

KATHARINA SCHONEVELD, Illustrationen zur Kriegstechnik in byzantinischen Handschriften. Transfer und Adaption antiken Wissens in Byzanz (Byzanz und die euromediterranen Kriegskulturen 2). Göttingen: V & R Unipress 2024. 668 pp. – ISBN 978-3-8471-1648-6

• PHILIP RANCE, Freie Universität Berlin (rance@zedat.fu-berlin.de)

The adage “a picture is worth a thousand words” seems particularly applicable to an ancient Greek technological treatise that, for much of its history, is likely to have been a closed book for most readers, whether ancient and medieval Hellenophones, baffled by technical content, or Greekless Westerners. At once familiar and surprising, coloured illustrations figure prominently in Byzantine manuscripts of classical writings on siegecraft and artillery, conventionally termed *poliorketika* and *belopoiika*. While certain details may be opaque and perspectives disconcerting, such images can immediately convey an understanding of the form, proportions, components and use of diverse machinery, and fix an idea of that complex artefact in the viewer’s mind more effectively than the most clearly written explanation. If comparisons with modern blueprints and assembly manuals are tempting, scholarship has long sought to distinguish contemporary representational, didactic and scientific priorities in these visualisations of machines, though thorough and compelling analyses were lacking. KATHARINA SCHONEVELD’s monograph fulfills that long-standing desideratum. This book originates as a doctoral dissertation (Friedrich-Alexander-Universität Erlangen-Nürnberg 2022) undertaken within the framework of the DFG-funded Graduiertenkolleg (2304) “Byzanz und die euromediterranen Kriegskulturen: Austausch, Abgrenzung und Rezeption”, based at the Johannes-Gutenberg-Universität Mainz. To some extent, SCHONEVELD’s project is a product of its time, insofar as digitizing technologies unavailable barely a decade ago now permit detailed comparative analysis of pictorial variants in numerous manuscripts online, in addition to her first-hand consultation of major collections. Even so, the aims, arguments and implications of this inquiry challenge many assumptions and deductions of prior studies and establish new starting points for further research. Previous scholarly approaches tended to value transmitted images largely or solely as historical evidence for reconstructing ancient technology and scrutinised these medieval iterations in the hope they might reveal

underlying Hellenistic or Roman archetypes. Limited interest in illustrations per se, typically within general studies of ancient book illumination, formulated models of stylistic categorisation on the basis of small samples and often a poor understanding of the genre. In contrast, SCHONEVELD (S.) intends a comprehensive and systematic study of the character, purpose, development and transmission of the illustrations, not as a means of tracing an (arguably unattainable) *Urbild*, but as objects of intrinsic interest and significance, which document the artistic and scientific engagement of Byzantine illustrators-copyists with a classical heritage of military-technological literature, and thereby elucidate iconographic diversity and change, technical exposition, knowledge transfer and military culture in the middle Byzantine period. By extending her inquiry to late medieval/early Renaissance western Europe, S. variously pursues these themes beyond their original creative contexts, primarily via humanist copies of Byzantine manuscripts, and contributes to a broader appreciation of the impact of this Byzantine legacy. The book comprises four large, multipart sections: I: introduction (works, manuscripts, prior scholarship, research goals and methods); II: image analysis; III: tradition and change; IV: reception; with V: conclusion; VI: catalogue of manuscripts; and colour plates. As a reader who has long studied the textual tradition of ancient and Byzantine military literature, I found S.'s investigation of its pictorial tradition fascinating, abounding in fresh insights and worthy of serious consideration. The scope of the inquiry is impressive, without becoming too digressive, as S. integrates a large body of material, ideas and bibliography, parts of which might alone have formed the basis of a dissertation. Perhaps inevitably, there are aspects on which I have reservations, which in turn reflect on methodological questions, but these are not obstacles to S.'s overall thesis. The length of my comments reflects interest rather than criticism.

