentur inventum est: fortiores ita fiunt coitu negato.</p>	<p>ζῶσι δ' αἱ μὲν πολλαὶ τῶν καμήλων περὶ ἔτη τριάκοντα, ἔνιαι δὲ πολλῶ πλείω· καὶ γὰρ εἰς ἔτη ἑκατὸν ζῶσιν.</p> <p>Arist. = 30 Pliny = 50 Arist. = 100 Pliny = 100</p> <p>λαμβάνει δ' ἡ λύττα καὶ τὰς καμήλους.</p> <p>ἐκτέμνονται δὲ καὶ αἱ κάμηλοι αἱ θήλειαι, ὅταν εἰς πόλεμον χρῆσθαι αὐταῖς βούλονται, ἵνα μὴ ἐν γαστρὶ λαβῶσιν.*</p> <p>* See <i>supra</i> in connection with camels running faster than horses.</p>	<p>HA 7.8 596a.10-11</p> <p>HA 7.22 604a.10-11</p> <p>HA 8.50 632a.27-9</p>
8.88	<p>[Ichneumon] notum est animal hac gloria maxime in eadem natum Ægypto. mergit se limo sæpius siccaturque sole, mox ubi pluribus eodem modo se coriis loricavit, in dimicationem pergat. in ea caudam attollens ictus inritos aversus excipit, donec obliquo capite speculatus invadat in fauces. nec hoc contentus aliud haud mitius debellat animal</p>	<p>ὁ δ' ἰχνεύμων ὁ ἐν Αἰγύπτῳ ὅταν ἴδῃ τὸν ὄφιν τὴν ἀσπίδα καλουμένην, οὐ πρότερον ἐπιτίθεται πρὶν συγκαλέσῃ βοηθοὺς ἄλλους· πρὸς δὲ τὰς πληγὰς καὶ τὰ δῆγματα πηλῶ καταπλάττουσιν ἑαυτοῦ· βρέξαντες γὰρ ἐν τῷ ὕδατι πρῶτον, οὕτω καλινδοῦνται ἐν τῇ γῆ.</p> <p>These passages are not really similar. But (a) if Pliny read Book 8, he will have seen this passage; (b) Pliny's later reference to the trochilos may be connected with the sentence which immediately follows this.</p>	<p>HA 8.6 612a.16-21</p>

<p>8.89</p>	<p>[unum hoc animal terrestre linguæ usu caret,] unum superiore mobili maxilla inprimit morsum...</p> <p>[] Contradicted by Aristotle: PA 2.17 (660a.26-34)</p> <p>A magnitudine excedit plerumque <i>duodeviginti</i> cubita.</p> <p>B parit ova quanta <i>anseris</i>, [æque extra eum locum semper incubat prædivinatione quadam ad quem summo auctu eo anno egressurus est Nilus.]</p> <p>C nec aliud animal ex minore origine in maiorem crescit magnitudinem;</p> <p>[] not in Aristotle</p>	<p>κινεῖ δὲ πάντα τὰ ζῷα τὴν κάτωθεν σιαγόνα, πλὴν τοῦ ποταμίου κροκοδείλου· οὗτος δὲ τὴν ἄνω μόνον·</p> <p>[The young crocodile] C αὐξανόμενος δὲ γίγνεται καὶ ἑπτακαίδεκα πήχεων. λέγουσι δὲ τινες ὅτι καὶ αὐξάνεται ἕως ἂν ζῆ.</p> <p>Not really similar.</p> <p>[ὁ δὲ ποτάμιος κροκόδειλος τίκτει μὲν φά πολλά, τὰ πλεῖστα περὶ ἑξήκοντα, λευκὰ τὴν χρόαν, καὶ ἐπικάθηται δ' ἡμέρας ἑξήκοντα (καὶ γὰρ καὶ βιοῖ χρόνον πολύν),] A ἐξ ἐλαχίστων δ' ὧν ζῷον μέγιστον γίγνεται τοῦτο· B τὸ μὲν γὰρ ὧν οὐ μείζον ἐστι χηνείου,</p> <p>[] not in Pliny</p>	<p>HA 1.11 492b.23-5</p> <p>HA 5.33 558a.23-4</p> <p>HA 5.33 558a.17-23</p>
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	<p>et unguibus autem armatus est, contra omnes ictus cute invicta. dies in terra agit, noctes in aqua, teporis utrumque ratione.</p>	<p>[οἱ δὲ κροκόδειλοι οἱ ποτάμιοι ἔχουσιν ὀφθαλμοὺς μὲν ὑός,] ὀδόντας δὲ μεγάλους καὶ χαυλιόδοντας καὶ ὄνυχας ἰσχυροὺς καὶ δέρμα ἄρρηκτον φολιδατόν· [βλέπουσι δ' ἐν μὲν τῷ ὕδατι φαύλας, ἔξω δ' ὀξύτατον.] τὴν μὲν οὖν ἡμέραν ἐν τῇ γῆ τὸ πλεῖστον διατρίβει, τὴν δὲ νύκτα ἐν τῷ ὕδατι· ἀλεινότερον γὰρ ἐστὶ τῆς αἰθρίας.</p> <p>[] not in Pliny</p>	<p>HA 2.10 503a.9-15</p>
<p>8.90</p>	<p>hunc saturum cibo piscium et semper esculento ore in litore somno datum parva avis, quæ trochilos ibi vocatur, [rex avium in Italia,] invitat ad hiandum pabuli sui gratia, os primum eius adsultim repurgans, mox dentes et intus fauces quoque ad hanc scabendi dulcedinem quam maxime hiantes,</p> <p>[] not in Aristotle</p>	<p>τῶν δὲ κροκοδείλων χασκόντων οἱ τροχίλοι καθαίρουσιν εἰσπετόμενοι τοὺς ὀδόντας, καὶ αὐτοὶ μὲν τροφήν λαμβάνουσιν, ὁ δ' ὠφελούμενος αἰσθάνεται καὶ οὐ βλάπτει, [ἀλλ' ὅταν ἐξελθεῖν βούληται κινεῖ τὸν αὐχένα ἵνα μὴ συνδάκη.]</p> <p>[] not in Pliny</p>	<p>HA 8.6 612a.21-4</p>

8.105	<p>Hyænis utramque esse naturam et alternis annis mares alternis feminas fieri, parere sine mare vulgus credit, Aristoteles negat.</p> <p>collum ut iuba in continuitatem spinæ porrigitur flectique nisi circumactu totius corporis non quit.</p>	<p>Εὐθητικῶς δὲ καὶ λίαν διεψευσμένοι καὶ οἱ περὶ τρόχου καὶ ὑαίνης λέγοντες. φασι γὰρ τὴν μὲν ὑαίαν πολλοί, τὸν δὲ τρόχον Ἡρόδωρος ὁ Ἡρακλεώτης, δύο αἰδοῖα ἔχειν, ἄρρενος καὶ θήλεος, καὶ τὸν μὲν τρόχον αὐτὸν αὐτὸν ὀχεύειν, τὴν δ' ὑαίαν ὀχεύειν καὶ ὀχεύεσθαι παρ' ἔτος. ὅπτα γὰρ ἡ ὑαίνα ἐν ἔχουσα αἰδοῖον· ἐν ἐνίοις γὰρ τόποις οὐ σπάνις τῆς θεωρίας· ἀλλ' ἔχουσιν αἱ ὑαίαι ὑπὸ τὴν κέρκον ὁμοίαν γραμμὴν τῷ τοῦ θήλεος αἰδοίῳ. ἔχουσι μὲν οὖν καὶ οἱ ἄρρενες καὶ αἱ θήλειαι τὸ τοιοῦτον σημεῖον, ἀλλ' ἀλίσσονται οἱ ἄρρενες μᾶλλον· διὸ τοῖς ἐκ παρόδου θεωροῦσι ταύτην ἐποίησε τὴν δόξαν.</p> <p>[ὃν δὲ καλοῦσιν οἱ μὲν γλάνον οἱ δ' ὑαίαν ἔστι τὸ μέγεθος οὐκ ἔλαττον λύκου,] χαίτην δ' ἔχει ὡσπερ ἵππος, καὶ ἔτι σκληροτέρας καὶ βαθυτέρας τὰς τρίχας, καὶ δι' ὅλης τῆς ῥάχεως.</p> <p>[] not in Pliny</p>	<p>GA 3.6 757a.2-12</p> <p>Cf., HA 6.32 579b.15-18 (principally about the genitalia)</p> <p>HA 7.5 594a.32- 594b.2</p>
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<p>8.106</p>	<p>item vomitionem hominis imitari ad sollicitandos canes quos invadat; ab uno animali sepulcra erui inquisitione corporum;</p> <p>feminam raro capi;</p> <p>[Gap]</p> <p>præterea umbræ eius contactu canes obmutescere;</p>	<p>[ἐπιβουλεύει δὲ καὶ θηρεύει τοὺς ἀνθρώπους,] τοὺς δὲ κύνας καὶ ἔμοῦσα θηρεύει ὥσπερ οἱ ἄνθρωποι· καὶ τυμβωρυχεῖ δὲ ἐφιέμενον τῆς σαρκοφαγίας τῶν ἀνθρώπων.</p> <p>[] source of Pliny's earlier statement?</p> <p>σπάνιον δ' ἐστὶ λαβεῖν θήλειαν ὕαιναν· ἐν ἔνδεκα γοῦν κυνηγός τις μίαν ἔφη λαβεῖν.</p> <p>Ἐν δὲ τῇ Ἀραβίᾳ ὕαινῶν τι γένος φασὶν εἶναι, ὃ ἐπειδὴν προΐδη τι θηρίον ἢ ἀνθρώπου ἐπιβῆ ἔπὶ τὴν σκιάν, ἀφωνίαν ἐργάζεται καὶ πῆξιν τοιαύτην ὥστε μὴ δύνασθαι κινεῖν τὸ σῶμα. τοῦτο δὲ ποιεῖν καὶ ἐπὶ τῶν κυνῶν.</p> <p>There are very big differences between this and Pliny's statement.</p>	<p>HA 7.5 594b.3-5</p> <p>HA 6.32 579b.29-30</p> <p>Mir Ausc 145 845a.24-7 (?)</p>
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APPENDIX 12:

Analyses of two passages in the *NH*, using the eight *descriptores* system

Papyrus: 13.68-89

68		Introductory remarks by Pliny.
69-70	<i>Exempla</i>	Varro's account of the early history of papyrus; Homer; Varro. ¹
71	<i>Origo</i>	The swamps of Egypt; description of the plant.
71-2	<i>Usus</i>	Flowers are made into wreaths for sacred statues; roots used for timber, etc.; papyrus-leaf plaited; bark used for cloth; chewing material.
73	<i>Origo</i>	Syria
73	<i>Usus</i>	Used for ropes; paper; cloth.
74	<i>Usus</i>	Paper.
74-6	<i>Genera</i>	Various qualities of writing-papyrus.
77	<i>Natura</i>	How 'paper' is made. ²
78-80	<i>Genera</i>	Various types and quality of 'paper'. ³
81-2	<i>Natura</i>	Further steps in the manufacture of papyrus.
83		Pliny's record of autopsy of various autographs.
84-9	<i>Exempla</i>	Various anecdotes connected with the history of the use of papyrus.

