THE BOOK-BOUND SCHOLAR

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Abstract

This paper takes as its starting point Geoffrey Lloyd's comment that the sources for Pliny's *Natural History* are 'overwhelmingly literary'. While the encyclopaedic nature of his project might seem to make this inevitable, it is suggested that there are deeper-seated reasons for Pliny's approach to be found in the attitudes of Rome's cultural élite in the late Republic and early Empire. For this élite, literary culture reflected the socio-political dynamics of their society, while practical investigations of nature, on the other hand, may for the most part have been associated with the negation of these values. The contrast should not be over-emphasised: texts on practical subjects could use and exploit empirical evidence and one or two individual enthusiasts may be tentatively posited. However, the breadth and depth of the literary tradition gave the text an authority denied to the particularities of personal experience.

Introduction

In a standard work on ancient science, Geoffrey Lloyd[1] spoke in disappointed tones of the 'overwhelmingly literary' nature of Pliny's *Natural History*. Information from non-literary sources such as the root-cutters and fishermen Aristotle and Theophrastus often make use of is seldom deployed, authorial autopsy still less often. Even the literary sources consulted are sometimes garbled. The obvious 'let-out' for Pliny, as the author acknowledges, is the nature of his project. Encyclopaedic ventures do not lend themselves to the direct and detailed personal investigation into specifics which modern standards require of the natural scientist; their immense scope alone tends to determine a reliance on secondary sources and they have sometimes been described as condensed or epitomised libraries.[2] However, the shape of the *Natural History* is perhaps misleading in this respect. It does not replicate the library hall with its contents shelved in a manner appropriate to such a building, but presents itself in the form of the universe itself, with a classificatory system based on the *scala naturae*. The reader in effect enters the naturalist's hunting-ground rather than the bookworm's retreat. Add to this an author who expresses his admiration for the *cura* and *diligentia* of the ancients who conducted practical researches (e.g. *HN* 17.42, 23.112, 25.1), and admired the personal engagement of Aristotle (8.43) and Mithridates (25.5) and his critics' frustration is understandable.

Lloyd expressed his regrets in the context of the extent to which the growth of a literary tradition diminished the impulse to the independent research in natural science advocated by Aristotle and Theophrastus: a complex question which, as he suggested, is not easily answered even in the case of sources less obviously dependent than Pliny, such as Celsus and Dioscurides. The topic of this paper is much less ambitious. It will limit itself to attempting to set up some possible lines of investigation based primarily on Pliny and the broader intellectual background of Rome's cultural

[1] Lloyd 1983: 136.

[2] Jacob 2000: 108; Too 2000: 111–23.

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élite in the late Republic and early Empire, with forays into the testimony of the latinate self-professed polymath Apuleius nearly a century after Pliny's time. It will be suggested that there is evidence for a perception among this élite that the investigation of terrestrial nature was shrouded in obscurity and, in some respects disrepute. In this respect it represented a negation of the values of their society, whereas literary culture was moulded in the image of that society's socio-political dynamics. Its texts encapsulated trust, authority, tradition and even friendship, making them both objects of and companions in study. While the dichotomy between text and experience postulated by Lloyd was not as clearly defined as he implied, the former offered a lack of restriction, a cultural corollary of the liberty also enshrined in the aristocratic ethos. Against the narrow particularities of practical investigation, it offered a breadth of vision and a multi-dimensional manifestation of knowledge.

This paper will first consider whether philosophical and practical prejudices encouraged the marginalisation of natural science at Rome. From the philosophical perspective, we find comments, for example in Cicero and Seneca, which suggest that most aspects of natural science were regarded as insufficiently elevating to the spirit. More generally, evidence for practical involvement on the part of the élite is not only scanty, but suggestive of distaste and social marginalisation. We shall then see how this negative picture is partially modified by the tendency in some texts on practical subjects to make use of empirical as well as literary material while, conversely, assimilating themselves to the sophisticated conventions of literary culture. In addition, certain practical activities were not as inimical to the ethos of élite culture as others: Pliny's championing of practical botany owes something to its connexions with agriculture, an activity which had been assimilated into Roman ideology.

In the final part, attention will focus on what factors gave the written word its authoritative power. The accumulated knowledge of the past was of vital significance to the contextualisation of the present. The physical vulnerability of texts was a matter for concern, but the act of writing gave the tradition a stability lacking in oral communication. The desire to protect and preserve encouraged a cumulative body of knowledge, but I shall suggest that the fact that it could be added to by a process of creativity and integration, which interwove past and present, vitalised rather than fossilised it. Personification of the books themselves and their authors further strengthened the bonds between past and present. Finally, the ability of the textual tradition to transcend space and time offered a breadth and overall control of knowledge denied to those restricted by the narrow focus and physical confines of the practical investigator.

I. Marginalisation: engaging with nature

i) Res obscura*: Cicero's scepticism*

We start, then, with some views which support the idea that practical investigation into nature was to some degree a victim of philosophically-based prejudice and disinclination. The evidence for the earlier part of our period is dominated, as often, by Cicero. Of the three branches of philosophy, physics, ethics and logic, the first was of least interest to him, except in its most exalted aspects, contemplation of which could raise the spirits literally and metaphorically. Thus, in the *Orator*, we are informed that the orator 'should not be ignorant of *physica*, so that … when he turns from the

heavens to human affairs, his words will be loftier and more magnificent' (*Or*. 1.15). The *physica* he is thinking of are essentially of the heavens, 'knowledge of things divine' (1.20) and not, by implication, knowledge of plants, insects or animals. Furthermore, the Academy, especially in the more sceptical manifestation which was Cicero's favoured school, was inclined to belittle natural science, believing that certainty about nature was impossible (*Acad. Prior*. 124–6) in both her celestial and terrestrial aspects. It has been suggested that an underlying philosophical scepticism was a significant reason for the broader problem noted at the beginning of this paper, the comparative neglect in the Hellenistic world of biological studies after Aristotle and Theophrastus. Could the transient and variable parts of nature be 'legitimate objects of theoretical, demonstrative science'?[3] The apparent loss and rediscovery of the Lyceum's library may be of little relevance, given the evident knowledge of a number of Aristotle's works by Hellenistic scholars.[4] Nor does its transferral to Rome by Sulla in the first century BC appear to have stimulated interest in this area of Aristotelian study.[5] Cicero's evidence certainly suggests that philosophical reservations were an important element in his prejudice. Transience and uncertainty are an issue: he notes the opinion of the Empirics that exposing human organs by dissection does not increase knowledge of them, since the very act of exposure changes their character (*ibid*. 122). In *Acad*. 1.15, one of the speakers praises Socrates for being the first to dissociate philosophy from the 'hidden things, obscured by nature herself' (*rebus occultis et ab ipsa natura involutis*) favoured by the Presocratic philosophers. Elsewhere in the same work, Strato, Theophrastus' successor as head of the Peripatos, is criticised for having abandoned the most essential part of philosophy, which consists in ethics, to devote himself entirely to *investigationem naturae* (*Acad*. I.34).[6] He refers once again, at the beginning of the fragmentary *Timaeus*, to his stance against *physici* in the *Academics*, as well as to past disputations 'in Carneadean', i.e. sceptical, mode with the Pythagorean polymath Nigidius Figulus, whose reputation for 'obscure' studies will be considered shortly.

Apart from the critiques just mentioned, Cicero's own forays into *physica* were limited to the *De Natura Deorum* and *De Divinatione*,[7] where the emphasis is firmly on the

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[3] Lennox 1994: 7–24. He argues that those who do show an interest in terrestrial *naturalia*, such as Galen or even Pliny are following their own agendas rather than the principles of investigation laid down by Aristotle. The biological works apparently remained without commentaries in antiquity (Gottschalk 1987: 1100–1).

[4] For a detailed account, see Gottschalk 1987: 1079–1174. For a sceptical view of the extent to which the history of the library can be reconstructed, or indeed its relevance to the history of familiarity with Aristotle's *oeuvre*, see Barnes 1997: 1–69, esp. 14–6.

[5] Whether Cicero knew the edition published by Andronicus of Rhodes (Plut. *Sull*. 26; Porph. *Vit. Plot*. 24) from the manuscripts in Sulla's collection is unclear; it may well post-date him. He did consult Sulla's library when it was in the possession of his son, Faustus, but doesn't mention what he was reading. (*Att*. 4.10.1; Marshall 1976: 252–64 goes further and surmises that he may have bought it from its impecunious owner). He read Aristotelian *commentarii* in the library of Lucullus (*Fin*. 3.2.7). Barnes plausibly suggests that the scattered biological references in Cicero which appear to have a match in the Aristotelian corpus are most likely to have derived from *mirabilia* collections and other compilations (1997: 49–50). Cicero himself apparently wrote a *De Admirandis*, now lost (Pliny *NH* 31.12). In any event, his relative silence probably has more to do with lack of interest than with what he might, or might not, have had access to.

[6] In *Fin*. 1.17, it is claimed that natural science is Epicurus' particular boast, another fact which would not have endeared it to Cicero.

[7] He also translated Aratus' *Phaenomena*, which dealt with astronomy and weather signs.

grander aspects of nature, and the *Timaeus*. The nature and purpose of the latter is difficult to gauge from its fragmentary state; it has either suffered badly in transmission or was never in fact finished (Levy 2003: 95–6). We have only a portion of a translation of Plato's *Timaeus* — a work which he had, perhaps significantly, described as 'obscure' (*Fin*. 2.15), together with a paragraph of a scene-setting introduction detailing a meeting between the sceptic Cicero, the Pythagorean Nigidius and the Greek Peripatetic philosopher Cratippus. The completed project may have been a dialogue on cosmology, or perhaps more specifically on Pythagoreanism, in homage to the recently-deceased Nigidius.[8] It is probably significant that, as Elizabeth Rawson (1985: 95 n. 59) suggested, a non-Roman protagonist, Cratippus, is to be used to expound Aristotelian science, another indication of its marginal position in Cicero's era, despite the arrival of Aristotle's library in Italy over thirty years before. In addition, only the earlier, more strictly cosmological, parts of the *Timaeus*, survive in Cicero's translation, which ends with the creation of humans, and the importance of sight for observing the heavens and the consequent invention of philosophy. How, and to what extent, he would have treated terrestrial, transient, nature, remains a mystery and it is, of course, possible that he never intended a full translation or a treatment of such matters at all.