Section I introduces the object of study: illustrated texts and their manuscript tradition(s). A simplified summary is necessary to appreciate the range, nature and purpose of S.'s book (and to comprehend this review). The essential material is a selection of Hellenistic and Roman poliorcetic-belopoeic treatises: chronologically Biton, Philo of Byzantium, Athenaeus, Heron of Alexandria and Apollodorus of Damascus. These works are variously transmitted as a thematic corpus, compiled at an unknown date, but certainly by the late ninth/early tenth century. The corpus is found in five primary manuscripts. The oldest, early tenth-century Paris, BnF, suppl. gr. 607 (M), represents the most 'authentic' tradition. Excerpts in fourteenth-century Vienna, ÖNB, phil. gr. 120 (F) generally align with

M. In contrast, three early eleventh-century codices bear witness to recent editorial intervention: Vatican, BAV, Vat. gr. 1164 (V), Paris, BnF, gr. 2442 (P) and Escorial Y-III-11 (E). Numerous studies, starting with CARLE WESCHER's pioneering critical edition (1867), have recognised that VPE are closely related and descend from a hyparchetype dateable to the later tenth century. Majority opinion holds that V and P are 'twins', independently copied from that parent, while E is an apograph of V. In addition to this direct tradition, in the 930s/940s an anonymous author selectively re-worked material from this corpus of ancient works. Conventionally styled *Parangelmata poliorcetica* (ParPol), this compilation is uniquely transmitted via eleventh-century Vatican, BAV, Vat. gr. 1605 (V¹), with a later spurious ascription to a "Heron". In short, S. sets herself the task of examining the pictorial tradition of this poliorcetic corpus, initially in five tenth-/eleventh-century codices (MFVPE) and a tenth-century adaptation (ParPol), and thence through their post-Byzantine western copies, mostly of the late fifteenth and sixteenth centuries (of which by far the greatest number descend from E). Some technical issues merit comment. First, regarding the date and origin of the corpus of classical *poliorcetica*, S. briefly notes possibilities, but declines to speculate (pp. 21–22, 299). As a close, though not decisive, comparandum, one could adduce the well-known corpus of classical *tactica* transmitted in mid-tenth-century Florence, BML, Plut. 55.4. Despite a novel attempt to retroject the compilation of this tactical corpus into distant antiquity, its recent assemblage is revealed by the fact that constituent works have been copied from different antigraphs, some still in majuscule script, but at least one already in minuscule, indicative of previously separate transmission. If the poliorcetic corpus is ancient, it would therefore be alone in this respect.¹ Second, military books/sections from Philo's *Mechanica syntaxis* are included in the poliorcetic corpus in VPE and were also present in the exemplar of the corpus used by the author

1. See PHILIP RANCE, The Reception of Aineias' *Poliorketika* in Byzantine Military Literature. In: MARIA PRETZLER – NICK BARLEY (eds), *Brill's Companion to Aineias Tacticus* (Brill's Companions to Classical Studies). Leiden – Boston 2017, pp. 290–373 at 305–307, with n. 44. The antigraphs of the tactical texts appear also to have suffered differing patterns of physical damage that point to separate prior transmission. These features preclude a recent hypothesis that Arrian, the latest author included in the tactical corpus, was also its compiler: PIERRE-OLIVIER LEROY (ed.), *Arrien, L'Art tactique, Histoire de la Succession d'Alexandre*. Paris 2017, pp. 49–52; IDEM, *Historiography and Tactics: some thoughts about the dating of Arrian's Anabasis*. In: ROBERT ROLLINGER – JULIAN DEGEN (eds), *The World of Alexander in Perspective: Contextualizing Arrian*. Wiesbaden 2022, pp. 161–187 at 170–172.

of ParPol. Nothing of Philo is found in M or the excerpts in F. Accordingly, S. concludes (pp. 22–23, 36, 303–304, 309–310) that Philo’s writings must have been a later addition to an ancestor of VPE and of ParPol, and not, contrariwise, previously lost from traditions represented by M and F. Without evidence to validate either scenario, this question should remain open. Third, throughout her study S. prefers to call the hyparchetype of VPE “die byzantinische Rezension”, a designation modelled on WESCHER’s “recension byzantine”, though he never properly explained what he meant beyond a vaguely defined redactional stage, and this label has rarely been used since.² S. largely eschews ALPHONSE DAIN’s renaming of the hyparchetype as “Mazoneus” (after a colleague), idiosyncratic to be sure, but widely adopted in scholarship. S. (p. 39) does summarise DAIN’s precise demonstration of the content and character of this lost codex, produced in/after the 970s, which contained, in effect, a ‘new collected edition’ of the poliorcetic corpus and conjoined works on tactics and generalship. Even so, elsewhere in S.’s monograph, the nature and significance of “Mazoneus”, as a specific reconstructable exemplar, created by a particular editor (and not merely “hypothetisch”: pp. 286, 501), seems somewhat underappreciated or, at least, underexploited as a codicological framework within which to establish stemmatic relationships between VPE and their copies (see below).³