Flax: 19.1-25

1-2		Introductory remarks by Pliny.
3-4	<i>Origo</i>	Plant; journeys from Egypt to Italy and from Hispania etc., to Italy; record sailing by Gaius Flavius. ⁴

¹ One might equally well use 'origo' as a *descriptor* here, since Varro is principally occupied with discussing the origins of Greek and Roman knowledge of papyrus.

² I take this to depend upon the various characteristics of the papyrus plant and therefore use *Natura* as the most appropriate *descriptor*.

³ This is combined with *Exempla*, since Pliny is discussing changes made during the reigns of Augustus and Claudius.

⁴ The sailing-times may seem to be far removed from the origin of flax/linen, but the context makes it clear that they flow from that very subject in Pliny's stream of composition: 'dici neque inter fruges neque inter hortensia potest linum; sed ... quodve miraculum maius, herbam esse quæ admoveat Ægyptum Italiæ' and so forth.

5	<i>Usus</i>	Sails.
6		Remarks by Pliny.
7	<i>Cultura</i>	Sandy soil; single ploughing; grows quickly; growing season.
7		Remarks by Pliny.
8	<i>Usus</i>	The various peoples who use linen for sail-cloth.
9-11	<i>Genera</i>	Three grades of linen from Italy, Hispania Citerior, Campania. ¹
11-12	<i>Exempla</i>	Modern notice of Fulvius Lupus; ancient Egyptian anecdote from Mucianus.
13-15	<i>Genera</i>	Various further examples of types of linen from Italy and Egypt; 'quattuor ibi genera', referring to Egypt. ²
16	<i>Natura</i>	Colours; modes of preparation of flax.
16	<i>Medicinæ</i>	'Inter medicamina huic vis'.
16	<i>Usus</i>	Used in porridge.
17	<i>Natura</i>	Further preparation of flax.
17	<i>Usus</i>	Lamp wicks.
18	<i>Natura</i>	The pith.
18	<i>Usus</i>	Fuel.
18	<i>Natura</i>	Combing flax; stages to weaving.
19	<i>Genera</i>	Asbestos.
19	<i>Usus</i>	Used for royal shrouds.
19	<i>Origo</i>	Plant grows in India.
19	<i>Natura</i>	Colours.
20	<i>Usus</i>	Information from Anaxilaus.
20	<i>Origo</i>	Another type from Elis. ³
20	<i>Usus</i>	Used for women's clothes; cost.
21	<i>Medicinæ</i>	Nap of sails used as a medicine.
21	<i>Origo</i>	Substance for bleaching linen derived from poppies.
22	<i>Usus</i>	Attempt to dye linen.
22-5	<i>Exempla</i>	Anecdotes about Alexander the Great, Cleopatra, and stories from earlier Roman history.

1 Included in this information are one or two examples of *Usus*.

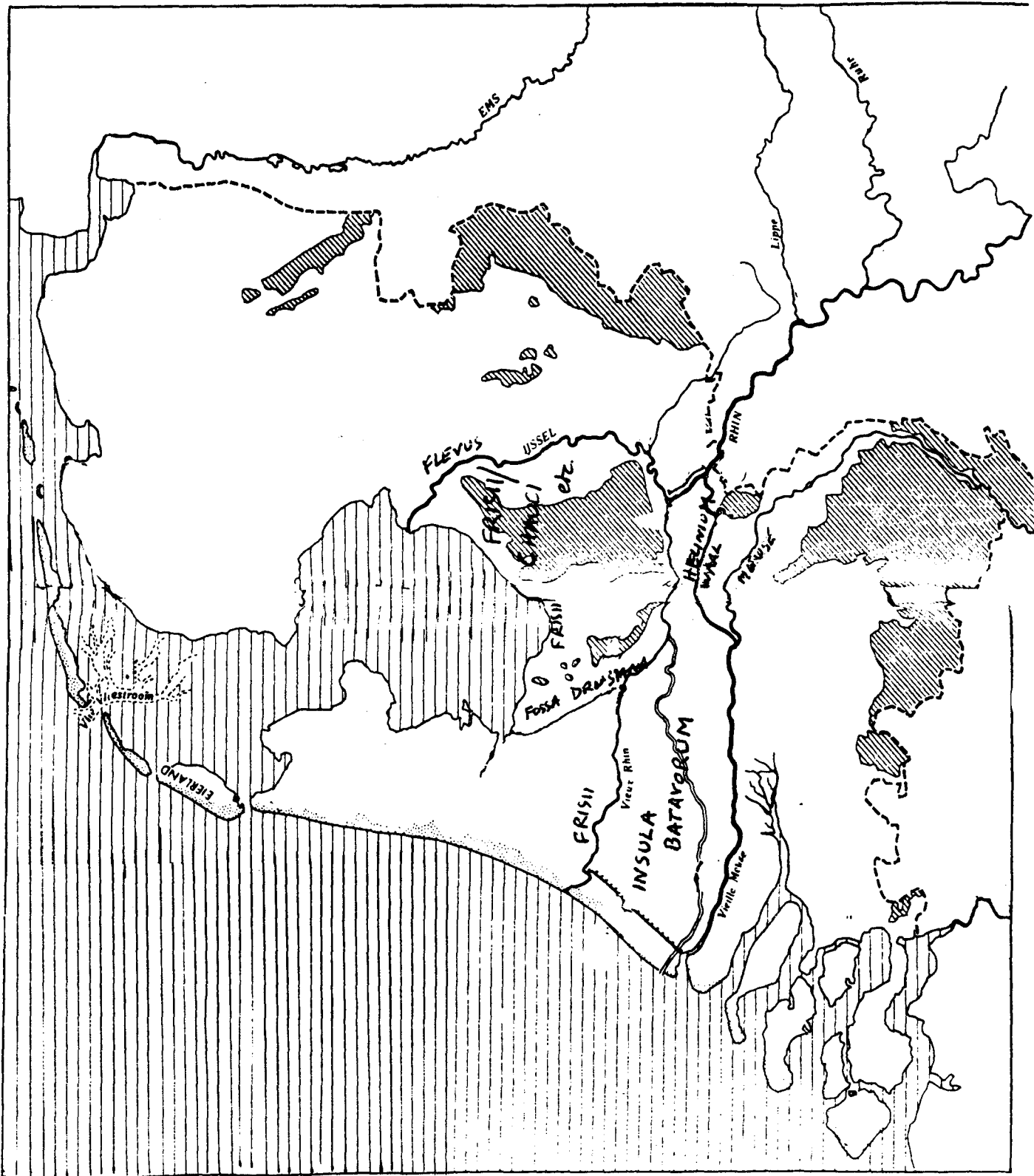
2 These also include examples of *Usus*.

3 Sections 19-20 could be classed by the *descriptor* 'Genera'.

APPENDIX 13:
Pliny's references to later Books in the *NH*

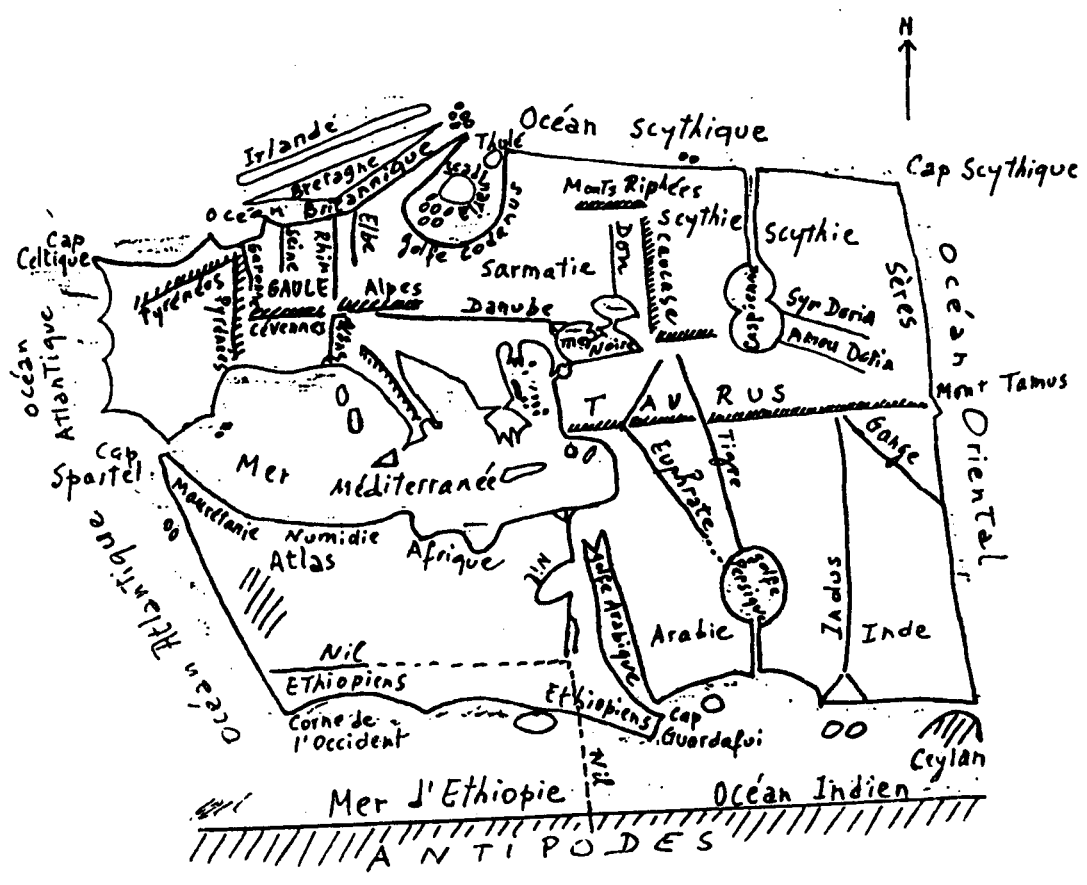
Reference	Passage	Later reference
3.7	inter insulas dicendæ	4.119
5.10	dicemus	6.197
6.161	de odoribus suo dicemus volumine	12.73sq.
8.193	de reliquarum infectu suis locis dicemus in conchyliis maris	9.62
Ibid	aut herbarum naustra	21.12
9.141	ut dicemus in terrestribus	16.32
12.104	quamvis alio herbis dicato volumine	21.120
13.11	ut dicemus	23.103
14.77	ut docebimus in parte medicinæ	23.53
14.104	myrtiten Cato quemadmodum fieri docuerit mox paulo indicabimus	15.123
14.121	cuius faciendæ ratio proximo dicetur volumine	16.52
14.127	proximo volumine demonstrabimus inter arbores feras	16.53sq.
14.150	de quo sequenti volumine dicemus	15.4-34
15.94	quo dicemus in insitis modo	17.122
15.105	planius hoc fiet in herbarum natura	21.74-8
16.99	quorum ratio aptius reddetur tertio ab hoc volumine	18.201sq.
16.115	de quo plura alias	18.186
16.134	de qua suo dicemus volumine	17.58
16.143	ut in herbarum natura dicemus	19.41
16.188	dies siderum horum reddentur suo loco	18.271, 313
17.23	dicemusque proximo [volumine] plura cælestia	18.321sq.
17.72	ut suo loco dicemus	19.162; 21.24
17.191	ut in siderum causis docebimus proximo volumine	18.283
17.251	remedia demonstrabimus volumine proximo	18.279
18.242	quæ separatim proximis voluminibus dicetur	19.49sq.; 21.14sq.
19.47	quos in medicina usus habeat dicemus suo loco	24.94
19.49	de quorum opere alio volumine dicemus	[He does not do so]
19.74	quam ob rem differentur in sua volumina	20.3, 13
19.89	inter medicamenta dicendum	25.110