Moving closer to Pliny's own time, there is not space here to do justice to his older contemporary, Seneca's, views on natural philosophy. However, Like Cicero, though from a Stoic viewpoint, he was concerned that any study of nature should be confined to those elements capable of elevating the spirit. His major study of the topic, the *Natural Questions*, is confined to large-scale natural phenomena, causative theories for which focus on the roles of elemental forces: fire, water and air (Hine 1981: 31). In keeping with the scope of ancient meteorology, some, namely rivers and earthquakes, are not literally elevated, in the sense of occurring in the atmospheric or celestial regions, but derive their causative influences from the atmosphere. All, however, are spiritually uplifting. Their scale is key: it confined investigation to theoretical rather than practical enquiry. It also made them objects of wonder, awe and even fear: like Lucretius, Seneca, though not an Epicurean, cites the dispelling of fear as one reason for investigating the causes of earthquakes (*NQ* 6.3.4). Such phenomena, in short, emphasise the magnificence of nature and produce the exhilaration and elevation of spirit required of philosophical contemplation (*NQ* 1.pref.11). That which is petty and too literally mundane must be left aside, a point made in *Ep*. 90's famous criticism of Posidonius for attributing technical inventions to the application of wisdom (*sapientia*). For Seneca, these were products of ingenuity, whereas wisdom focuses on life as a whole, not pedestrian detail (*Ep*. 90. 13; 28–9). By contrast, the studies of nature which he advocates will free us '*a sordidis*' (*NQ* 3. pref. 18).[9]

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[8] For the date and nature of the *Timaeus*, see Levy 2003: 95–110; Powell 1995: 46; Giomini 1975: xvi–xvii.

[9] Volcanoes, whose causes are regarded as localised rather than universal (Hine 2002: 69–72) are also assimilated to the notion that natural philosophy should 'raise up' the enquirer by the author of the *Aetna*. (224–7 Goodyear; cf. Taub 2008: 47). The monumental forces at work emphasise that this phenomenon is hardly trivial: the author regards it as illogical to study the heavens before the earth (255–7), stressing that the latter, too, can be a spiritually uplifting investigation into mysterious and awesome causes (270–81) and is not to be confused with the trivial and mercenary earth-bound pursuits of the seeker of precious metals or the farmer (257–68).

ii) Res sordida*: practical distaste*

The testimony of Cicero and Seneca suggests that natural investigation, other than that of the heavens and large-scale phenomena, could elicit a negative intellectual response. The obscurity of natural history, in the sense of its inability to yield certainties, minimised its importance in the opinion of the Academics. Later, Pliny sees 'shedding light on the obscure' (*obscuris lucem*, pref. 15) as a part of his authorial task which requires justification and can fight shy of hunting for *causas dubias* in his exposition of *naturalia* (11.8). Some areas of natural science were, as we saw, more dubious than others: the heavens were in a sense obscure, but their study could be conceived of as spiritually elevating: Seneca speaks of penetrating their mysteries (*NQ* 1.pref.3; 7.30.4). In addition to this philosophical obscurity, however, was a feeling that study of terrestrial nature was somehow demeaning. Aristotle himself had been obliged to insist in his *Parts of Animals* (645a26 cf. 645a5–10) that there was nothing *atimon* about such study. Upper class disdain for occupations involving manual labour was present in both Greek and Roman society and Aristotle's natural studies were uncompromising in this respect, involving as they did the actual collection and dissection of living things. Such an attitude remained visible in our Roman élite sources, as Cicero attests in a well-known passage of the *De Officiis* (1.150–1).[10] It is true that a less negative attitude was discernible by Pliny's era, especially among equestrians like himself, whose recruitment into the administrative service of the empire coincided with an increase in the production of technical literature, the material for which derived not just from other books, but from the experience of the writers themselves in their new roles. We will consider this phenomenon further below (II.ii). One of the early works of Pliny himself, a one-time cavalry officer, was a treatise on throwing the javelin from horseback. The Romans' depiction of themselves as practical and utilitarian in contrast to over-theoretical Greeks also played its part here. But the prejudice against actually getting their hands dirty remained; even what appears to modern eyes to be an eminently refined and respectable occupation — painting — carried a social stigma. According to Pliny, despite a tradition that the Fabii Pictores had derived their *cognomen* from this art and that it had been practised by the early Roman tragedian Pacuvius, it was later regarded as unsuitable *honestis manibus*, like the occupations Cicero listed in *De Officiis*. A knight called Turpilius had recently bucked the trend (and even painted left-handed!), but an ex-praetorian governor of Narbonensis was ridiculed and his reputation sullied because of his enthusiasm for painting miniatures (*ea re inrisa etiam contumeliae erat*, *HN* 35.21). The recommendation by the orator Messala to teach the dumb son of the consular Q. Pedius to paint seems to have been a solution born of desperation in exceptional circumstances (*ibid*. 35.21–2).

As Aristotle had defended the study of what was *atimon*, Pliny, too, deprecates his topic, claiming to be dealing with the least elevated parts of nature (*sordidissima sui parte*, pref. 13). He later claims that he was the object of ridicule for his 'frivolous'

[10] In practice, the situation may have been more complex. At the very least, there is evidence for investment in large-scale manufacture and trade enterprises in the early empire by the élite, possibly including members of the senatorial class. See Wilson 2008: 401, 411–2; Bowman & Wilson 2009: 27. Cicero himself had suggested that large-scale trade was not so bad provided the profits were later reinvested in land (on which see below, II.iii). Long before, the Elder Cato had, notoriously, underwritten ships and invested in land used for non-agricultural enterprises (Plutarch, *Cato the Elder* 21.5).

studies (*…plerisque… inrisui sumus ista commentantes atque frivoli operis arguimur*, 22.15), evoking comparisons with the unfortunate praetorian whose painting was derided to the point of damaging his social standing. In the investigation of nature, the most pronounced perceptions of sordidness were probably centred on dissection. In defence of his project, Aristotle acknowledged the popular revulsion, as later did Celsus, especially with regard to human body parts, where a socio-religious reticence also came into play.[11] When the philosopher Democritus dissected animals openly, he was suspected of outright insanity, according to the story in the famous pseudo-Hippocratic letter.[12] Finally, the sordid popular profile of dissectors was not improved by the inclusion among their ranks of the medical profession, a group which did not necessarily command either trust or respect.[13] That doctors could and did converge on newly-slaughtered animals for scientific purposes is attested, for example, in a series of anecdotes in Galen's *On Anatomical Procedures*. Indeed, Galen's stories suggest that the prevailing motivation was often the medical one-upmanship deplored by Pliny (*HN* 29.9, 11) rather than scientific endeavour. In the most famous, where doctors and their pupils crowded to see a recently-slaughtered elephant dissected, the emphasis is on Galen's superiority over his 'inexpert' colleagues in the matter of predicting correctly the number of apexes and cavities which would be found in the heart (later begged from the imperial cooks as a trophy), when his rivals could not.[14]

Did philosophical and social prejudice marginalise the study of natural philosophy at Rome? Taken together, the views expressed by two of Rome's greatest thinkers, the evidence of suspicion towards manual activity among Rome's élite (to which we shall return in II.iv) and the antipathy towards dissection which had elicited a self-justification even from Aristotle, add up to a rather negative picture. Can it to any extent be modified? In the case of testimony from élite intellectuals, it should be remembered that their views may not be wholly representative: A number of Cicero's fellow politicians espoused the Epicureanism he despised and others took a more relaxed view than the self-conscious *novus homo* as to what constituted an appropriate use of *otium* for a Roman. Seneca's pre-eminence not just as an imperial advisor but also as a Roman exponent of Stoicism was also atypical; in addition, his ethical priorities were clearly imprinted upon the *Natural Questions*, his only foray into physics.

Before we return to more general attitudes, it is worth considering whether Roman élite society can produce any voices to counter Cicero or Seneca. The most promising possibilities are two individuals separated by nearly two centuries: Nigidius Figulus and Apuleius of Madauros. Had his writings survived in a less fragmentary state,

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[11] Aristotle (*PA* 645a 30); Celsus proem. 44. By Galen's time, the teaching of dissection was apparently confined to Alexandria and Galen himself generally used animals, although he refers to the possibilities offered by a quick look at the corpses of those thrown to wild beasts in the arena and by chance discoveries of the corpses of bandits or exposed infants (*Anat. Admin.* III.5.385–6). For a discussion of the possible cultural prejudices against human dissection, see von Staden 1992: 223–41, who also considers the circumstances which made it possible, for a brief period, in Alexandria. Pliny evinces horror and revulsion at medico-magical remedies from human bodies found in his sources (28.4–9).

[12] *Ep.* 17.2. For discussion of date, see Smith 1990: 26.

[13] Pliny was notoriously suspicious of the medical profession, exemplified in his quotation and elaboration of the famous tirade of the Elder Cato (*HN* 29.13–4); Beagon 1992: 202–24.

[14] The element of competition was still more blatant in an episode in which followers of Galen challenged a rival to prove his theory that arteries were empty of blood, against Galen's view that they were not. Bets were actually deposited with the bystanders; Galen's followers won (*Anat. Admin.*VII.16).