Comprising almost half of the volume, Section II is a comprehensive exercise in data collection and pictorial analysis (Bildanalyse). S. compiles a detailed catalogue of illustrations in poliorcetic-belopoeic treatises, arranged thematically according to technological category, irrespective of an image’s position in a manuscript. She usefully tabulates the pictorial content of all works in all witnesses (pp. 64–65). With the basic goal of

2. CARLE WESCHER, *Poliorcétique des Grecs*. Paris 1867, pp. xxxvii–xxxix.

3. S. cites ALPHONSE DAIN’s, *Histoire du texte d’Élien le Tacticien des origines à la fin du Moyen Âge*. Paris 1946, pp. 203–223; see additional demonstration in IDEM, *Inventaire raisonné des cents manuscrits des «Constitutions tactiques» de Léon VI le Sage*. Scriptorium 1 (1946) pp. 33–49 at 40–42. Recently, MARINA KURYSHEVA has sought to radically redate V and P to 969, half a century earlier than their conventional dating, based on her analysis of palaeography and content. In doing so, she eliminates their hyparchetype, apparently conceiving V and P as, somehow, twin archetypes, identical, even in errors and displacements, but without a common parent, and thereby rejects, neglects and/or misunderstands over a century and a half of textual scholarship. See: К методике датирования греческих рукописей 960-х гг. (на примере Vat. gr. 1164, Paris. gr. 2442 и Barb. gr. 276). Электронный научно-образовательный Журнал. «История» 11/ 9 (95) (2020).

exploring how machines and their functions are visualised, S. aims to detect and decipher elements of a visual language (Bildsprache) using consistent rubrics: “textual basis and explanation” (Textgrundlage und Erläuterung), “placement in the text” (Stellung im Text), “image description” (Bildbeschreibung) and “interpretation” (Deutung). In each case, S. initially explains the device – its purpose, mechanism and application – and summarises accompanying Greek text. She also adduces external evidence, typically from middle Byzantine historiography and meagre archaeological finds, along with comparanda from other eras, to determine the contemporary utility of such technology and, by extension, to what extent classical works were copied to preserve ancient knowledge for its own sake or with a view to its practical implementation in siegecraft, accepting that modern assessments of ‘relevance’ may entail anachronism. S. then describes all images of each device and registers variations (Bildvarianten) between manuscripts as a basis for distinguishing common artistic conventions and differing illustrative styles, distinct from traits particular to one illustrator. While the assembled data is primarily intended for analysis of pictorial development and transmission (Section III), this catalogue will become an important resource for future research and can be profitably read by those with narrower military-historical or technological interests. The second part of Section II offers essential observations on transmitted images, including number, distribution and subject, noting disproportionate interest in diverse mantlets compared to complex artillery and lifting devices, as well as iconographic aspects: form (schematic or representational), perspective (plan, elevation or three-dimensional projection), colouration, labelling, text-image referencing and pictorial setting. S. stresses the intentionality of some variations, most evidently when divergence is uniformly traceable across the poliorcetic corpus, and coincides with long-recognised branches of the textual tradition. This section concludes with a critique of prior typologies of illustrations, notably KURT WEITZMANN’s simpler notions of character, purpose and chronological development, based on limited evidence and inevitably provisional.

Section III, devoted to the transmission of the illustrations, is the most innovative but may, in some respects, prove contentious. It is best read in combination with the “Handschriftenkatalog” appended to the volume. S. observes that every preceding stemma codicum of poliorcetic treatises is based solely on textual analysis, often of a single author or work, while image-critical (bildkritisch) analysis, though not a new concept, has played little or no role. This is hardly surprising in light of traditional editorial prin-