19.94	quas proximo reddemus libro	20.102sq.
19.128	de qua dicemus inter medicas	20.58
19.129	de quo plura alias	21.88
19.136	quas in medicinæ loco reddemus	20.78sq
19.169	de reliquis generibus papaveris ... dicemus in medicinæ loco	20.198
21.51	de quo plura alias	25.114sq
21.76	quæ suis locis dicemus	29.27
21.93	de scorpione dicemus inter medicas	22.39
21.101	de qua plura dicemus inter medicas	25.80
22.133	de qua dicemus suo loco	25.167
24.81	quam inter herbas dicemus	26.49
24.121	quam proximo dicemus volumine	25.17
24.138	nobilibus in sequentia volumina dilatis	Bks. 25 and 26
24.167	de his aptiore dicturis loco	26.18-20
25.41	reliquos usus dicemus suis locis	26.121, 124, 150
25.86	ut demonstrabimus suo loco	26.38
26.20	probaturi suo loco essemus	29.6sq.
28.135	effectus dicemus suis locis	[He does not do so]
29.51	sicut suis locis dicemus	33.64
29.118	stibi quid sit dicemus in metallis	33.101
29.143	sequenti dicemus volumine	30.21sq.
30.46	de quarum usu dicemus suis locis	[He does not do so]
31.110	qui dicetur suo loco	36.193
33.22	sicut dicemus in gemmarum volumine	37.2sq.
33.64	suo loco dicemus	35.36, 100, 125
33.105	de qua dicemus in plumbo	34.173sq.
33.108	in plumbo dicendam	34.173
33.117	de quibus suis locis dicam	35.30sq.
33.120	suo loco docebimus	35.40
34.35	in ea, quam plasticen Græci vocant, dici convenientius erit	35.151sq.
34.91	ut dicemus	35.101
34.147	de magnete lapide suo loco dicemus	36.126sq.



MAP 1 GERMANIA INFERIOR; ISSSELMEER

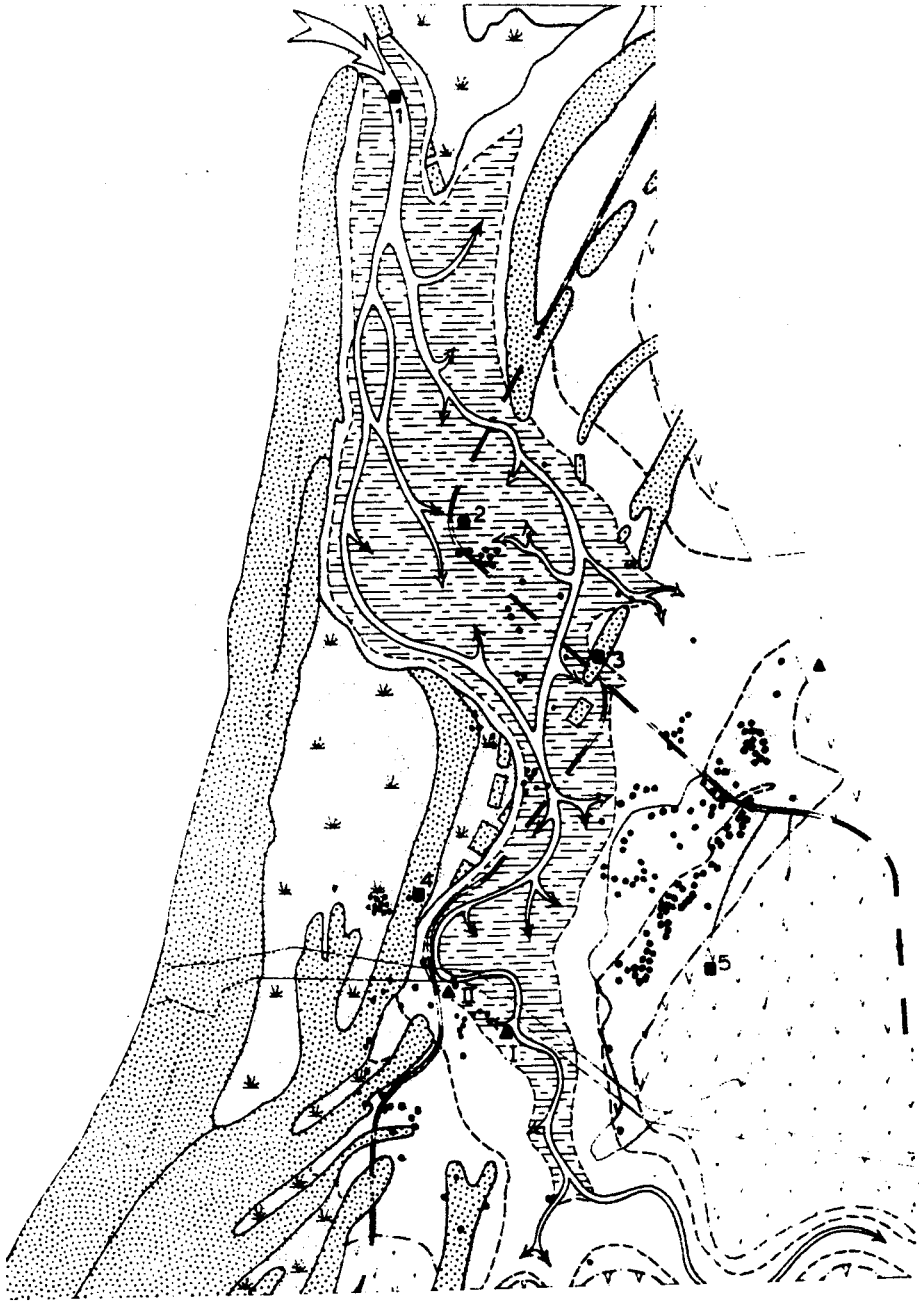
[REL 42 (1964), 472-3 modified]