Nigidius Figulus, interlocutor of Cicero's *Timaeus* and a loyal friend to whose learning he pays generous tribute in *Fam*. 4.13,[15] might have offered a valuable alternative viewpoint. Called the most learned man of his time after Varro by Gellius (*NA* 4.9.1–2), Nigidius' interests are shown by testimonia and fragments of his own work to have included natural science; a knowledge of Aristotle and Theophrastus is coloured by his interests in Pythagorean mysticism and oriental magic.[16] A late source calls him 'the greatest investigator of nature' (*maximus rerum naturalium indagator*).[17] Fragments from his works on human physiology and on animals may suggest that he did on occasion add to and up-date material which derived ultimately from Aristotle and Theophrastus,[18] but unfortunately cannot prove practical or first-hand investigation. Popular supposition of the period associated Pythagoreans as well as magicians with obscure and rather sinister dealings with dead bodies: the former were believed to practise necromancy via human sacrifice,[19] while the latter, as we saw, were suspected of abusing human and animal body parts in order to harness their natural vitality and thereby gain 'supernatural' powers. While no such practices are reliably attributed to Nigidius personally, it remains possible that practical investigations of a less sensational kind were responsible for enhancing his esoteric reputation.

As already noted, body interiors should be kept hidden: too often, their uncovering was the province of those with 'occult', hidden, interests. In 158 AD, nearly 200 years after Nigidius' death, the purchase of fish for dissection was an important element in a charge of magical practices brought against Apuleius of Madauros. The accused maintained he was conducting scientific research. His political and cultural ambience was different from that of the late Republican senator Nigidius or the conscientious equestrian Pliny, dividing his time between his emperor and his writing. Nonetheless, his family was of consequence in his North African home town, of which his father had been *duovir* and he himself a councillor. Culturally, his learning made him the Latin counterpart of the Greek sophist of the Second Sophistic. His published defence speech, the *Apologia* (*Pro Se de Magia*) was a flamboyant advertisement of his intellectual scope and versatility, pitting his own learning against his accusers' ignorance.[20] He spends considerable time linking his practical piscine researches to those of Aristotle and Theophrastus, at the same time listing the animal treatises of the former and producing in court his own works on *naturalia* in both Greek and Latin (*Apol*. 29–41, esp.36–8; 40; 41). Despite his pride in his contributions to a Latin biological vocabulary (38.3, 38.5), his work goes beyond mere translation. Crucially, Apuleius establishes a connexion between his writings and his practical investigations on natural science which associates him with his respected philosophical predecessors. *Apol*. 40.5–6 puts it clearly and succinctly: 'Did I not tell you that I write about the anatomy of all animals…? That I closely study Aristotle's works and supplement them? I am highly

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15 *uni omnium doctissimo et sanctissimo et maxime quondam gratia et mihi certe amicissimo*.

16 *Pythagoricus et magus*, Jerome, *Chron*. 183,4. For other references, Swoboda 1964: Testimonia I–XIII.

17 Macrobius 3.9.6 = Swoboda CXIII.

18 Fr. CXI appears to modify Aristotelian views. See Rawson 1985: 182–3, who also thinks frs. CXIIII and CXXIII may suggest an interest in developing Latin zoological nomenclature (*ibid*. 181). See p. 8 below for Apuleius' later boasts of adding to Aristotle's material and developing a Latin biological vocabulary.

19 Cic. *Vat*. 14; Ps. Cic. *In Sall*. 5.14 = Swoboda X.

20 On the cultural milieu of Apuleius, see Sandy 1997; Harrison 2000: 1–38. On the *Apology*, Harrison 2000: 39–88; Hunink 1997: I.11–30; Bradley 1997: 203–23.

surprised that you are so certain that I examined one little fish, whereas I examined a great number of fish, wherever I came across them'.[21] In addition to establishing a link between practical and literary research, which we shall examine in more detail shortly (II.ii), he claims that his practical researches enabled him to build on earlier investigators' work, whether in the development of Latin taxonomy or in the statement that he is enlarging Aristotle's material. At this point, we should recall Nigidius, who, it was noted, may also have proposed Latin names for creatures found in the Greek sources and offered modifications of Aristotelian material.[22] On the analogy of Apuleius' claims, he, too, could have used practical as well as literary researches to aid this process.

With Apuleius, however, we may have strayed too far from the political and cultural ambience with which we started: Nigidius was an influential Roman senator at a time of political crisis; the provincial Apuleius comes much closer to the modern notion of the professional intellectual and teacher, a contemporary of Galen who testifies that anatomical demonstrations might now be attended by high-status members of an increasingly integrated Graeco-Roman ruling class.[23] His claims to practical scientific research are certainly fascinating and worthy of investigation in their own right. Allowance, however, must be made for the fact that they were designed to refute criminal charges.

In summary, then, the evidence, pitifully fragmentary in the case of Nigidius and hyperbolically rhetorical in the case of Apuleius, can offer no reliable conclusions as to the degree or frequency of élite involvement in natural investigations. We can be more confident in concluding that any such activity would have been viewed as suspect. Apuleius' case illustrates the readiness with which such investigations were identified with magic, whose practices were regarded as sinister manipulations of obscure natural forces, antisocial and marginalising. It is possible, too, that Nigidius' activities were an object of similar suspicion: there is evidence in Pliny that Nigidius was apt to slip into what he regarded as the fanciful extravagance, the *vanitas*, of the eastern Magi.[24] Such exoticism may have made Cicero more wary. His description of Nigidius as a man 'distinguished in all the other arts worthy of a free man but in particular a passionate and devoted researcher into those things seemingly obscured by nature'[25] is innocuous enough. However, those sensitive to Cicero's prejudices might wonder whether he is not so much giving emphasis to the natural science by separating it from *ceterae artes quae dignae libero essent* as hinting at a contrast.

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21 Trans. Hunink 1997: 64.

22 Above, p. 7 and n. 18; Rawson 1985: 181.

23 *Anat. Admin*. I 218. The consular Flavius Boethus, whose anatomical interest Galen commends was in fact of eastern origin. Not so L. Sergius Paulus, *praefectus urbi* c.168. See *RE* suppl.VI, Sergius 35a (Schuler); *Der Neue Pauly* XI, Sergius II.4. True, there is no evidence that they got their hands dirty, but even Galen admits to his initial reluctance to skin his own specimens, as being beneath his dignity, until he found he was missing important details (*Anat. Admin*. I.233).

24 *HN* 29.69, 138; 30.84.

25 *fuit enim vir ille cum ceteris artibus, quae quidem dignae libero essent, ornatus omnibus, tum acer investigator et diligens earum rerum quae a natura involutae videntur* (*Tim*. 1).

As for Cicero himself, was it significant that, almost alone[26] of his known philosophical works, his *Timaeus* was apparently to be set in a non-Italian, non-villa setting, taking place instead in the Greek east at Ephesus as Cicero dragged himself unwillingly to his Cilician province and what he saw as an exile from the 'light' of the capital (*Fam*. 2.12.3)[27]? Is this discussion of *physica* perilously close to being a cultural equivalent of his marginalisation from the political limelight; a wandering into an intellectual wilderness as overcast and squalid — *obscura et sordida* — as his enforced *peregrinatio*?

II: Interplay and interaction: cultures of words and experience

So far, our evidence has suggested a distinctly ambiguous and marginalising attitude towards the pursuit of natural science among the Roman élite. In contrast, as we shall now see, literary learning became embedded in élite society, to the extent of assimilating itself to the value system which underlay it. However, the dichotomy was not straightforward. It will be noted that literature on practical subjects drew on experience as well as written sources without compromising its participation in this sophisticated system of cultural validation. In addition, certain practical activities, namely those of an agricultural nature, were themselves closely assimilated to the values and attitudes of the élite. However, even this ideologically charged activity seems to be enacted primarily at a supervisory rather than 'hands on' level, suggesting that Pliny's forays into a related area, medical botany, were unlikely to have reflected practical involvement on the part of his peers. Ultimately, as will be seen in the final section (III), the authority of the written word played a decisive role in the favouring of text over experience.

i) Text and society

Unlike the personal pursuit of natural science, then, literary learning was entrenched among the Roman élite. An intensive and self-conscious cultivation of literature, literary researches and literary tradition had characterised the scholarship of Ptolemaic Alexandria and its great library. This evolved in late Republican Rome into a cultural discourse which reflected the various values and attitudes underlying the political and social workings of that society[28] and adapted to the shifts in authority which characterised the transition from Republic to Empire.[29] Literary culture was grafted on to established socio-political traditions of display, informal discussion and consultation,

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[26] The final book of *De Finibus* is set in the Athens of Cicero's student days. Here, however, it is a matter of homage to the birthplace of the ideas expounded in this treatise on ethics, one of the most technical of Cicero's philosophical works.

[27] *urbem, urbem, mi Rufe, cole, et in ista luce vive. Omnis peregrinatio…obscura et sordida est iis, quorum industria Romae potest illlustris esse*. 'Rome! Stick to Rome, my dear fellow, and live in the limelight! Sojourn abroad of any kind...is squalid obscurity for those whose efforts can win lustre in the capital.' (trans. Shackleton-Bailey).

[28] In one sense, of course, there was an ever-present tension (cf. *Pro Archia* 12–3) between public duty and cultural pursuits: *negotium* must take priority over *otium*, an attitude which persisted, though to a lesser extent, into Pliny's era of imperial autonomy, as the latter's anxiety to justify to his emperor the time spent on his literary project (pref. 18) suggests.

[29] See e.g. Wallace-Hadrill 2008: 213–58.

and the etiquette of entertainment and of reciprocal favours. In the case of the last, Trevor Murphy has shown how Larcius Licinus' offer to 'buy' Pliny's notes was an object lesson in how not to work this system: currency should remain metaphorical.[30] Stories might be exchanged, books lent, libraries placed at friends' disposal[31] and finished literary products given and received. Later, in the second century AD, Aulus Gellius and, most famously, Athenaeus in his *Deipnosophistae* show us a now integrated Graeco-Roman culture in which small-talk at dinner relies heavily on the guests' reading: Athenaeus has them arrive with stories in their heads but also with actual books in their hands (*Deipn*. 1.4.b).[32] Their learning might sometimes be obscure, but in the sense of being recherché rather than *sordidus*.

The trust essential to the alliances and agreements made in such a society also permeated to its literary culture: the citation of sources to boost an author's credibility might extend to mention of the *fides* and *auctoritas* bestowed by virtue of their rank and social standing. The trend is well illustrated by the *Natural History*. Pliny's sources are accredited by literary and scholarly trustworthiness but also, especially where it might bolster some of his more esoteric facts, by social status and office: Mucianus, 'three times consul', vouches for the writing abilities of elephants (8.6). For sea-monsters, *auctores habeo in equestri ordine splendentes* (9.10). The first and most detailed Roman account of the phoenix was given by 'Manilius, the eminent senator famed for his extreme and varied learning' (10.4).

In placing Cicero at the top of his list of Roman intellectual geniuses (7.114–7), Pliny combines the language of politics and literature, hailing him as the man who 'proscribed' Mark Antony (in effect suggesting that he 'wrote' him out of existence), and as the winner of a literary triumph.[33] The conventions of aristocratic display also shape his list: proof of the genius of each individual lies not just in his achievement as such but in its recognition by others: Ennius by Scipio, Virgil by Augustus, and so on. Cicero is vouched for not just by Caesar but also by Pliny himself, who thereby integrates himself into a literary *amicitia* network which transcends time.

The ultimate platform for literary display is also mentioned by Pliny in this same passage. It came at the end of Cicero's era with the creation by Pollio of the first public library, soon to be followed by others built by Augustus and his successors.[34] As with political prowess, individual glory was at one and the same time highlighted and subsumed into the collective heritage. Rome now had a concrete manifestation of its cultural history to match the military and political one to be created by Augustus in the Mars Ultor complex. Like their political counterparts, the cultural heroes, too, were commemorated with statues, only in their case these were situated in the libraries[35] and revivified their subjects in body as their books did in spirit. This practice seems to have particularly impressed itself on Pliny (35.9), who also comments on the placement of the statue of a still-living author, Varro, in Pollio's library; the cultural

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30 On this and the workings of aristocratic literary culture, see Murphy 2004, esp.53–67.

31 For this 'duty', see Rawson 1985: 40.

32 For the bookish culture of Athenaeus, see Jacob 2000: 85–110. The date of the *Deipnosophistae* is uncertain; possibly the last years of the second century AD: see Baldwin 1976: 21–42.

33 See Beagon 2005: 306–10. Also Beagon forthcoming, 2013.

34 On Pollio's library: Isidore *Etym*. 6.5.2; Augustus: Suet. *Aug*. 29.3; Plut. *Marc*. 30.6; Dio 49.43.8; Tiberius: Pliny *HN* 34.43; Gellius *NA* 13.20; Vespasian: Gellius *NA* 16.8.2.

35 Statues in libraries: Marshall 1976: 263; Too 2010: 194–5.

equivalent, he suggests, of the naval crown awarded to him for his role in the war against the pirates (7.115–6). Statues of imperial patrons graced the libraries they founded, while the prominent eastern consular Tiberius Julius Celsus Polymaeanus went one better: he was actually buried in the handsome library donated to Ephesus by his son.[36] In the later first century AD, the procuratorship of Rome's libraries seems to have shifted from freedmen holders around the time of Vespasian to become a rung, albeit a low one, on the ladder of office pursued by equestrians. Incumbents were to include a number of individuals of intellectual distinction, including Suetonius.[37] Responsibility for the upkeep and preservation of Rome's cultural heritage was now in a very literal sense the responsibility of her scholar-statesmen.

ii) Text and experience

We have seen that books, and the culture of learning from books, could be integrated into élite Roman society through the pre-existing social and political structures. Conversely, these structures did not lend themselves so easily to non-literary inquiry and to some degree actually discouraged it. However, we saw that, some eighty years after Pliny's death, Apuleius was able to combine literature with practical research. It was also noted in section I.ii that the production of literature encompassing technical and practical material increased in Pliny's era, and could, moreover, draw on the practical experience of its authors as well as on other books. In this section (II.ii), we shall now see that it could incorporate different types of directly and indirectly sourced material. Moreover, the practical nature of the subject matter could be used to enhance such literature's participation in the cultural assimilation just described. We shall then (II.iii) consider a practical activity, agriculture, which was directly assimilated to Roman values and its relationship to the one area of natural science — medical botany — into which Pliny made practical forays, before concluding (II.iv) with a consideration of the level of practical involvement indicated by references to personal experience. All three points suggest a more nuanced relationship between text and experience in Roman élite society.

It is noticeable that literature on practical subjects draws on a variety of types of source material. Pliny's discussion of agriculture (*HN* 18), for instance, uses named literary sources (Cato, Turranius Gracilis, Mago, Mamilius Sura, Virgil, Varro and Columella among others, eg. 18.35, 36, 44, 56, 75, 143, 243, 303, 348) but also many instances of more generalised opinions ('some say'; 'they advise'; 'it is thought': e.g. 18.45–6, 192, 194, 254) and traditional sayings and adages (*communia*, 18.44; *volgo dictum*, 18.111; *oraculum*, 18.39, 319; *leges*, 315). In addition, however, there is information with a more personal tinge: eye-witness accounts (18.319); topics 'never treated by any writer before me' (279) and recent innovations or developments in named areas (173; 183). A similar pattern may be observed in the other Latin agricultural writers.[38] The blending of theory and practice, and imitation and experiment is also advised.[39] Moreover, it is not always possible to separate these types of evidence neatly. 'They'

[36] Casson 2001: 116 notes that the building was fronted with statues of Virtue, Wisdom and Knowledge, aspirational values for the educated élite, as well as being appropriate to a repository of literature.

[37] Casson 2001: 95–6. For intellectual office-holders, see Pflaum 1960: 219–24; 245–7; 333–6.

[38] Varro *Agr*.1.1.7; 24.1–4; 2..3.3–5; Col. *Re Rust*.1.1.7–14; 3.2.28; 3.10.8; 3.10.15; 3.10.20–1.

[39] Varro *Agr*. 1.18.7; Col. 1.1.16–7; Beagon 1992: 169–70.

could refer to written sources or traditional sayings. In Pliny, some of the latter are also attributed to Cato, who has himself become an oracular source for Pliny (cf. *HN* 18.26). Other apparent sayings may be traced back to a written source (e.g. *HN* 18.28, from Columella 1.3). Columella (*Re Rust*. 3.10.8–21) blends personal experience with traditional practice and literary hints. More significantly, it is difficult to ascertain whether the material which might suggest personal experience is what it seems: we cannot know for certain whether Pliny obtained his information on innovative methods at first hand or where and how he got the material he claims had been treated by no one before him. Even apparent statements of personal activity may be misleading, a point to which we shall return in II.iv.

In addition to this often rather complex blending of sources of information, the subject matter and the expertise of the authors could be manipulated to reinforce some of the values to which Roman literary culture generally had become aligned. Studies in recent years have explored the adherence of literature on practical subjects to the same paradigms of self-conscious artistry found in other areas of literature.[40] More particularly, this could involve some Roman authors in a presentational strategy fashioned in accordance with the social and political value system already mentioned: agricultural writers capitalise on the traditional virtues of simplicity and labour associated with their subject; while, in works on architecture and aqueducts respectively, Vitruvius and Frontinus exploit the idea of useful expertise deployed in public service in the context of imperial addressees and the greatness of Rome.[41] The practicality of its subject matter in no way diminished the assimilation of such literature to *auctoritas* and *dignitas*: indeed, *utilitas* could be a strategic presentational ploy. Moreover, authors can bolster their standing by reference not only to their theoretical, book-based learning but also to their own practical involvement. Vitruvius unequivocally called himself *architectus* (*Arch*. 1.1.18) and, while he famously stressed the need for a theoretical and cultural education, he left the centrality of the practical craftsmanship, *quae manibus perficitur*, in no doubt (*Arch*. 1.1.1). Frontinus, although in an administrative role, highlights the fact that he got close to the practicalities involved in the maintenance of the aqueducts through personal inspection (*Aq*. 17).

iii) Agriculture and the Roman ethos

Practical subject matter and indeed the practice itself could, then, enhance rather than undermine a literary work's assimilation to the Roman ethos. In addition, one particular aspect of practical activity, agriculture, was itself not only firmly embedded in Roman ideology, as epitomised in the legends of Roman *maiores* such as Cincinnatus, but was actually incorporated into contemporary socio-political dynamics. A careful reading of Pliny's text, in particular, suggests that its assimilation went beyond a generalised nod towards the timeless values of *mos maiorum* to act as a conduit for the competitive striving for pre-eminence and recognition which characterised élite attitudes. Land-ownership was notoriously the approved vehicle of wealth for the senatorial class, but its prestige percolated further. It is noticeable that by far the greater

[40] Föllinger 2012: 237–44 identifies such elements even in Aristotle's biological works; more generally, Hutchinson 2009: 196–210; Dueck 2011: 369–84; Taub 2008. On the establishment of distinctive authorial voices by such writers, see Taub & Doody 2009.