MAP 2 POMPONIUS MELA



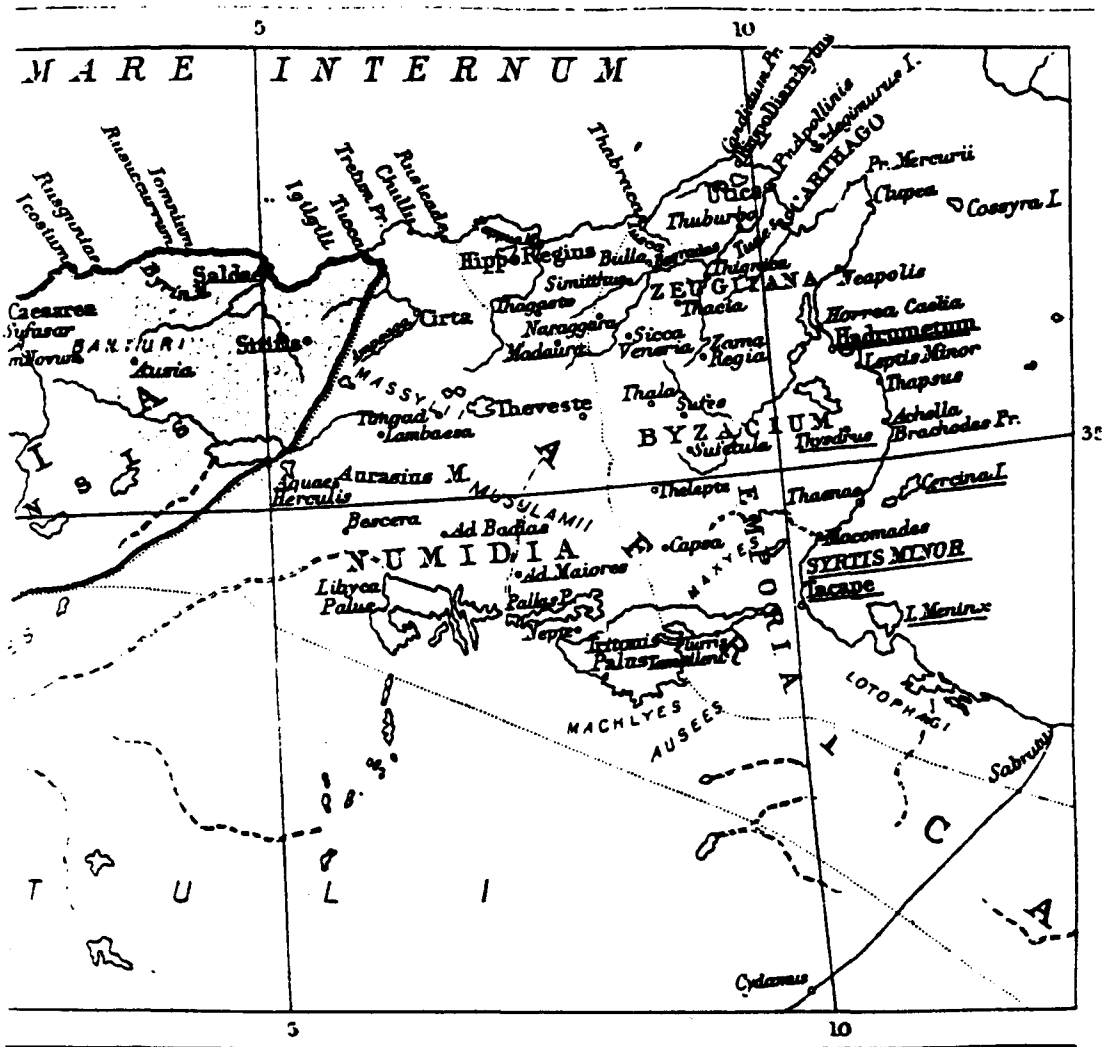
MAP 3 PTOLEMY



MAP 4

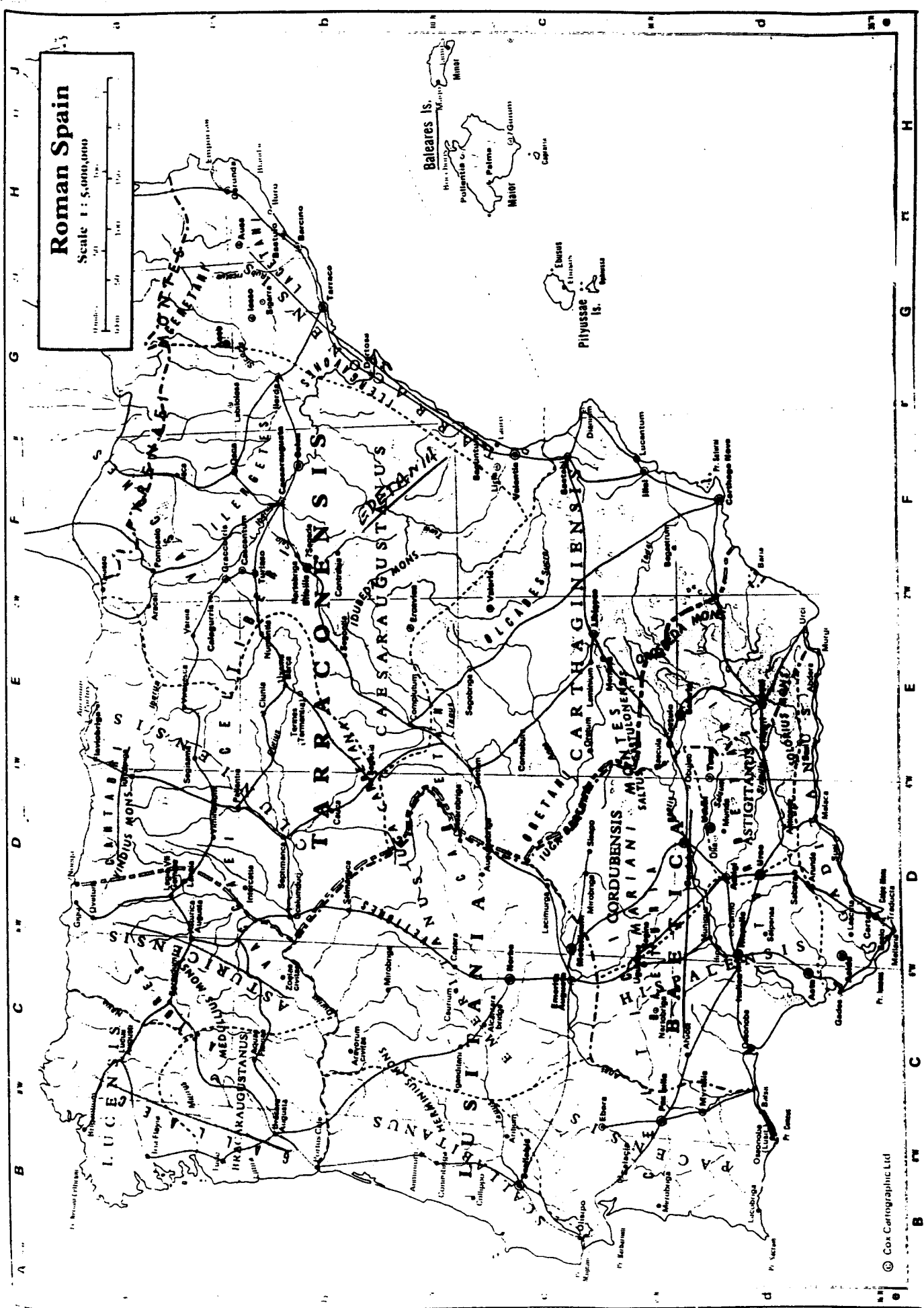
The area of the former Oer-IJ estuary in c. 0 AD

[Brandt-Slofstra, Roman and Native in the Low Countries, 131]



MAP 6 AFRICA

[Thomson: Everyman's Classical Atlas, (London 1961), 51]



MAP 7 HISPANIA

[Hammond's Atlas of the Greek and Roman World in Antiquity, map 25a]

BIBLIOGRAPHY

Published texts:

Apollonius Rhodius, *Argonautica*, H. Fraenkel, ed., (Oxford 1961).

Apuleius, *Apologia*, R. Helm ed., (Leipzig 1959).

Aristophanes, *Nubes*, K.J. Dover, ed., (Oxford 1968).

Aristotle, *De Generatione Animalium*, H.J. Drossart ed., (Oxford 1965).

_____, *Historia Animalium*, P. Louis ed., 3 vols (Paris 1964-9).

Julius Caesar, *Bellum Gallicum*, O. Seel ed., (Leipzig 1961).

Callimachus, *Fragmenta* Vol.I R. Pfeiffer ed., (Oxford 1949).

Cato, *De Agricultura*, G. Goetz, ed., (Leipzig, 1922).

Celsus, *De Medicina*, C. Daremberg ed., (Leipzig 1891).

Censorinus. *Censorini de die natali, ad Q. Cærellium*, N. Sallmann, ed. (Teubner, 1983).

Cicero. Citations of his speeches have been taken from the various volumes of the Bude edition.

Cicero. *Epistolæ ad Familiares*, D. R. Shackleton Bailey, ed. 2 volumes (Cambridge, 1977).

_____. *Epistolæ ad Quintum fratrem et M. Brutum*, D. R. Shackleton Bailey, ed. (Cambridge, 1980).

_____. *Hortensius*, A. Grilli, ed. (Varese-Milan, 1962).

_____. *M. Tulli Ciceronis Academica*, J. S. Reid, ed. (London, 1885).

_____. *Letters to Atticus*, D. R. Shackleton Bailey, ed. 7 volumes (Cambridge, 1965-7).

_____. *M. Tulli Ciceronis Timæus*, F. Pini, ed. (Arnoldi Mondadori, 1965).

- Columella, *Res Rustica*, H. Boyd Ash and others edd., 3 vols. (Cambridge, Mass. 1941-55).
- Quintus Curtius Rufus, *Historia Alexandri*, J. Rolfe ed., 2 vols. (Cambridge, Mass. 1946).
- The Digest of Justinian*, T Mommsen and P. Krueger, eds. 4 volumes (Philadelphia, 1985).
- Dio Cassius, *Historiae Romanae*, U.P. Boissevain ed., 3. vols. (Berlin 1895-1901).
- Diodorus Siculus, *Bibliotheca Historica*, lib. 1-20 F. Vogel and K.T. Fischer 3rd ed. 5 vols. (Leipzig 1888-1906); lib. 21-40 F.R. Watton (Cambridge, Mass. 1957-67).
- Diogenes Laertius, *Vitae Philosophorum*, H.S. Long ed., (Oxford 1964).
- Dionysius of Halicarnassus, *Antiquitates Romanae*, K. Jacoby ed., 4 vols. (Leipzig 1885-1905).
- Doxographi Græci*, H. Diels, ed. (Berlin, 1879).
- Eratosthenes, *Die geographischen Fragmente des Eratosthenes*, H. Berger, ed. (Leipzig, 1880).
- Eusebius, *Historia Ecclesiastica*, G. Bardy ed., 3 vols. (Paris 1952-8).
- Florus, *Epitomae*, O. Rossbach ed., (Leipzig 1896).
- Frontinus, *Strategemata*, R.I Ireland ed., (Leipzig 1990).
- Fronto, *Epistulae*, M.P.J. Van Den Hout ed., (Leipzig 1988).
- Aulus Gellius, *Noctes Atticae*, C. Hosius ed., 2 vols. (Leipzig 1903).
- Geminus of Rhodes, *Elementa Astronomiæ*, G. Aujac, ed. (Paris, 1975).
- Homer, *Iliad*, T.W. Allen ed. (Oxford 1931); *Odyssey*, P. von der Muehil ed. (Basel 1962).
- Horace, *Opera*, D.R. Shackleton Bailey ed., (Leipzig 1975).
- Jerome (St.). *Adversus Jovinianum* 2, in Migne, *PL* 23.306.
- _____. *Commentarius in Isaiam Prophetam Lib. XV, Cap. LIV*, in Migne, *PL* 25.543.
- _____. *Chronologia II*, in Migne, *PL* 28.464.

_____. *Commentarius in Ezechielem Prophetam Lib. IX, Cap. XXVIII*, in Migne, *PL* 29.284.

Historicorum Romanorum Reliquiæ, H. Peter, ed., 2 volumes (Leipzig, 1906-14).

Josephus, *De Bello Judaico*, B. Niese ed. = vol. 6, *Flavii Josephi Opera*, (Berlin 1895).

Juvenal, *Saturae*, C.F. Hermann ed., (Leipzig 1914).

Livy, *Ab Urbe Condita*, lib. 1-10 R.S. Conway and others edd., (Oxford 1914-35); lib. 31-38, M. Mueller ed., (Leipzig 1929-30); lib. 39-40, H. Heraeus ed., (Leipzig 1931); lib. 41-45, J. Briscoe ed., (Stuttgart and Leipzig 1986).

Lucian, *Opera Omnia*, M.D. MacLeod ed., 4 vols. (Oxford 1972-87).

Martial, *Epigrammata*, W. Heraeus ed., corrected by J. Borovskij (Leipzig 1976).

Cornelius Nepos, *Vitae cum fragmentis*, P.K. Marshall ed., (Stuttgart and Leipzig 1991).

Ovid, *Tristia*, S.G. Owen ed., (Oxford 1915).

Petronius, *Satyricon*, F. Buecheler and H. Heraeus edd., (Berlin 1922).

Plato, *Phaedrus*, J. Burnet ed. in *Platonis Opera* vol.2 (Oxford 1901).

Pliny. *The Natural History, with an English Translation* (London, 1938-62). Loeb edition, 10 volumes.

_____. *Histoire Naturelle, texte établi, traduit et commenté* (Paris, 1950-72). Budé edition, 37 volumes.

_____. *Naturkunde* (Munich, 1973-). König-Winkler edition, 23 volumes (in progress).

Pliny the Younger, *Epistulæ et Panegyricus*, M. Schuster and R. Hanslik, ed. (Teubner, 1992).

Plutarch, *Moralia*, F.C. Babbitt and others edd., 16 vols. (Cambridge, Mass. 1927-69).

_____. *Vitae Parallelae*, B. Perrin ed., 11 vols. (Cambridge, Mass. 1914-26).

- Polybius, *Historiae*, T. Buettner-Wobst ed., 4 vols. (Leipzig 1889-1905).
- Pomponius Mela. *De Chorographia*, C. Fick, ed. (Teubner, 1968).
- Posidonius, *The Fragments*, L. Edelstein and I.G. Kidd edd., (Cambridge 1972).
- Quintilian, *Institutio Oratoria*, 2 vols, Vol. 1 L. Radermacher ed., (Leipzig 1907); Vol. 2 E. Bonnell ed., (Leipzig 1922)
- Scribonius Largus. *Scribonii Largi Compositiones*, S. Sconocchia, ed. (Teubner, 1983).
- Seneca the Elder, *Controversiae*, L. Hakanson ed., (Leipzig 1989).
- Seneca, *De Beneficiis*, T. Hosius ed., (Leipzig 1914).
- _____, *Dialogi*, L.D. Reynolds ed., (Oxford 1977).
- _____, *Epistulae*, Beltrami ed., (Rome 1937).
- _____, *Naturales Quaestiones*, A Gercke ed., (Leipzig 1907).
- Strabo, *Geographica*, A. Meineke ed., 3 vols. (Leipzig 1877).
- Suetonius, *De Vita Caesarum*, J.C. Rolfe ed., 2 vols. (Cambridge, Mass. 1913-14).
- _____, *De Grammaticis et Rhetoribus*, R.P. Robinson (Paris 1925).
- Suetonius. *G. Suetoni Tranquilli praeter Cæsarum libros reliquiæ*, A. Reifferscheid, ed. (Leipzig, 1860).
- Suidas, *Lexicon*, A. Adler ed., 4 vols (Leipzig 1928-35).
- Symmachus, *Epistolarum Libri Decem* in Migne, *PL* 18.141-405.
- Tacitus, *Agricola*, J. Delz, ed. (Teubner, 1983).
- _____. *Annales*, H. Heubner, ed. (Teubner, 1983).
- _____. *Dialogus de Oratoribus*, A. Gudeman, ed. (Boston, 1894).
- _____. *Germania*, A. Önnersfors, ed. (Teubner, 1983).
- _____. *Historiæ*, H. Heubner, ed. (Teubner, 1978).

Theophrastus, *De Causis Plantarum*, B. Einarson and G.K.K. Link edd., 3 vols (Cambridge, Mass. 1976-90).