[41] DeLaine 1995: 117–39; König 2009: 31–52.

number of instances in the *HN* linking distinguished Romans individually with practical activities and empirical discoveries are agricultural in tone. Varieties of olives and fruit were named after distinguished Romans who introduced them (e.g. *HN* 15.49–50; 70, 83, 91). The pride taken in these agricultural achievements is evident: 'I lately heard a man of consular rank declare he owned some walnut trees that actually bore two crops a year' (15.91). But it was not just members of the senatorial class who competed for *dignitas* through such achievements. Other groups also sought to improve their standing: 'A knight, Corellius, grafted the Corellian chestnut and later his freedman grafted an improved version' (17.122). Here we see knights aspiring to an activity consistent with senatorial respectability, while, lower down the social scale, freedmen see such achievements as a means of upward mobility.[42]

It is significant that the area of natural science which elicited some personal research on Pliny's part should be linked to agriculture, integrated as it was into the ethos of the élite and to that extent comparable with the literary culture which otherwise furnished his material. We have noted that the *Natural History* contains material on agriculture apparently gleaned from personal experience. However, it also offers unequivocal evidence that Pliny gathered non-literary information and even undertook some personal investigation, however unsystematic, into botany, in particular medicinal botany.[43] This area of natural science had the advantage of practical feasibility, even for a busy statesman writing an encyclopaedic work: Pliny is able to examine plants first-hand in a specialist garden belonging to a medical botanist, Antonius Castor (*HN* 25.9), while others were picked and shown or sent to him (*HN* 25.27; 27.99; 25.18). Crucially, however, it could be associated with the ideological resonances of agriculture. Its self-sufficient ethos was evoked by home-grown cures from the elder Cato's (29.15) farmstead or the plants to be found in any Roman *hortus* (24.5),[44] as well as the products of nature's uncultivated beneficence.[45] In this instance, at least, a purpose can be discovered in the 'obscure' in nature (22.1). The usefulness of these plants offset their 'sordid' nature and gave dignity to apparently frivolous studies (22.15; 29.28). Finally, Pliny never tires of citing his own pre-eminence as an expert in this field: Greek medical and eastern magical authorities are frequent recipients of ferocious condemnation: Roman authority could counter the dubious exploitation of nature by both doctors and magicians.

iv) Modes of experience

We have seen that the interrelationship between practical activity, written text and Roman élite values was more complex than at first appeared. Literary culture had

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[42] Cf. also the famous story of Furius Chresimus, *NH* 18.41 and Pliny's comments on Vetulenus Aegialus, whose farming of the estate of Scipio Africanus earned him great public approbation (*HN* 14.49: see note 49 below, p. 15).

[43] Authorial investigation: 25.9; 25.27; 27.99; 25.18. An anecdote criticising the magical exaggeration of a plant's powers by Apion the grammarian also allows us to date Pliny's interest early, well before the composition of the *Natural History*: the meeting with Apion took place when the latter was on an embassy to Caligula, in the author's youth.

[44] Many examples in books 19–20. Remedies should be cheap and of the kind which 'form the daily dinner of the very poorest' (*remedia vero cotidie pauperrimus quisque cenet*, 24.5). Medical staples included wool and eggs (29.29).

[45] Beagon 1992: 212.

been assimilated to the élite code, while one area of practical activity, at least, was itself enshrined in the same ethos. In addition, references to experience and practical knowledge occur in literature on practical subjects and might form part of a literary strategy in harmony with those values. Yet, to what extent, if any, can such references be taken to refer to a literal 'hands on' experience on the part of the author? The negative attitude frequently associated with such activity among the élite has already been noted. Was Pliny's personal examination of plants manual? Vitruvius, as we saw, describes himself as a professional architect but his exact social status is unclear. Even the agricultural references leave a nagging doubt as to whether distinguished landowners were ever getting their hands dirty, as opposed to overseeing the work, however closely. It was noted above (II.ii) that some statements implying personal involvement were ambiguous. Agricultural discourse can employ idioms which appear to suggest personal labour but in fact assume delegation to subordinates.[46] Did Corellius literally graft his chestnut with his own hands or did he merely supervise the process?[47] Agricultural writers dutifully celebrate the personal labour of Cincinnatus on his little plot of land (Col. *Re Rust*.1. pref.13–4; Pliny *HN* 18.20), but they themselves were large landowners whose logical role was supervisory, as was the norm for such estates in the later Republic and early Empire. Pliny recognises the need to prioritise political duty over agricultural commitments in his day (*HN* 8.35). It is the eye of the owner, rather than his hand, which he calls the best fertiliser of an estate (*HN* 18.43; cf. 18.31, 35) and even that might have to be delegated in absence to a trustworthy bailiff (*HN* 18.35–6; cf. Cato *De Agr*. 5.1–5). It is true that the elder Cato's willingness in his youth to join his slaves in the physical work of the farm is described in some detail by Plutarch (*Cato the Elder* 4.1–2; cf. 3.1), but equally he implies that his behaviour, though admirable, was already regarded by his contemporaries as eccentric and outdated in the late third century BC. There is a similar implication in Seneca's description of Scipio Africanus, who worked his own fields *ut mos fuit priscis* (*Ep*. 86.5). Here, though, Scipio's unprepossessing bathhouse, described as *sordidus* (*Ep*. 86.5) and the rusticity of his lifestyle is intended primarily as the foil to the mores of Seneca's own day, in a moral discourse which presupposes sophisticated disdain on the part of an early imperial readership.

Despite the moral tradition attached to the notion of agricultural labour, then, the personal experience of landowners of the late Republic and early Empire was more

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[46] Thibodeau 2011: 30–3 discusses some of these.

[47] In fact, he may have done the grafting himself. Thibodeau 2011: 50 suggests that the few relatively clear references to élite involvement in manual labour on the farm (e.g. Pliny *HN* 16.234; Ovid *Pont*. 1.8.47–8; Fronto *Amic*. 4.6) occur in the context of trees and vines and may take their cue from the famous story of Cyrus' tree planting in Xenophon *Oec*. 4.20–25. He sees emphases in some of the accounts of *maiores* such as Cincinnatus and Dentatus which suggest that manual labour on the farm was virtuous in Roman eyes only insofar as it was appropriate to a state of poverty (48–61). However, Roman attitudes to poverty and wealth in the period we are dealing with are complex and it should be remembered that real tensions remained between the necessity for wealth in a competitive and ostentatious society; a genuine attachment to the refinements enabled by that wealth; and the potent pull of an ideological discourse which condemned luxury and promoted the simplicity of the past. In addition, rustic retirements like that of the elder Scipio tended to be the result of political adversity rather than monetary depletion or a voluntary yearning for a life of virtuous poverty.

likely to be what they had seen or overseen, rather than what they had done.[48] What, then, of Pliny's botanical references? The description of his visit to Castor's garden clearly establishes visual inspection (*contemplari…visendo*, *HN* 25.9) but need not necessarily entail manual examination. However, it is not necessarily easy to identify the point at which inspection shifts from eye to hand,[49] and it is difficult to imagine that he did not handle a specimen specially dug up and sent to him (25.27), or refrained from touching the plucked (*volsam*) specimen of Cretan lithospermum whose beauty so entranced him (27.99).

Were Pliny's peers sufficiently persuaded by the link between agriculture and medical botany to become directly involved in the latter and, if so, what form did their involvement take? He attributes both *utilitas* and *virtus* (25.4) to medical botany, but at the same time bemoans his lack of Roman predecessors in the field, excluding the recipes in Cato's work and an unfinished treatise dedicated to Augustus by one C. Valgius. There is no suggestion that anyone but himself was interested in personally inspecting plants, whether visually, manually or both. However, he also mentions Pompey's acquisition by conquest for Rome of Mithridates' writings on the subject. Like Aristotle, whose library, as previously noted, had also become Roman war booty, Mithridates had been a practical naturalist, experimenting with poisons and antidotes (25.5–7). This idea of conquest may be significant. Depictions of the conquered natural landscape were displayed in Pompey's Mithridatic triumph, if this is the right interpretation of the pyramid-shaped mountain in gold with lions, deer and fruit on it described among the procession's highlights by Pliny (37.14). Individual components of that landscape might also be highlighted: Pompey is said by Pliny to have started the tradition of displaying exotic or precious trees, in this case ebony, in the same triumph, while Vespasian later showed off the Jewish balsam (12.20; cf. 12.112). Captive nature symbolised the extent of the general's achievement: he was world conqueror, with an unchallengeable claim to the aristocratic qualities of *gloria* and *fama*. The appropriation of the Mithridatic library may therefore suggest that conquest of the fruits of inquiries into nature, too, fitted the Roman élite ethos better than personal

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[48] Pliny's jibe that Remmius Palaemon, who left the renovation of his newly-acquired vineyard to Acilius Sthenelus, son of a freeman, was a 'pretend farmer' (*HN* 14.50) could imply that manual work was expected of a 'real' farmer. However, Pliny's language suggests he had absented himself even from the supervision (*cura*), which was undertaken by Sthenelus. But landowner absenteeism was hardly unique. Suetonius (*De Gramm*. 23) even suggests that Palaemon did do some grafting (*manu eius*: see above, n. 47). Pliny's ungenerous assessment is probably influenced by Palaemon's unattractive reputation; and the anecdote does end with implicit approval of Palaemon's intelligent deployment of Sthenelus' expertise: see Beagon 1992: 169–70.

[49] In some texts, this ambiguity can be created and exploited even where seeing and doing are differentiated. Seneca's letter on Scipio, for example, concludes with a description of the transplantation methods used by the current owner of the Scipio estate, a freedman, Vetulanus Aegialus (above n. 42), in which it is clear that Aegialus performs the operation while Seneca observes: *vidi* (86.17) is used here and four more times in the letter (86.14, 16 and (twice) 19). Yet the detailed description of the procedure tends to obscure the fact that it is Seneca's eye, rather than his hand, which is being deployed. This may not be fortuitous: a nugget of information recounted in Pliny but not mentioned by Seneca brings the rugged virtues of the ancestors rather uncomfortably into the present: an olive 'planted by the hand of Africanus' was still alive in Pliny's, and therefore Seneca's, day (*HN* 16.234). Here, perhaps, such ambiguity conveniently allows simultaneously for assimilation to the virtuous customs of yesteryear, whilst adhering to the political and social realities of contemporary Rome.

investigation of the plants themselves.[50] Overall control, rather than direct practical involvement with individual details was the key. Pliny records a paradigm for aristocratic achievement in his quotation of the late third century BC funerary *laudatio* of Lucius Metellus who, having gained pre-eminence as general and statesman, 'had direction of matters of the highest importance' (*auspicio suo maximas res geri*, *HN* 7.140). Overall control also characterised the great landowner as overseer. Finally, it matched the principle at work in Seneca's preference for philosophical contemplation on a grand, elevated, celestial scale, removed from the narrow focus on the particularities of earthly trivia.