_____, *Historia Plantarum*, A. Hort ed., 2 vols (Cambridge, Mass. 1916).

Thucydides, *Historiae*, H.S. Jones and J.E. Powell edd. 2 vols. (Oxford 1942).

Varro, *De Lingua Latina*, R.G. Kent ed., 2 vols. (Cambridge, Mass. 1938).

_____, *Res Rusticae*, G. Goetz ed., (Leipzig 1912).

Velleius Paterculus, *Res Gestae Divi Augusti*, F.W. Shipley ed., (Cambridge, Mass. 1924).

Vergil, *Aeneid, Eclogae, Georgica*, A. Hirtzel ed., (Oxford 1900).

Vitruvius, *De Architectura*, F. Krohn ed., (Leipzig 1912).

Reference works:

André, J. *Lexique des termes de botanique en Latin* (Paris, 1956).

D'Arcy Thompson. *A Glossary of Greek Fishes* (London, 1947).

Daremberg, C. and Saglio, E., eds. *Dictionnaire des antiquités grecques et romaines* (Paris, 1877-1919). 9 volumes in 5.

Dezobry and Bachelet. *Dictionnaire général de biographie et d'histoire* (Paris, 1922).

Dictionary of Scientific Biography (New York, 1970-80). 16 volumes.

Encyclopædia Britannica, eleventh edition.

Grant, M. G. *Greek and Latin Authors 800 BC-AD 1000* (New York, 1980).

The Jewish Encyclopædia (New York-London, 1912).

Lemprière, J. *Bibliotheca Classica* (London, 1792).

*Oxford Classical Dictionary*² (Oxford, 1970).

Pauly-Wissowa. *Real-Encyclopædie des classischen Altertumswissenschaft* (Stuttgart, 1894-).

Prosopographia Imperii Romani (Berlin-Leipzig, 1933-). In progress.

Richardson, L. . *A New Topographical Dictionary of Ancient Rome* (Baltimore-London, 1992).

Smith, W., Wayte, W., and Marindin, G. E. eds. *Dictionary of Greek and Roman Biography and Mythology*³, 2 volumes (London, 1890-1).

_____. *Dictionary of Greek and Roman Antiquities*, 2 volumes (London, 1890-1).

Secondary sources:

- Adcock, F. E. *Cæsar as a Man of Letters* (Cambridge, 1956).
- Alföldy, G. *Die Hilfstruppen der römischen Provinz Germania Inferior* (Dusseldorf, 1968).
- _____. *Fasti Hispanienses* (Wiesbaden, 1969).
- Aly, F. *Zur Quellenkritik des älteren Plinius* (Marburg, 1885).
- Aly, W. *Quellen des Plinius in VIII Buch* (Marburg, 1882).
- Anderson, J. C. *The Historical Topography of the Imperial Fora* (Brussels, 1984).
- Anderson, J. K. *Xenophon* (London, 1974).
- André, J. 'Pline l'ancien, botaniste', *Revue des études latines*, 33 (1955): 297-318.
- _____. 'Erreurs de traduction chez Pline l'ancien', *Revue des études latines*, 37 (1959): 203-215.
- Anonymous. 'Review of Donna: *La lettura di Plinio sulla eruzione vesuviana*', *Bulletin d'Institut historique belge de Rome*, 18 (1937): 263-4.
- Armstrong, L. 'The illustration of Pliny's *Historia Naturalis* manuscripts before 1430', *Journal of the Warburg and Courtauld Institutes*, 46 (1983): 19-39.
- Arnaud, P. 'Une évidence du XIX^e siècle bien problématique: "die Agrippakarte", "Reichsstatistik" et le postulat de la mappemonde officielle de l'empire romain', in Dilke, ed. *Journal of Roman Archæology*, 1 (1988), 93.
- Atkinson, J. E. *A Commentary on Q. Curtius Rufus Historiæ Alexandri Magni Books 3 and 4* (Amsterdam, 1980).
- Aubrion, E. 'La "Correspondance" de Pline le Jeune: problèmes et orientations actuelles de la recherche', *Aufstieg und Niedergang der römischen Welt*, II.33.1: 304-74.
- Aujac, G. 'Greek cartography in the early Roman World', in Harley-Woodward, ed. *The History of Cartography*, q.v.: 161-176.

- Auricchio, F. L. and Capasso, M. 'I rotoli della Villa Ercolanese; dislocazione e ritrovamento', *Cronache Ercolanesi*, 17 (1987): 37-47.
- Axelsson, B. 'Die Synonyme Adulescens und Iuuenis' in *Mélanges de philologie, de littérature et d'histoire anciennes offerts à J. Marouzeau*, (Paris 1948), 7 sq.
- Baldwin, B. *Suetonius, the biographer of the Cæsars* (Amsterdam, 1983).
- Bardon, H. *La littérature latine inconnue*, 2 volumes (Paris, 1952-6).
- _____. 'Les Flaviens et la littérature', in *Atti Congresso Internazionale di Studi Vespasiani*, 2 volumes (Rieti, 1981): 1.175-94.
- Barnes, T. D. *Tertullian, an historical and literary study* (Oxford, 1971).
- Barrett, A. A. *Caligula; the corruption of power* (London, 1989).
- Beagon, M. *Roman Nature, the thought of Pliny the Elder*, (Oxford 1992).
- Bellido, A. G. Y. 'Die Latinisierung Hispaniens', *Aufstieg und Niedergang der römischen Welt*, I.1: 462-500.
- Berthet, J. F. 'Sénèque, lecteur d'Horace d'après les Lettres à Lucilius', *Latomus*, 38 (1979): 940-54.
- Bickerman, E. J. *Chronology of the Ancient World* (London, 1968).
- Bigelow, J. 'On the death of Pliny the Elder', *Memoirs of the American Academy of Arts and Sciences*, 6 (1858): 223-7.
- Bilde, P. *Flavius Josephus between Jerusalem and Rome*, = *Journal for the Study of the Pseudepigrapha*, supplement 2 (Sheffield, 1988).
- Bird, D. G. 'Pliny and the gold mines of the North West of the Iberian peninsula', in Blagg-Jones-Keay: *Papers in Iberian Archæology*, q.v. 341-63.
- Birley, A. R. *The Fasti of Roman Britain* (Oxford, 1981).
- Birley, E. 'The Flavian Colonia at Scupi', *Zeitschrift für Papyrologie und Epigraphik*, 64 (1986): 209-16.
- _____. *The Roman Army* (Amsterdam, 1988).
- _____. *Roman Britain and the Roman Army* (Kendal, 1953).
- Birley, E. and Dobson, B. *Roman Frontier Studies 1969* (Cardiff, 1974).

- Birt, T. *Die Buchrolle in der Kunst* (Leipzig, 1907).
- Bishop, M. C. 'Cavalry equipment of the Roman army in the first century AD', in Coulston, ed., *Military Equipment*, 67-195.
- Blagg, T. F. C., Jones, R. F. J., and Keay, S. J., eds., *Papers in Iberian Archaeology*, part 1 (Oxford, 1984) = *BAR International Series* 193(i).
- Bloemers, J. H. F., 'Acculturation in the Rhine/Meuse basin in the Roman period', in R. Brandt and J. Slofstra, eds., *Roman and Native in the Low Countries* (Oxford, 1983), 159-209 = *BAR International Series* 184.
- Blagg, T. and Millet, M., eds. *The Early Roman Empire in the West* (Oxford, 1990).
- Blok, P. J. *History of the People of the Netherlands*, 5 parts (New York, 1898-1912).
- Bogaers, J. E. 'Enige opmerkingen over het Nederlandse gedeelte van de Limes van Germania Inferior', *Berichten van de Rijksdienst voor het oudheid kundig Bodemonderzoek*, 17 (1967): 99-114.
- Bömer, F. 'Der Commentarius', *Hermes*, 81 (1953): 210-50.
- Bonner, S. F. *Education in Ancient Rome* (London, 1977).
- Bosworth, A. B. 'Vespasian and the provinces. Some problems of the early 70s AD', *Athenæum*, 51 (1973): 49-78.
- Braccesi, L. 'Plinio storico', in *Como*, q.v. 53-82.
- Brandt, R. 'A brief encounter along the northern frontier', in Brandt and Slofstra, eds., *Roman and Native in the Low Countries* (Oxford, 1983), 129-143 = *BAR International Series* 184.
- Brendel, O. J. *Symbolism of the Sphere* (Leiden, 1977).
- Brion, M. *Pompeii and Herculaneum* (London, 1960).
- Brunn, H. *De auctorum indicibus Plinianis disputatio isagogica* (Bonn, 1856).
- Brunt, P. A. 'Tacitus on the Batavian revolt', *Latomus*, 19 (1960): 494-517.
- Buecheler, F. 'Coniectanea', *Rheinisches Museum*, 37 (1882): 321-42.

- Burton, G. P. 'Provincial procurators and the public provinces', *Chiron*, 23 (1993): 13-28.
- Byvanck, A. W. *Nederland in den Romeinischen Tijd*, 2 volumes (Leiden, 1945).
- Cambridge History of Classical Literature*, E. J. Kenney and W. V. Clausen, eds. (Cambridge, 1982). Volume 2.
- Campbell, D. J. *C. Plinii Secundi naturalis historiae liber secundus* (Aberdeen, 1936).
- Canfora, L. *The Vanished Library* (London, 1989).
- Carcopino, J. *Daily Life in Ancient Rome*, H. T. Rowell, ed. (London, 1941).
- Casson, L. *Ships and Seamanship in the Ancient World* (Princeton, 1971).
- _____. *Travel in the Ancient World* (London, 1974).
- Cheesman, G. L. *The Auxilia of the Roman Imperial Army* (Oxford, 1914).
- Chevallier, R. 'Pline l'Ancien et la Narbonnaise', *Revue Belge de Philologie et d'Histoire*, 60 (1982): 136-62.
- _____. 'Prémices d'une géographie littéraire de l'Italie antique: l'Italie dans le livre III de l'Histoire Naturelle', in *Mélanges P. Boyancé* (Rome, 1974): 181-204.
- Chilver, G. E. F. *Cisalpine Gaul* (Oxford, 1941).
- Ciaceri, E. *Ricerca sulla storia e sul diritto Romano* (Rome, 1918).
- Cichorius, C. *Römische Studien: historisches, epigraphisches, literargeschichtliches aus vier Jahrhunderten Roms* (Leipzig, 1922).
- Clark, J. W. *The Care of Books* (Cambridge, 1901).
- Clarke, M. L. *Higher Education in the Ancient World* (London, 1971).
- Clifford, J. L. *Dictionary Johnson* (New York, 1979).
- Colledge, M. A. R. *The Parthians* (London, 1967).
- Como. *Plinio il Vecchio sotto il profilo storico e letterario*, = *Atti del convegno di Como* (1979) and *Atti della tavola rotonda, Bologna* (1979) (Como, 1982).

- Conole, P. and Jones, B. W. 'Sallustius Lucullus', *Latomus*, 42 (1983): 629-33.
- Conole, P. and Milns, R. D. 'Neronian frontier policy in the Balkans: the Career of Ti. Plautius Silvanus', *Historia*, 32 (1983): 183-200.
- Coulson, W. D. E. *Studies in Chapters 34 and 36 of Pliny the Elder's Natural History*, unpublished PhD thesis (Princeton Univ., 1968).
- _____. 'The reliability of Pliny's chapters on Greek and Roman sculpture', *Classical World*, 69 (1975-6): 361-72.
- Courtney, E. *A Commentary on the Satires of Juvenal* (London, 1980).
- Crook, J. *Consilium Principis* (Cambridge, 1955).
- Culham, P. 'Archives and alternatives in republican Rome', *Classical Philology*, 84 (1989): 100-15.
- D'Arms, J. *Romans on the Bay of Naples* (Cambridge, Mass., 1970).
- Davies, R. W. *Service in the Roman Army* (Edinburgh, 1989).
- Debevoise, N. C. *A Political History of Parthia* (New York, 1968).
- Della Casa, A. 'Pomponio Secondo, tragediografo', *Dioniso*, 35 (1961): 58-75.
- _____. *Il Dubius Sermo di Plinio* (Genoa, 1969).
- Demangeon, A. *Belgique-Pays Bas-Luxembourg* (Paris, 1927) = *Géographie universelle*, P. Vidal de la Blache and L. Gallois, eds., volume 2.
- Démougin, S. *L'ordre équestre sous les Julio-Claudiens* (Rome, 1988) = *Collections de l'école française de Rome* 108.
- De Nardis, M. 'Seneca, Plinio e la spedizione neroniana in Etiopia', *Ægyptus*, 69 (1989): 123-52.
- Desanges, J. 'Echinades ou Sporades? Pline l'Ancien (IV.53), lecteur distrait de Méla (III.111)', *Cahiers d'histoire*, 3 (1988): 345-60.
- Detlefsen, D. *Untersuchungen über die Zusammensetzung der Naturgeschichte des Plinius* (Berlin, 1899).
- Devijver, H. *Prosopographia Militiarum Equestrum Quæ Fuerunt ab Augusto ad Gallienum*, 3 volumes (Leuven, 1976-80).

- _____. 'Les "militiæ equestres" de P. Helvius Pertinax', *Zeitschrift für Papyrologie und Epigraphik*, 75 (1988): 207-14.
- _____. 'The monument of the equestrian officer T. Iunius Montanus (AIJ 173-Emona)' *Ancient Society* 23 (1992), 61-70.
- _____. *The Equestrian Officers of the Roman Imperial Army* (Amsterdam, 1989).
- Dihle, A. *Greek and Latin Literature of the Roman Empire* (London, 1994).
- Dilke, O. A. W. *The Roman Land Surveyors* (Newton Abbot, 1971).
- _____. *Greek and Roman Maps* (London, 1985).
- _____. 'Maps in the service of the state', in Harley and Woodward, eds. *The History of Cartography* q.v. 201-11.
- _____. 'Itineraries and geographical maps in the early and late Roman Empire', in Harley and Woodward, eds. *The History of Cartography* q.v. 234-57.
- Dion, R. 'Rhenus bicornis', in *Revue des études latines*, 42 (1962): 469-99.
- Dix, T. K. *Private and Public Libraries at Rome in the First Century BC: a preliminary study in the history of Roman Libraries*, unpublished PhD thesis (Univ. of Michigan, 1986).
- Dobson, B. 'Legionary centurion or equestrian officer? A comparison of pay and prospects', *Ancient Society* 3 (1972), 193-207.
- Dorandi, T. 'Commentarii Opisthographi (Plin. III.5.17)', *Zeitschrift für Papyrologie und Epigraphik*, 65 (1986): 71-5.
- _____. 'Glutinatores', *Zeitschrift für Papyrologie und Epigraphik*, 50 (1983): 25-8.
- Eck, W. 'Jahres- und Provinzialfasten der senatorischen Statthalter von 69/70 bis 138/139', *Chiron*, 12 (1982): 281-362.
- _____. *Senatoren von Vespasien bei Hadrian* (Munich, 1970).
- Etienne, R. *La culte impériale dans la péninsule ibérique d'Auguste à Dioclétien* (Paris, 1958).

- Ferguson, J. *A Prosopography to the poems of Juvenal*, = *Collection Latomus*, volume 20 (Brussels, 1987).
- Ferraro, V. 'Il numero delle fonti dei volumi et dei fatti della *Naturalis Historia* di Plinio', *Annali della Scuola Normale Superiore de Pisa Series 3*, vol. 5.1 (Pisa, 1975): 519-33.
- Franchet D'Espérey, S. 'Vespasien, Titus et la littérature', *Aufstieg und Niedergang der römischen Welt*, II.32.5: 3048-86.
- Frederiksen, M. 'Plinio il Vecchio e l'agricoltura in età imperiale romana: gli aspetti tecnici e economici', in *Como*, q.v. 81-97.
- French, P. J. *John Dee* (London, 1972).
- French R. and Greenaway, F. *Science in the Early Roman Empire: Pliny the Elder, his Sources and Influence* (London-Sydney, 1986).
- Frier, B. W. *Libri Annales Pontificum Maximorum* (Rome, 1979).
- Gallivan, P. 'The Fasti for AD 70-96', *Classical Quarterly*, 31 (1981): 186-220.
- Gallo, I. *Greek and Latin Papyrology* (London, 1986).
- Gascou, J. *Suétone historien* (Rome, 1984).
- Gibbs, S. L. *Greek and Roman Sun-Dials* (New Haven, Conn., 1976).
- Gigante, M. 'La biblioteca di Filodeme', *Cronache Ercolanesi*, 15 (1985): 5-30.
- _____. *La bibliothèque de Philodème et l'épicurisme romain* (Paris, 1987).
- Goody, J. *The Domestication of the Savage Mind* (Cambridge, 1977).
- Gothot-Mersch, C. *Lire Simenon* (Brussels, 1980).
- Griffin, M. T. *Seneca, a Philosopher in Politics* (Oxford, 1976).
- _____. *Nero, the End of a Dynasty* (London, 1984).
- Grisé, Y. 'L'illustre mort de Pline le naturaliste', *Revue des études latines*, 58 (1980): 338-43.
- _____. *La suicide dans la Rome antique* (Paris, 1982).

- Grmek, M. D. 'Les circonstances de la mort de Pline. Commentaire médical d'une lettre destinée aux historiens', *Helmantica*, 37 (1986): 27-43.
- Gwatkin, W. E. 'Cappadocia as a Roman procuratorial province', = *University of Missouri Studies*, 5 (1930). Number 4.
- Hall, J. J. 'Seneca as a source for earlier thought', *Classical Quarterly*, 27 (1977): 409-36.
- Harley, J. B. and Woodward, D., eds. *The History of Cartography* (Chicago-London, 1987). Volume 1.
- Harmand, J. *L'armée et le soldat à Rome* (Paris, 1967).
- Harris, W. V. *Ancient Literacy* (Cambridge, Mass., 1989).
- Hart, L. *T. E. Lawrence* (London, 1936).
- Haywood, R. M. 'The strange death of the Elder Pliny', *Classical World*, 46 (Nov. 1952): 1-3.
- _____. 'Again the death of the Elder Pliny', *Classical World*, 68 (1974-5): 259.
- Healy, J. F. *Mining and Metallurgy in the Greek and Roman World* (London, 1978).
- _____. 'Pliny on mineralogy and metals', in French and Greenaway, eds., *Science in the Early Roman Empire* (London, 1986): 111-146.
- _____. 'The language and style of Pliny the Elder' in *Filologia e Forme Letterarie: Studi offerti a Francesco della Corte*, (Urbino 1988), IV 3-24.
- _____. *Miniere e Metallurgia nel Mondo Greco e Romano*, (Rome 1991).
- _____. *Pliny the Elder, Natural History: a selection*, (London 1991).
- Helmbold, W. C. and O'Neil E. N. *Plutarch's Quotations* (Baltimore, 1959).
- Henderson, B. W. 'The Chronology of the wars in Armenia, AD 51-63', *Classical Review*, 15 (1901): 159-65, 204-13, 266-74.
- Henderson, M. I. 'Julius Cæsar and *Latium* in Spain', *Journal of Roman Studies*, 32 (1942): 1-13.

- Hendriks, I. H. M. 'Pliny, *Historia Naturalis* XIII, 74-82, and the manufacture of papyrus', *Zeitschrift für Papyrologie und Epigraphik* 37 (1980): 121-36.
- Henig, M., ed. *A Handbook of Roman Art* (London, 1983).
- Herescu, N. I. 'Le mode de composition des écrivains ('dictare')', *Revue des études latines*, 34 (1956): 132-46.
- Hine, H. M. *An Edition with Commentary of Seneca Natural Questions Book Two* (Salem, Mass., 1984).
- Hirschfeld, O. *Die Kaiserliche Verwaltungsbeamten bis auf Diocletian²* (Berlin, 1905).
- Hofmann, J. B., and Szantyr, A., eds. *Lateinische Sytanx und Stilistik* (Munich, 1965).
- Holder, A. *Alt-Celtischer Sprachschatz*, 3 volumes (Leipzig, 1896-1913).
- Holder, P. A. *Studies in the Auxilia of the Roman Army from Augustus to Trajan*, = *BAR International Series*, 70 (Oxford, 1980).
- _____. *The Roman Army in Britain* (London, 1982).
- Holford-Strevens, L. *Aulus Gellius* (London, 1988).
- Holtz, L. 'Pline et les grammairiens; le *Dubius Sermo* dans le haut moyen âge', in *Nantes*, q.v. 549-63.
- Homo, L. P. *Roman Political Institutions, from City to State* (London, 1962).
- Horsfall, N. 'Doctus sermones utriusque linguæ', *Échos du monde classique*, 23.3 (1979): 79-95.
- _____. 'The origins of the illustrated book', *Ægyptus*, 63 (1983): 199-216.
- Hoyos, B. D. 'Pliny the Elder's titled Bætican towns: obscurities, errors and origins', *Historia*, 28 (1979): 439-69.
- Isaac, B. *The Limits of Empire²* (Oxford, 1992).
- Isager, J. *Pliny on Art and Society* (London, 1991).
- Jackson, R. *Doctors and Diseases in the Roman Empire* (London, 1988).
- Janson, T. *Latin Prose Prefaces* (Stockholm, 1964).

- Jenkins, I. 'A group of silvered-bronze horse trappings from Xanten (Castra Vetera)', *Britannica*, 16 (1985): 141-64.
- Jex-Blake, K. and Sellers, E. *The Elder Pliny's Chapters on the History of Art* (Chicago, 1976).
- Jocelyn, H. D. 'The Annotations of M. Valerius Probus', *Classical Quarterly*, 34 (1984): 464-472.
- Johnson, A. *Roman Forts of the 1st and 2nd centuries AD in Britain and the German provinces* (London, 1983).
- Johnson, D. 'The Manuscripts of Pliny's Letters', *Classical Philology*, 7 (1912): 66-75.
- Johnson, E. D. *A History of Libraries in the Western World²* (Metuchen, 1970).
- Jones, A. H. M. *The Cities of the Eastern Roman Provinces²* (Oxford, 1971).
- Jones, B. W. *The Emperor Titus* (Croom Helm, 1984).
- Jones, C. P. 'A New Commentary on the Letters of Pliny', Review of Sherwin-White, *Phœnix*, 22 (1968): 111-142.
- Keaney, J. J. 'Alphabetisation in Harpocraton's Lexicon', *Greek, Roman and Byzantine Studies* 14 (1973): 415-23.
- Kennedy, G. *Quintilian* (New York, 1969).
- Kenyon, F. 'The Library of a Greek of Oxyrhynchus', *Journal of Egyptian Archæology*, 8 (1922): 129-38.
- Keppie, L. *The Making of the Roman Army* (London, 1984).
- Kleve, K. 'Lucretius in Herculaneum', *Cronache Ercolanesi*, 19 (1989): 5-27.
- Kleve, K. and Stoermer, F. C. 'On the excavation and preservation of the Herculaneum rolls', *Cronache Ercolanesi*, 7 (1977): 126.
- Knox-M^cElderry, R. 'Vespasian's reconstruction of Spain', *Journal of Roman Studies*, 8 (1918): 53-102.
- Koestermann, E. *Tacitus Annalen*, 4 volumes (Heidelberg, 1963-8).
- König, R. and Winkler G. *Plinius der Altere* (Munich, 1979).