III: Authority: the power of the written word

While the culture of books could be integrated into the structures and values underlying Roman élite culture, attitudes to empirical enquiry were altogether more complex. Texts dealing with practical topics could employ the same literary devices for cultural integration as other forms of literature and their material could draw upon personal experience as well as textual information. Yet prejudices against practical activities persisted. In addition, the specificity of practical researches may have been regarded as less appropriate to the élite, for whom a carefully distanced control, an elevated overview, was more becoming. This, then, is the background against which the predominantly literary nature of Pliny's *Natural History* must be considered. As we have seen, it is not devoid of authorial investigation, but Pliny's pride centres on the number of books he has read in order to gather his information (*HN* pref. 17) and his summaries of the contents of each book are concluded by long lists of his literary sources. However, in order to understand better the influence of the written source, it is necessary to examine more fully the nature of and reason for the authority ascribed to it.

i) The importance of the past and its vulnerability

Firstly, to pass this authority off as another manifestation of the Roman deference to tradition without further consideration is superficial and inadequate. For Cicero (*Orator* 120), the past is of profound importance since it contextualises the present. What is the worth of human life unless it is woven into the life of our ancestors by the records of history? The memory links forged by literature secure us in history and create our very identity. Cicero is commenting specifically on the records of political history, as evidenced by his compliment to Atticus' monumental *Liber Annalis*, but his comments can be extended to include the assimilation of other kinds of knowledge. Writers in the fields of medicine and philosophy utilised doxographical techniques to articulate their own position in the broader tradition of learning.[51] Bearing this in mind, we should not be too quick to dismiss as commonplaces ancient laments for the decline of learning. The tone of both Seneca *NQ* 7.31–2 and Pliny *HN* 2.117–8 and

[50] Too 2010: 41 notes Aemilius Paulus' acquisition of Perseus of Macedon's library in 168 BC as an example of 'the overlap between political and cultural power'.

[51] Van der Eijk 1999: 1–31 and other papers in this volume, especially Runia 1999: 33–55 and Vegetti 1999: 333–57.

14.2–6 is highly moralistic,[52] with stress being laid on the energetic pursuit of luxury to the detriment of learning. The first two passages deal with the degeneration of intellectual activity generally. However, in 14.2–6, Pliny indicates that he is situating the decline within a specifically literary tradition: the energy of Hesiod and his successors *inter principia litterarum* is contrasted with later apathy. The careful researches of the past will be lost, 'since general slackness has decreed an utter destruction of records': *desidia rerum internicione memoriae indicta* (14.4).[53] Books were vulnerable, both to human neglect or error, and to accident. A manuscript book was only as good as its copyist.[54] Insects, rodents, the elements and general wear and tear are all attested in our sources.[55] Whether the Alexandrian library was wholly or partly burnt down in the late Republic has been the topic of endless and inconclusive debate in modern scholarship,[56] but the story that it was, together with the consequent threat to the ancient cultural heritage, became emblematic of later expressions of loss, such as the literally cosmic lamentation of the early humanist and friend of Petrarch, Richard de Bury, bishop of Durham and chancellor and treasurer to Edward III.[57] There was, in short, in Cicero and Pliny's time and in the early humanistic period, both self-consciously 'textual' eras, a very real fear of breaking the chain of memory, of losing touch with both past and future and becoming a cultural dead end. In the latter period, an important passage in Petrarch's *Rerum Memorandarum Libri* expresses the same fear in terms very similar to the ancient preoccupations and, I suspect, directly inspired by the Pliny passage. Petrarch's excitement at the rediscovery of ancient texts was tempered by the growing consciousness that much remained missing. His immediate inspiration was, appropriately, the realisation, after reading Suetonius' account

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[52] So too is Petronius *Sat*. 88. The early examples here are in fact of practical experimentation: Democritus experimenting with medicines and Eudoxus making astronomical observations. This may be partly due to its context: the decline in practical artistic creativity. In any case, it is difficult to evaluate given its possibly parodic nature.

[53] *at, Hercules, non reperiuntur qui norint multa ab antiquis prodita: tanto priscorum cura fertilior fuit, ante milia annorum inter principia litterarum Hesiodo praecepta agricolis pandere orso subsecutisque non paucis hanc curam eius; unde nobis crevit labor, quippe cum requirenda iam sint non solum postea inventa, verum etiam ea quae invenerant prisci, desidia rerum internicione memoriae indicta*. 'Still, it must be asserted, we do not find people acquainted with much that has been handed down by the writers of former days: so much more productive was the research of the men of old, or else so much more successful was their industry, when a thousand years ago at the dawn of literature, Hesiod began putting forth rules for agriculture, and not a few writers followed him in these researches — which has been a source of more toil to us, inasmuch as nowadays it is necessary to investigate not only subsequent discoveries but also those that had already been made by the men of old, because general slackness has decreed an utter destruction of records.' (*HN* 14.3–4, tr. H. Rackham).

[54] Strabo 13.1.54; Cic. *QF* 3.5.6; 3.4.5; Martial *Ep*. 2.8; Lucian *Adv. Indoct*. 1.

[55] Hor. *Epist*. 1.20.12; Juv. *Sat*. 3.06.

[56] E.g. Fraser 1972: 334–5; Tarn & Griffith 1966: 270; Blum 1991: 99; Canfora 1989: *passim*; Casson 2001: 45–7; Lindsay 1997: 290–8; Gottschalk 1987: 1079–1174; Too 2010: 38–40.

[57] *horribilem tamen stragem, quae per auxiliaries milites secundo bello Alexandrino contigit in Aegypto, stilo flebili memoramus, ubi septinginta millia voluminum ignibus conflagarunt,….quanta proles Atlantica tunc occubuisse putabitur orbium motus omnes, coniunctiones planetarum, galaxiae naturam et generationes prognosticas cometarum ac quaecunque in caelo fiunt vel aethere, comprehendens!* '... Yet we must tearfully recount the dreadful ruin which was caused in Egypt by the auxiliaries in the Alexandrian war, when seven hundred thousand volumes were consumed by fire….What an Atlantean progeny must be supposed to have then perished, including the motions of the spheres, all the conjunctions of the planets, the nature of the galaxy, and the prognostic generations of comets and all that exists in the heavens or in the ether!' *Philobiblon* 106–7, tr. E. C. Thomas.

of Pliny, that the latter's *German Wars* had apparently not survived with his *Natural History*. In what is almost certainly a conscious echo of *HN* 14.2–6, he berates the sterility and sluggishness of an age which allowed the books of the ancients to perish, depriving future generations of their heritage. The ancients themselves and the generations to come will be blissfully ignorant of this loss;[58] the burden of deprivation falls on him, as he stands on the borders of two 'countries', the past and the future, poised perilously on a cultural fault-line in danger of fracture (*Rer. Mem*. 1.19).[59]

ii) The relative stability of the written word

Yet, despite the physical vulnerability of written texts and the condemnations in various authors of those who neglect to pass on the knowledge of the ancients, ideas were considered more stable in literary format than if they hadn't been written down at all. According to Vitruvius (*Arch*. 7 pref. 1), 'our predecessors, wisely and usefully, proceeded by written records to hand down their ideas to after times, so that they should not perish, but being augmented from age to age and published in book form, they should come step by step to a complete and accurate body of knowledge'.[60] To be

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[58] In the case of the latter, note Cicero's comment that to be ignorant of the past is to remain forever a child: *Or*. 120.

[59] *sed quot preclaros vetustatis auctores, tot posteritatis pudores ac delicta commemoro; que, quasi non contenta proprie sterilitatis infamia, alieni fructus ingenii ac maiorum studiis vigiliisque elaboratos codices intolerabili negligentia perire passa est, cumque nichil ex proprio venturis daret, avitam hereditatem abstulit. primum nempe Plinii opus, in quo, ut est apud Tranquillum, omnia bella tractaverat "que cum Romanis unquam gesta sunt", ex oculis nostris evanuit, nec usquam superest, quod ego quidem talium satis ardens explorator audierim. hoc autem et quicquid in hanc sententiam questus sum non ad minuendum post nascituri populi studium retuli, quin dolorem meum potius effundens et etati, curiosissime in quibus non oportet, rerum tamen honestarum prorsus incuriose, soporem ac torporem exprobans. equidem apud maiores nostros nichil querimonie similes invenio, nimirum quia nichil similes iacture; cuius ad nepotes nostros, si ut auguror res eunt, forte nec sensus ullus nec notitia pervenisset; ita apud alios integra, apud alios ignorata omnia, apud neutros lamentandi materia. ego itaque, cui nec dolendi ratio deest nec ignorantie solamen adest, velut in confinio duorum populorum constitus ac simul ante retroque prospiciens, hanc non acceptam a patribus querelam ad posteros deferre volui*. 'Not content with the disgrace of their own sterility, they have allowed the fruits of other minds and the books composed through our ancestors' zealous devotion to study to perish and, while giving nothing themselves to future generations, they have deprived them of their ancestral heritage. In particular, the History of Pliny in which, according to Suetonius, he recorded all the wars ever fought by Rome, has vanished from sight and no longer survives, so far as I, an enthusiastic seeker of such things, have heard. This and similar complaints I have set forth, not to diminish the studies of the next generation, so much as to pour forth my grief and castigate the sluggishness and torpor of an age which is overly curious about things which are unbecoming, while totally incurious about things which are worthy. I find no similar cause for complaint among our ancestors, not surprisingly, since there is no similar destruction — a destruction of which, if things go as I predict, our descendents may possibly not have any awareness or indication. For among our ancestors all remained intact, while among our descendents all will be unknown and so neither has any cause for lamentation. I therefore, who have a reason to grieve and lack the solace of ignorance, and stand as it were on the border between two countries looking simultaneously forward and backward, did not want to pass on to posterity the blame incurred by their forefathers.' (*Rerum Memorandarum Libri* I.19). Compare his lamentation over the lost books of Livy and his concern that, unless the present age gets its act together, Livy will suffer in reality the *damnatio memoriae* Caligula threatened to impose on him and Virgil by removing their works from Rome's libraries (*Rer. Mem*. I.18: *…nubem oblivionis, quam non attulit imperiosa crudelitas, afferat sensim incuriosa segnities*.)