- Kostomitsopoulos, P. 'The Sources of Pliny's Nat. Hist. 34.14', *Eirene*, 20 (1983): 97-100.
- Köves-Zulauf, Th. *Reden und Schweigen* (Munich, 1972).
- _____. 'Plinius der ältere und die römische Religion', *Aufstieg und Niedergang der römischen Welt*, II.16.1: 187-288.
- _____. 'Die Vorrede der plinianischen Naturgeschichte', *Wiener Studien* 86 (1973): 134-84.
- Kühner, R. and Stegmann, C. *Ausführliche Grammatik des Lateinischen Sprache*, 2 volumes (Hanover, 1955).
- Lammert, F. *Die römische Taktik zu Beginn der Kaiserzeit und die Geschichtschreibung*, *Philologus*, supplement 23: 2 (Leipzig, 1931).
- Leary, T. J. 'Ovid and the Elder Pliny', *Liverpool Classical Monthly*, 14 (May 1989): 69-70.
- Le Bonniec, M. H. 'L'apport personnel de Pline dans le Livre XVIII de l'Histoire Naturelle', = *Actes du Congrès de l'Association G. Budé*, (1984): 81-8.
- Lefèvre, E. *Das Bild-Programm des Apollo-Tempels auf dem Palatin* (Konstanz, 1989).
- Le Glay, M. 'Les Flaviens et l'Afrique', in *Mélanges d'Archéologie et d'Histoire de l'École Française de Rome*, 80 (1968): 201-46.
- _____. 'A la recherche d'Icosium', *Antiquités Africaines* 2 (1968), 7-54.
- Lepage, Y. G. 'Cicéron devant la mort de Tullia d'après sa correspondance', *Les Études Classiques* 44 (1976), 245-58.
- Le Roux, P. *L'Armée romaine et l'organisation des provinces ibérique d'Auguste à l'invasion de 409* (Paris, 1982).
- Levick, B. *The Government of the Roman Empire: A Sourcebook* (London, 1985).
- _____. *Claudius* (London, 1990).
- Lewis, N. and Reinhold, M. *Roman Civilisation: selected readings* (New York, 1959).

- Lewis, P. R. and Jones, G. D. B. 'Roman gold-mining in North-West Spain', *Journal of Roman Studies*, 60 (1970): 169-85.
- Lewis, R. G. 'Imperial autobiography, Augustus to Hadrian', *Aufstieg und Niedergang der römischen Welt*, II.34.1: 629-706.
- Linderski, J. 'The Libri Reconditi', *Harvard Studies in Classical Philology*, 89 (1985): 207-34.
- Ling, R. 'Studies and the beginnings of Roman landscape painting', *Journal of Roman Studies*, 67 (1977): 1-16.
- Lipscomb, H. C. 'The Strange Death of the Elder Pliny', *Classical Weekly*, 47 (1954): 74.
- Lounsbury, R. C. *The Arts of Suetonius* (New York, 1987).
- Luce, T. J. *Livy: The Composition of His History* (Princeton, 1977).
- MacKendrick, P. *The Philosophical Books of Cicero* (London, 1989).
- Mackie, N. *Local Administration in Roman Spain, AD 14-212*, = *BAR International Series*, 172 (Oxford, 1983).
- Maguinness, W. S. 'Seneca and the Poets', *Hermathena*, 88 (1956): 81- 98.
- Makowiecka, E. *The Origin and Evolution of Architectural Form of [the] Roman Library*, = *Studia Antiqua* (Warsaw, 1978).
- Manfredi, M. 'Opistografo', *La Parola del Passato*, 38 (1983): 44-54.
- Marquardt, J. *Das Privatleben der Römer²* (Leipzig, 1886).
- Marrou, H. I. *Histoire de l'éducation dans l'antiquité* (Paris, 1948).
- Marshall, A. J. 'Library Resources and Creative Writing at Rome', *Phoenix*, 30 (1976): 252-64.
- Marshall, B. A. 'Excepta Oratio, the other *Pro Milone* and the question of shorthand', *Latomus* 46 (1987): 730-6.
- Maslakov, G. 'Valerius Maximus and Roman historiography: a study of the *exempla* tradition', *Aufstieg und Niedergang der römischen Welt*, II.32.1: 437-96.
- Mazzoli, G. *Seneca e la poesia* (Milan, 1970).

- Mehl, A. 'Kaiser Claudius und der Feldherr Corbulo bei Tacitus und Cassio Dio. Mit einem Anhang: Ist der ältere Plinius die Quelle beider Autoren?', *Hermes*, 107 (1979): 220-39.
- Meiggs, R. *Roman Ostia*² (Oxford, 1973).
- Meijer, F. *A History of Seafaring in the Classical World* (London, 1986).
- Millar, F. G. B. *A Study of Cassius Dio* (Oxford, 1964).
- Miller, F. 'Some evidence of the meaning of Tacitus, Annals XII. 60', in *Historia*, 13 (1964): 180-7.
- Mommsen, T. *Römisches Staatsrecht* (Leipzi, 1871).
- Morgan, J. *Agatha Christie* (London, 1984).
- Motto, A. L. *Guide to the Thought of Lucius Annæus Seneca* (Amsterdam, 1970).
- Mrozewicz, L. 'Przesiedlenia Indnoiciowe na Rzymska strone Rem i Duniyu w okresie wczesnego cesarstwa', *Eos*, 75 (1987): 107-28.
- Münzer, F. *Beiträge zur Quellenkritik der Naturgeschichte des Plinius* [Berlin, 1897] (reprinted: Hildersheim, 1988).
- _____. 'Die Quelle des Tacitus für die Germanienkriege', *Bonner Jahrbücher*, 104 (1899): 67-111.
- Naiditch, P. 'De ficis Africanis', *Hermes*, 105 (1977): 249-51.
- Nailis, C. 'Studie over de chronologie van het leven en de werken van Plinius den Naturalist', *Philologische Studien te Leuven*, 13/14 (1942-3): 1-23, 25-77.
- Nantes, *Pline l'Ancien, témoin de son temps*, J. Pigeaud and J. Orozio, eds. (Salamanca-Nantes, 1987).
- Notopoulos, J. A. 'Mnemosyne in oral literature', *Transactions and Proceedings of the American Philological Association*, 69 (1938): 465-93.
- Oehmichen, G. *Plinianische Studien zur geographischen und kuntshistorischen Literatur* (Eerlangen, 1880).
- Ogilvie, R. M. *A Commentary on Livy, Books 1-5* (Oxford, 1965).
- _____. *The Library of Lactantius* (Oxford, 1978).

- Otto, W. 'Zur Lebenszeit des P. Pomponius Secundus', *Philologus*, 90 (1935): 483-94.
- Parker, H. M. D. *The Roman Legions* (Oxford, 1928).
- Pascucci, G. 'La lettera prefatoria di Plinio alla *Naturalis Historia*', in *Como* (q.v.): 171-97.
- Pavis d'Escurac, H. 'Irrigation et vie paysanne dans l'Afrique du Nord antique', *Ktema* 5 (1980), 177-91.
- Pelling, C. B. R. 'Plutarch's method of work in the Roman Lives', *Journal of Hellenic Studies*, 99 (1979): 74-96.
- Pfeiffer, H. F. 'The Roman Library at Timgad', *Memoirs of the American Academy in Rome*, 9 (1931): 157-65 and plates, 16-19.
- Pfeiffer, R. C. F. *The History of Classical Scholarship from the beginnings to the end of the Hellenistic Age* (Oxford, 1968).
- Pflaum, H. G. *Abrégé des procurateurs équestres* (Paris, 1974).
- _____. *Les fastes de la province de Narbonnaise* (Paris, 1978).
- _____. *Les procurateurs équestres sous le haut-empire romain* (Paris, 1950).
- _____. *Les carrières procuratoriennes équestres sous le haut-empire romain*, 4 volumes in 3 (Paris, 1960-1).
- Platner, S. B and Ashby T. *A Topographical Dictionary of Ancient Rome* (Oxford, 1929).
- Rabenhorst, M. *Der ältere Plinius als Epitomator des Verrius Flaccus* (Berlin, 1907).
- Raepsaet-Charlier, M. T. 'Germania Inferior et Germania Superior', *Latomus* 32 (1937), 158-61.
- Radnoti, A. 'Legionen und Auxilien am Oberrhein im 1 Jh. n. Chr.', in Birley, Dobson, Jarrett, eds., *Roman Frontier Studies 1969* (Cardiff, 1974): 138-55.
- Rawson, E. 'Prodigy lists and the use of the *Annales Maximi*', *Classical Quarterly*, 21 (1971): 158-69.
- _____. *Cicero, a portrait* (London, 1975).
- _____. *Intellectual life in the late Roman Republic* (London, 1985).

- Reddé, M. *Mare Nostrum* (Rome, 1986).
- Reece, R. 'Art in late antiquity', in Henig, ed., *Handbook of Roman Art* q.v. 234-48.
- Reed, N. 'Some neglected evidence on the early career of Tacitus', *Classical Quarterly* 26 (1976), 309-14.
- Reinhold, M. *Marcus Agrippa* (New York, 1933).
- Reynolds, J. 'The Elder Pliny and his time', in French, Greenaway, eds., *Science in the Early Roman Empire* q.v. 1-10.
- Reynolds, L. D. 'The Elder Pliny', in his *Texts and Transmission* (Oxford, 1983): 307-16.
- _____. *Texts and Transmission* (Oxford, 1983).
- Reynolds, L. D. and Wilson, N. G. *Scribes and Scholars*³ (Oxford, 1991).
- Richardson, L. 'The libraries of Pompeii', *Archæology*, 30:6 (1977): 394-402.
- Richmond, J. A. 'Pliny's catalogue of fishes', *Hermes*, 99 (1971): 135-41.
- Richmond, O. L. 'The Augustan Palatium', *Journal of Roman Studies*, 4 (1914): 193-226.
- Rivet, A. L. F. *Gallia Narbonensis* (London, 1988).
- Roddaz, J. M. *Marcus Agrippa* (Rome, 1984).
- Rogers, R. S. 'The Neronian Comets', *Transactions and Proceedings of the American Philological Association*, 84 (1953): 237-49.
- Romm, J. S. *The Edges of the Earth in Ancient Thought* (Princeton, 1992).
- Rosbach, O. 'Agroëcius et Plinius de Delphica', *Rheinisches Museum*, 57 (1902): 473-4.
- Rubincam, C. I. R. 'Cross-references in the *Bibliothèque Historique* of Diodoros', *Phœnix*, 43 (1989): 39-61.
- Ruch, M. *L'Hortensius de Cicéron* (Paris, 1958).
- Russel, D. A. *Plutarch* (London, 1973).
- Rutherford, R. B. *The Meditations of Marcus Aurelius* (Oxford, 1989).