[60] Tr. Granger. *maiores cum sapienter tum etiam utiliter instituerunt, per commentariorum relationes cogita tradere posteris, ut ea non interirent, sed singulis aetatibus crescentia voluminibus edita gradatim pervenirent vetustatibus ad summam doctrinarum subtilitatem*.

sure, Pliny[61] accuses some contemporaries of suppressing ancient discoveries to enhance their own prestige (*HN* 25.1) and, later, Galen speaks scathingly of those whom he has taught who are not writing down their ideas, thus threatening the survival of anatomical knowledge (*Anat. Admin*. II.283). In these passages, Pliny implicitly and Galen explicitly are speaking of ideas passed down within the framework of a literary tradition. But when Pliny comments on the refusal of illiterates to pass on their oral knowledge (*HN* 25.16) the problem is by implication even more acute, for, in this instance, even the general methodologies of a literate tradition, with its recognised means of communication and recording, are lacking. These provide a sort of safety-net, a universal framework, independent of close-knit temporal or geographical connexions, in which information can be transported and preserved in and for different ages and communities. Galen's history of the change from oral to written instruction in anatomy (*Anat. Admin*. I.280–3) may be fantasy, but within it is embedded a similar idea: oral teaching, he argues, had worked within an enclosed familial tradition, but could not adapt to the emergence of a less homogenous clientele. Within the well-established framework of a universalised literary tradition, on the other hand, individual defaulters, although potentially damaging, are less likely to cause an irreparable rift in the fabric of that tradition's continuity.

iii) Preservation of the textual tradition

Vitruvius in the passage just quoted suggests that the ancient cultural heritage was to be passed from one generation to the next through the medium of the written word, 'so that it should not perish but be augmented'. This implied a tendency to preservation and addition rather than radical revision and it is perhaps significant that Pliny's main boast in his preface (17) was not that he had made exciting new discoveries on his own account, but that he had done humanity a service by collecting together 20,000 facts from 100 authors. That there was an element of 'heritage rescue' here is indicated by the description of the majority of these works as abstruse volumes with a limited audience. Personal investigation there has certainly been – but it is an investigation in and through books (*exquisitis auctoribus*) which he decides to highlight in this context. Additonal material not found in these literary predecessors is also mentioned, but in a peculiarly impersonal way, as 'facts discovered by subsequent experience' (*postea invenerat vita*). It has often been suggested that ancient knowledge was somehow regarded as depersonalised; Seneca, advising his friend Lucilius about writing on the well-worn topic of Mt. Etna, had described the work of earlier writers as common property (*Ep*. 79.7), a fact which made the latest writer's task easier.[62] While it could be argued that an unchanging core of knowledge to which miscellaneous additions were made over time was a guarantee of stability it could equally

[61] *at nos elaborata his [priscis] abscondere ac supprimere cupimus et fraudare vitam etiam alienis bonis. ita certe recondunt qui pauca aliqua novere invidentes aliis, et neminem docere in auctoritatem scientiae est*. 'But we moderns desire to hide and suppress the discoveries worked out by these investigators and to cheat human life even of the good things which have been won by others. Yes indeed, those who have gained a little knowledge keep it in a grudging spirit secret to themselves, and to teach nobody else increases the prestige of their learning.' He goes on (25.4 ff.) to discuss those in earlier generations who had *written* on herbal medicine.

[62] *praeterea condicio optima est ultimi; parata verba invenit, quae aliter instructa novam faciem habent*. See Murphy 2004: 62.

well be indicative of a tradition which was essentially dead and in danger of crumbling through inertia. I would suggest, however, that the notion of 'common property' could on occasion be modified in ways which gave the literary tradition a strength and vitality which paradoxically enhanced its overall stability. The first of these concerns the augmentation of the tradition, the manner in which the 'property' was moulded over successive eras, while the second concerns the preservation of individual contributors to the 'common' tradition.

Firstly, as Vitruvius implied, successive writers were supposed to add something new to the tradition: the ancients handed down their ideas 'so that they might be augmented from age to age' (*Arch*. 7.pref.1). Even if the latest writer on a topic had the easiest task, it did not follow that his work was entirely made up of old material rearranged. Seneca, in the letter mentioned above, specifically says that the topic he is recommending to Lucilius has been by no means exhausted by earlier writers (*Ep*. 79.5). Elsewhere, he comments that knowledge can be augmented only by breaking away from paths forged by our predecessors, who should be seen as *duces*, not *domini* (*Ep*. 33.11): 'take command and say something which can be handed down to posterity' (*ibid*., 7).[63] Pliny, commenting on his own dependence on Aristotle, claims he is presenting a compendium of the latter's facts, together with ones unknown to him (8.44). Petrarch later condemned those who carelessly neglected the cultural tradition for compounding the offence by not contributing anything on their own account. 'Not content with their own sterility, they have allowed the fruits of other minds and the books composed through the zealous devotion to study of our ancestors to perish and, while giving nothing themselves to future generations, they have deprived them of their ancestral heritage!' (*Rer. Mem*. 1.19).[64]

As we have seen (II.ii), these additions are not necessarily the fruits of systematic personal investigation. The odd personal observation might certainly be thrown in. But so too might information from a third party, a piece of common lore apparently not enshrined in literature to date, and above all material in a literary source unknown or inaccessible to other writers on a particular topic: despite his occasional dalliance with practical botany, Pliny's facts 'unknown to Aristotle' were not primarily his own personal discoveries.[65] All these could count as 'new'. Nor is there a comprehensive revision of earlier material. To this extent, the ancient literary tradition of knowledge is monolithic and foreign to modern ideas of scientific investigation and progress. However (if we can push the analogy further), it is not petrified. Successive contributions can be made more subtly than by a simple 'cut and paste' method. The frequent use in Latin of the verb *contexo* to describe the compositional process is particularly appropriate in this instance. When describing Atticus' *Liber Annalis*, Cicero talks of the records of history 'weaving' (*contexitur*) (contemporary) human life into the life of the ancestors (*Or*. 120). One of the options open to the historian Lucceius is to 'weave' the events of Cicero's consulship into an account of the wider history of the period (*Fam*. 5.12.2). Applied to the transcription and transmission of knowledge, compositional 'weaving' suggests integration rather than simple accumulation, resulting in a

[63] *Impera, et dic quod memoriae tradatur*.

[64] See above, n. 59.

[65] Indeed, the passage bears a close resemblance to one in the paradoxographical writer Antigonus of Carystus (60 Giannini), in which he praises Aristotle's works on animals and says he will be using these and some others as well.

stronger overall texture for the intellectual tradition. The resulting body of knowledge was neither static nor inert: the basic material was continually reworked, with additions and modifications, by the ongoing creativity of successive writers. The metaphor of creativity drawn from craft and technology, this time metallurgical, was to appear again when Richard de Bury (158–63) described the heritage of ancient knowledge as a gradual accumulation which was simultaneously subject to a continuous process of refinement as it was repeatedly melted down and passed through a furnace (158).[66]

The second point can be made more briefly. Nobody could claim that systematic acknowledgment of sources was a feature of ancient literary knowledge. Yet, the 'common tradition' did not always entail the suppression of individual identity. Vitruvius recounted a couple of anecdotes for the purpose of condemning both plagiarism and slanderous attacks on dead authors (*Arch*. 7. pref. 1–7) and acknowledges his own debt to earlier writers, discussing some of them (7. pref. 10; 11–14). Pliny of course made an attempt at individual acknowledgment by listing many of his sources in the indexes of book 2 of the *HN*. Such acknowledgments were not necessarily altruistic. As we have seen,[67] they usually served to enhance the *auctoritas* of the citer and to give facts more credibility.[68] By acknowledging bonds of continuity between past and present contributors, the latter enhanced the overall stability of the tradition of knowledge, just as they did in the crafting of their inherited material.

iv) Texts transcending time

However, this interaction of the present with the past went well beyond the intermittent acknowledgment of sources. In an extension of the commonplace by which literary learning could transcend temporal and spatial limits, expressed for example in Cicero and Diodorus Siculus,[69] the committed book-lover could endow his actual books with personal qualities which in effect extended his interaction with learned associates beyond the confines of time and place. The language used derived once again from the adaptation to the cultural sphere of the conventions of the social and political life of the élite discussed earlier; as indeed did the language used by Pliny in justifying his

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[66] *sed per plurimorum investigationes sollicitas, quasi datis symbolis singillatim, scientiarum ingentia corpora ad immensas, quas cernimus, quantitates successivis augmentationibus succreverunt. semper namque discipuli, magistrorum sententias iterate furnace liquantes, praeneglectam scoriam excoxerunt, donec fieret aurum electrum probatum terrae purgatum septuplum et perfecte, nullius erronei vel dubii admixtione fucatum*. '[We know that] by the anxious investigations of a multitude of scholars, each as it were contributing his share, the mighty bodies of the sciences have grown by successive augmentations to the immense bulk we now behold. For the disciples continually melting down the doctrines of their masters and passing them again through the furnace, drove off the dross that had been previously overlooked, until there came out refined gold tried in a furnace of earth, purified seven times to perfection, and stained by no admixture of error or doubt' (*Philobiblon* 158). On de Bury and the 'cumulative' tradition, see Beagon forthcoming, 2013.

[67] Above, p. 10.

[68] It is noticeable that such citations are particularly prevalent among purveyors of marvels (see Schepens & Delcroix 1996: 385–8). In fact, it could be claimed that another paradox of paradoxography was that a genre sometimes spurned as derivative had the effect of revitalising material which might otherwise have become fossilised and decayed in anonymity.