- Saddington, D. B. 'A new Julio-Claudian Auxiliary Decurion?',
Zeitschrift für Papyrologie und Epigraphik, 68 (1987): 261-2.
- Saenger, P. 'Silent reading: its impact on late Mediaeval script and society',
Viator, 13 (1982): 367-414.
- Saller, R. P. 'Promotion and patronage in the equestrian careers',
Journal of Roman Studies, 70 (1980): 44-63.
- _____. *Personal Patronage under the Early Empire* (Cambridge, 1982).
- Sallmann, K. 'Der Traum des Historikers: Zu den 'Bella Germaniæ' des Plinius und zur julisch-claudischen Geschichtsschreibung',
Aufstieg und Niedergang der römischen Welt, II.32.1: 578-601.
- Salway, P. *Roman Britain* (Oxford, 1981).
- Samuel, A. E. *Greek and Roman Chronology* (Munich, 1972).
- Santini, C. and Scriverletto, N., eds. *Prefazioni, prologhi, proemi di opere tecnico-scientifiche Latine*, vol. 1 (Rome, 1990).
- Schaaber, O. 'Überlegungen zur Deutung des Plinius-Angaben über das Eisen aufgrund metallkundlicher Fundunterduschungen',
Jahreshefte des Österreichischen Archäologischen Instituts 51 (1976-77): 85-105.
- Schanz, M. von. *Geschichte der römischen Litteratur bis zum Gesetzgebungswerk des Kaisers Justinian*, K. Hosius, ed., 4 volumes in 5 (Munich, 1914-35).
- Sharples, R. W. and Minter, D. W. 'Theophrastus on fungi: inaccurate citations in Athenæus', *Journal of Hellenic Studies* 103 (1983): 154-6.
- Schönberger, H. 'The Roman frontier in Germany: an archaeological survey', *Journal of Roman Studies* 59 (1969), 144-97.
- Schove, D. J. *Chronology of Eclipses and Comets AD 1 to 1000* (Boydell Press, 1984).
- Scramuzza, V. M. *The Emperor Claudius* (Cambridge, Mass., 1940).
- Segre, M. 'Epigraphica', *Rivista di Filologia e d'instruzione classica*, 13 (1934): 214-25.

- Serbat, G. 'Pline l'Ancien: état présent des études sur sa vie, son œuvre et son influence', *Aufstieg und Niedergang der römischen Welt*, II.32.4: 2069-2200.
- Setaioli, A. 'Esegesi virgiliana in Seneca', *Studi italiani di filologia classica*, 37 (1965): 133-56.
- _____. *Seneca e i Greci* (Bologna, 1988).
- Shaw, B. D. 'The Elder Pliny's African Geography', *Historia*, 30 (1981): 424-71.
- Sherk, R. K. 'Roman geographical exploration and military maps', *Aufstieg und Niedergang der römischen Welt*, II.1: 534-62.
- Sherwin-White, A. N. 'Procurator Augusti', *Papers of the British School at Rome*, 15 (1939): 11-26.
- _____. *The Letters of Pliny* (Oxford, 1966).
- _____. *The Roman Citizenship²* (Oxford, 1973).
- Silberman, A. 'Le premier ouvrage Latin de géographie: la chorographia de Pomponius Méla et ses sources grecques', *Klio*, 71 (1989): 571-81.
- Skeat, T. C. "'Especially the parchments": a note on 2 Timothy IV.13', *Journal of Theological Studies* 30 (1979): 173-7.
- _____. 'The length of the standard papyrus roll and the cost-advantage of the codex', *Zeitschrift für Papyrologie und Epigraphik* 45 (1982): 169-75.
- _____. 'The use of dictation in ancient book production', *Proceedings of the British Academy*, 42 (1956): 179-208.
- Skydsgaard, J. E. *Varro the Scholar. Studies in the first book of Varro's De re rustica* (Hafniae, 1968).
- Smallwood, E. M. *Documents illustrating the Principates of Nero, Trajan and Hadrian* (Cambridge, 1966).
- Speidel, M. P. *Roman Army Studies*, volume 2 (Stuttgart, 1992).
- _____. *The Framework of an Imperial Legion* (National Museum of Wales, 1992).
- Stanley, F. H. 'Roman education: observations upon the Iberian experience', *Revue des études anciennes*, 93 (1991): 299-320.

- Starkenstein, E. 'Der Tod des Plinius', *Archiv für Geschichte der Medizin*, 22 (1929): 205-213.
- Starr, C. G. *The Roman Imperial Navy* (New York, 1941).
- Starr, R. J. 'Cross-references in Roman prose', *American Journal of Philology*, 102 (1981): 431-7.
- _____. 'The circulation of literary texts in the Roman world', *Classical Quarterly*, 37 (1987): 213-23.
- _____. 'The used book trade in the Roman Empire', *Phœnix*, 44 (1990): 148-61.
- Stevenson, E. L. *Terrestrial and Celestial Globes* (New Haven, Conn., 1921).
- Strocka, V. M. 'Römisches Bibliotheken', *Gymnasium*, 88 (1981): 298-329.
- Suolahti, J. *The Roman Censors* (Helsinki, 1963).
- Süss, W. *Cicero: eine Einführung in seine philosophischen Schriften* (Mainz, 1966).
- Syme, R. Review of Spadaccini: 'Una vittima minor dell' eruzione vesuviana del 79 AD', *Classical Review*, 51 (1937): 202.
- _____. 'Deux proconsulats d'Afrique', *Revue des études anciennes*, 58 (1956): 236-40.
- _____. *Tacitus*, 2 volumes (Oxford, 1958).
- _____. 'Marriage ages for Roman senators', *Historia*, 36 (1987): 318-32.
- _____. *Roman Papers*, volumes 1 (1979) and 2 (1979), E. Badian, ed.; volumes 3 (1984), 4 (1988), 5 (1988), 6 (1991), 7 (1991), A. R. Birley, ed. (Oxford).
- Taylor, L. R. 'On the chronology of Cicero's letters to Atticus, Book XIII', *Classical Philology*, 32 (1937): 228-40.
- Texier, C. *Asie Mineure* (Paris, 1882).
- Thomasson, B. E. *Laterculi Præsidum* (Gothoburg, 1972).
- Thomsen, R. *The Italic Regions* (Copenhagen, 1947).

- Thomson, J. O. *History of Ancient Geography* (Cambridge, 1948).
- Tierney, J. J. 'The map of Agrippa', *Proceedings of the Royal Irish Academy*, 53, section C (1963): 151-66.
- Townend, G. B. 'Some Flavian connections', *Journal of Roman Studies*, 51 (1961): 54-61.
- _____. 'The reputation of Verginius Rufus', *Latomus*, 20 (1961): 337-41.
- _____. 'The sources of the Greek in Suetonius', *Hermes* 88 (1960), 98-120.
- _____. 'Traces in Dio Cassius of Cluvius, Aufidius and Pliny', *Hermes* 89 (1961), 227-48.
- Traub, H. W. 'Pliny's treatment of history in epistolary form', *Transactions of the American Philological Association* 86 (1955), 213-32.
- Trimpe-Burger, J. A. 'The islands of Zeeland and South Holland in Roman times', *Berichten van de Rijksdienst voor het oudheid kundig Bodemonderzoek*, 23 (1973): 135-48.
- Trollope, A. *An Autobiography* (Fontana Library, 1962).
- Turner, E. G. *Greek Papyri* (Oxford, 1968).
- _____. *Greek Manuscripts of the Ancient World* (Oxford, 1971).
- _____. 'The Terms 'Recto' and 'Verso'. The Anatomy of the papyrus roll. = *Papyrologica Bruxellensia*, vol. 16 (1978).
- Van Hoof, J. L. *From Autothanasia to Suicide* (London, 1990).
- Van't Dack, E. 'A studiis—a bybliotheçis', *Historia* 12 (1963), 174-84.
- Varāhamihīra. *Brihat Samhitā*, 2 volumes (Bangalore, 1947).
- Villefosse, H. de. 'Le prétendu squelette de Pline l'ancien', *Bulletin Monumental*, 66 (1902): 82-4.
- Vitelli, C. 'La Consolatio ciceroniana. Cronologia della composizione', *Rendiconti della Classe di Scienze morali, stoiche e filologiche dell'Accademia dei Lincei* 28 (1973), 673-81.

- Vogel-Weidemann, U. 'Q. Vibius Crispus proconsul: eine Notiz zu Plin. *Nat. Hist.* 19.4', *Acta Classica*, 18 (1975): 149-53.
- Wallace-Hadrill, A., ed. *Patronage in Ancient Society* (London, 1989).
- Walsh, P. G. *Livy, His Historical Aims and Methods* (Cambridge, 1961).
- Walter, H. 'An illustrated incunabule of Pliny's Natural History in the Bibliotheca Palatina, Parma', *Journal of the Warburg and Courtauld Institutes*, 53 (1990): 208-16.
- Watkins, T. H. 'Vespasian and the Italic right', *Classical Journal*, 84 (1988-9): 117-36.
- Watson, G. R. *The Roman Soldier* (London, 1969).
- Webster, G. *The Roman Imperial Army* (London, 1969).
- Weitzmann, K. *Illustrations in Roll and Codex* (Princeton, 1947).
- _____. *Ancient Book Illumination* (Cambridge, Mass., 1959).
- Wellmann, M. 'Juba, eine Quelle des Ælian', *Hermes*, 27 (1892): 389-406.
- Welty, J. C. *The Life of Birds*³ (New York, 1982).
- Whatmough, J. *The Dialects of Ancient Gaul* (Cambridge, Mass., 1970).
- White, K. D. *Roman Farming* (London, 1970).
- Wiegels, R. 'Das Datum der Verleihung der ius Latii an die Hispanier: Zur Personal-und Municipalpolitik in den ersten Regierungsjahren Vespanien', *Hermes*, 106 (1978): 196-213.
- Wightman, E. M. *Gallia Belgica* (London, 1985).
- Wilkes, J. W. 'Julio-Claudian Historians', *Classical World*, 65 (1972): 177-203.
- Willems, W. J. H. 'Romans and Batavians', in Brandt-Slofstra, eds., *Roman and Native in the Low Countries* (Oxford, 1983), 105-28 = *BAR International Series* 184.
- Wiseman, T. P., ed. *Roman Political Life 90 BA-AD 69* (Exeter, 1985).
- Woodside, M. St. A. 'Vespasian's Patronage of Education and the Arts', *Transactions and Proceedings of the American Philological Association*, 73 (1942): 123-9.

Yates, F. A. *The Art of Memory* (London, 1966).

Yoke, H. P. 'Ancient and Mediaeval Observations of Comets and Novae in Chinese Sources', *Vistas in Astronomy* 5 (1962): 127-225.

Zecchini, G. 'Plinio il Vecchio e la Lex Flavia Municipalis', *Zeitschrift für Papyrologie und Epigraphik*, 84 (1990): 139-46.

Zehnacker, H. 'La description de Rome dans le livre 3 de la NH', *Helmantica* 37 (1986), 307-20.

_____. 'Pline l'ancien et l'histoire de la monnaie romaine', *Ktema*, 4 (1979): 169-81.

Zirkle, C. 'The Death of Gaius Plinius Secundus (23-79 AD)', *Isis*, 58 (1967): 553-9.