[69] Diodorus Siculus 12.13.1–3: by writing the dead are remembered; by writing those separated can converse as if they were neighbours; Cicero in the *Pro Archia* 16: *litterae* accompany us at night, on our travels and in the country.

listing of sources.[70] Cicero talks of his books as friends, who in one letter need to be reintegrated into his *amicitia* network after a period of neglect (*Fam*. 9.1.2). Their collective presence, in a newly-organised villa library, gives the house a mind, brings it alive (*Att*. 4.8.2). Vitruvius extended the imagery of literary *amicitia* to include the concept of a time-transcending *consilium*, the giving and receiving of advice in a more or less formal context, which formed part of the duties of élite friendship. The *sententiae* of the ancient writers are present at our *consilia et disputationes* even if they are absent in body, and carry even greater *auctoritas* than if they were literally present (9.pref.17).[71]

The vividness of this personification motif is really only one step beyond Vitruvius' assertion that the virtual presence of an author could be elicited by sufficient empathy with their writings: admirers of Ennius, he says, will carry his *simulacrum* around with them in their hearts, while the devotees of Accius seem to have by them not just his words but his actual *figura* (9 pref. 16–7).[72] In this context, we should also remind ourselves of the actual physical portrayal of writers in the statues and portraits of the libraries, and Pliny's anxiety to enhance a personalised memory of authors through their literal presence in such representations (35.9–11). It was through their books that 'their immortal spirits speak' but, Pliny suggests, the reader likes to clothe the spiritual in a distinctive and unique physical image: portrait busts in libraries are symptomatic of this desire to know *qualis fuerit aliquis* (35.10).[73]

Veteres auctores spoke through their books, creating ties of *amicitia* across the ages. They were accorded at one and the same time the intimacy due to contemporary friends and the reverence due to older, more senior advisors. Their presence was physically recreated in the portraits of Rome's libraries.

To sum up so far: that tradition bestowed authority, and antiquity encouraged veneration is generally agreed. In addition, however, we saw that the 'weaving' of the past into the present lessened the danger of a rift which would jeopardise the continuance of the intellectual heritage into later generations. This in turn ensured that the heritage was at once a stable but at the same time an ever-living, almost animate, entity. The extreme personification of authors through their texts just discussed enhanced this stable vitality: the result, in Vitruvius' words, was that the ancient writers 'flourished in their antiquity': *vetustate florentes*.[74]

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[70] *Pref*. 21–3. Most obviously, perhaps, that of reciprocal loans and favours (see Murphy 2004: 23), but also the *dignitas* or reputation of the individual. Many writers may have striven to enhance their own repute without thought for that of their sources. Not repaying a loan '*obnoxii profecto animi et infelicis ingenii est*' (pref. 23) but *obnoxius* can imply a diminishing and demeaning of the defaulter much wider than the notion of 'putting him under obligation' might imply in English.

[71] *…ad summam sapientium scriptorum sententiae corporibus absentibus vetustate florentes cum insunt inter consilia et disputationes, maiores habent, quam praesentium sunt, auctoritates omnes*.

[72] Vitruvius talks of carrying around this *simulacrum* as though it were that of a god; Pliny's nephew suggests that Silius Italicus, whose fine collection of libraries housed statues and portrait busts as well as books, regarded his favourite authors as gods (*Ep*. 3.7). While Vitruvius' images seem to be figurative, those of others were not: Zanker 1995: 205–6.

[73] Above, p. 10.

[74] Above, n. 71.

v) Texts transcending space

If the relationship between text and time was multifaceted, so too was that between text and space.[75] Many Greek writers from Herodotus onwards, including Posidonius, Pausanias and Strabo, did travel, picking up first-hand information of various kinds to use in their works.[76] Cicero mentions the tradition that the philosophers Pythagoras, Plato and Democritus travelled to gain knowledge (*Fin*. 5.50). Yet travel did not necessarily encourage the privileging of first-hand information over books. Pliny held official posts which ensured that he was widely travelled for his era. Yet, as we have seen, his store of personal experiences is only sporadically visible in his writings.

The problem was that travel too often failed to offer the breadth of knowledge that books did. In his *Geography*, Strabo suggests that using second-hand accounts, verbal or written, is the only practical way of ensuring that the writer conveys an overall picture rather than a broken series of particularities: the second-hand material can be processed by the mind just like direct sense impressions, to create the larger view (2.5.11, C117).[77] Indeed, the necessity of privileging first-hand over indirect information was by no means obvious. Aristotle himself had recognised that direct observations could be just as fallible as indirect report, commonly-accepted ideas or, indeed, by implication, the opinions of others as given in texts, and that, conversely, such indirect information could be reliable (Owen 1975: 113–8, esp. 117).

Significantly, Strabo compares the writer's role to that of a general, who needs to delegate authority and use reports brought to him by scouts (2.5.11, C117). We may recall once more the preference for the *auctoritas* of the overseeing commander which, it was suggested (above, II.iv), may have coloured the attitudes of the Roman élite in their preference for the book over the personal acquisition of individual nuggets of empirical knowledge, devalued and trivialised by their lack of context. Pliny notes that the *commentarii* of those who had never visited a place often provided more reliable information than could be obtained from the inhabitants (2.117).[78] Both here, and in the 'decline' passage 14.2–6 already discussed, travel or the potential for travel is no guarantee of increased intellectual achievement.

Books were an intellectual lifeline; country vacations in Cicero's era involved summoning literary reinforcements from town and borrowing from neighbours[79] to supplement the libraries held in villas. But, if this was cultural conditioning, it was a conditioning at least partially entrenched by the kind of difficulty suggested by Strabo. It

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[75] The straightforward figurative commonplace that you can travel anywhere in a book was later expressed at length and with considerable verve by de Bury (*Philobiblon* 197–200).

[76] *Theoria*, travelling to see and learn: Dillon 1997: 1–26; Rutherford 2001: 40–52; Hartog 2001: *passim*, esp. 90–1; O'Sullivan 2006: 140.

[77] Early in the nineteenth century, Georges Cuvier suggested that the study naturalist possessed an advantage over colleagues in the field. The study was by now lined with specimens as well as books, but the contrast between the field naturalist's vivid but fleeting impressions, as opposed to the study naturalist's leisure to compare his specimens and contextualise them with the aid of his books echoes the spirit of Strabo's point. See Outram 1984: 62–3; 1996: 259–63; Leask 2002: 284–7.

[78] *...ut hodie quaedam in suo quisque tractu ex eorum commentariis qui numquam eo accessere verius noscat quam indigenarum scientia…* '…so that nowadays a person may learn some facts about his region more truly than from the knowledge of the natives…'. The context is the perceived slackening of learning in today's imperial peace, contrasted with the greater output of those who had been geographically confined by the earlier dangers of war and piracy.

[79] *Att*. 8.11.7; 13.31.1; 13.32.2; 4.10.1; *Fin*.3.2.7: cf. Cat. 68.31.

should therefore be less surprising if travel was more often used to expand the library than the experience. Cicero, so loathe to leave Rome for any reason, saw nothing odd in attempting to write a geography entirely from literary sources perused in his study at Antium.[80] Only to a modern observer does his choice of subject appear ironic.

Conclusions

We have seen that first-hand empirical investigation could in some instances be seen by the educated upper classes of Rome as impractical, disreputable, unethical or anti-social. Even in areas of activity with positive overtones, such as farming, there may still have been a preference for keeping to the overall direction of operations, reflecting their military and civil role in society as a whole. Dissecting a book, perhaps over dinner with friends, was not only more convenient than cutting up fish or even plants, but was also closely assimilated to the social and political ethos which determined their lives and careers.

On the other hand, I have also suggested that the Roman élite may not have been devoid of interest in such investigations, even in the late Republic. We cannot prove that Nigidius Figulus was a 'hands on' *physicus*, but he seems to have had the independence of mind to make this a possibility. We do know that, in the early empire, technical/practical interests were being increasingly pursued, particularly by a now officially politicised equestrian order. By the time of Apuleius, a Latin-speaking philosopher could apparently follow in the footsteps of Aristotle and pursue a surprisingly modern programme of integrated literary and practical researches in his pursuit of natural science, while upper-class observers might attend the anatomical demonstrations of an eminent *medicus* and philosopher. In addition, the comments of Aristotle and Strabo discussed above (p. 23–4) show that the concept of first-hand observation was recognised and a difference between this and what was to be discovered indirectly was appreciated.

However, I have suggested a number of possible reasons for the favour frequently accorded to text over experience. The textual tradition, though in many respects monolithic, was by no means dead and petrified and was perceived as a vital, even animate, entity: a literary corpus, so to speak, in which the writers are a living presence rather than a dead collective and the writings of past and present form a continuum. It is even worth considering whether the ancient experience of books was so very different from that of a *physicus* examining a natural specimen. The manuscript book, whether roll or codex, had a multi-sensory relationship with readers. It was they who transcribed, corrected and annotated the text, thus in effect dissecting it physically as well as mentally (Zetzel 1981: 232–9). Truth in a book can be comprehended by all the senses according to de Bury: 'It commends itself to the sight when it is read, to the hearing when it is heard, and moreover in a manner to the touch, when it suffers itself to be transcribed, bound, corrected and preserved' (*Philobibl*. 23).[81]

The features of this 'living' tradition most critical to understanding the favour accorded to it in the assimilation of knowledge are its perceived stability and its

[80] *Att*. 2.6.1 cf. 2.4.1; 2.20.6; 2.22.7.

[81] *veritas vero quae lucet in libris omni se disciplinabili sensui manifestare desiderat. visui dum legitur, auditui dum auditur, amplius et tactui se commendat quodammodo, dum transcribi se sustinet, colligari, corrigi et servari*. Cf. *Philobibl*. 24–5.

ability to comprehend the wider view. With regard to stability, we saw that, while revision was a matter of honing and modification rather than radical overthrowing of previous ideas, the body of knowledge preserved nonetheless grew over time. Contemporary writings had those of the past 'woven' into them, even if these were not always acknowledged. With regard to comprehensiveness of outlook, the lone intellectual was necessarily confined to a narrow span of temporal and spatial experience. But by interacting with his literary *amici* through their books, he achieved an intellectual liberation and fulfilment transcending time and space.

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