ciples, which, if they consider images at all, assume the greater precision of *constitutio textus*. In response, S. proposes to construct a “bildkritisches” stemma, based only on pictorial analysis, irrespective of demonstrated textual traditions. She seeks to answer two main questions. To what extent can image-critical analyses contribute to understanding manuscript transmission? More specifically, are text and image always transmitted in unison or can they have separate traditions? In answer to this second – and more consequential – question, S.’s analysis clearly shows that, sometimes, images were copied from a different exemplar or from multiple exemplars (a ‘contaminated’ tradition). While this plan is promising, some aspects of its execution may confound readers less familiar with the material. S. rehearses all previous (text-analytical) stemmata, from WESCHER (1867) onwards, even those that are incomplete, provably wrong and long abandoned, in some cases by their own authors. Instead of a lengthy sequence of superseded views, it might have been preferable to start with the current consensus – or, at least, majority opinion – and to note any residual points of dispute. In addition, S.’s focus on particular illustrated poliorcetic works, rather than the entire contents of VPE, which include many tactical treatises, leads to a partial exposition of some issues and bibliography.⁴ Nonetheless, S. (pp. 288–291) correctly detects errors and weaknesses in the most recent stemma (MAURIZIO GATTO’s edition of Athenaeus), on both pictorial and textual grounds.⁵ In any case, the broader lessons learned easily justify S.’s endeavour. She insightfully addresses the underlying dynamics and interpretative hazards of pictorial criticism, arguing that illustrators were unlikely to have been subject to the same working practices as governed general scribes, while image and text, in the course of transmission, undergo different processes and degrees of change, accidental and intentional. In particular, variations in a copied image should not be treated as necessarily ‘errors’, any more than a metaphrasis or paraphrase of a text. An illustrator may likewise aim at greater clarity and/or artistry,

4. For example, S. cites no studies of Philo’s poliorcetic writings (presumably because they are unillustrated?), in which the current consensus that V and P are “gemelli”, and E a copy of V, can be traced back to RICHARD SCHÖNE (ed.), *Philonis Mechanicae syntaxis libri quartus et quintus*. Berlin 1893, pp. v–vii. With respect to the conjoined tactical treatises in VPE, important demonstrations include e.g. GEORGE T. DENNIS (ed.), *Das Strategikon des Maurikios*, with German transl. ERNST GAMILLSCHEG (CFHB 17). Vienna 1981, pp. 20–21, 33–36.

5. MAURIZIO GATTO, *Il Περὶ μηχανημάτων di Ateneo Meccanico*. Edizione critica, traduzione, commento e note. Rome 2010. Throughout S. justly criticises GATTO’s stemmatic analysis.

with the corollary that the most complete, pleasing or accurate-seeming version of an illustration may not be the most ‘authentic’, further complicating any illusive pursuit of a classical archetype. Moreover, S. challenges assumptions about ‘ancient’ and ‘Byzantine’ elements, rejecting prior notions of illustrative development and demonstrating that representational and schematic aspects, previously considered successive or bifurcated traditions, were always part of a single, if more complex pictorial heritage. S.’s image-critical analysis more persuasively isolates ‘Byzantine’ contributions, notably in perspective, colouration, texture and setting, while addressing conceptual questions of didactic purpose and intended audience. With respect to specific stemmatic relationships, the merits of S.’s approach are most apparent for certain post-Byzantine *recentiores* (pp. 317–321), partly because they have attracted less philological interest, though scholarship may require time to digest all the implications (see the Appendix to this review). Regarding the medieval codices, S.’s most significant conclusions affect two questions: the pictorial sources of the *Parangelmata polioretica* (ParPol) and the interrelationship of V, P and E. In the first case, S. seeks to combine textual and pictorial evidence. Her preliminary attempt (pp. 303–304 n. 771), contrary to preceding studies, to realign the textual descent of ParPol away from MF towards VP is unconvincing, based as it is on a single shared correct reading (in my view, not diagnostic) in ParPol and VP, against shared errors (a firmer basis of stemmatic affiliation) in ParPol and M/F.⁶ In any case, the intricacy of this issue would require full analysis, which the variously limited apparatus critici of the three editions (WESCHER 1867, SCHNEIDER 1907, SULLIVAN 2000) do not permit. In contrast, S.’s meticulous pictorial analysis yields many interesting insights, even if it is not always entirely clear which of the prior stages of “eine gemeinsame Bildtradition” she is seeking to identify, reconstruct and/or link, distinct from merely drawing parallels between certain illustrations in particular surviving manuscripts. Chronology remains problematic insofar as the hyparchetype of VP (“recension byzantine”/“Mazoneus”), owing to its content, cannot predate c. 970, and thus necessarily postdates the original composition of ParPol in the 930s/940s, while VP and the earliest extant

6. See WESCHER, *Polioretique*, pp. xxxvii–xxxix, 263 (app. crit. l. 3); ALPHONSE DAIN, *La tradition du texte d’Héron de Byzance*. Paris 1933, pp. 19–21. Another apparent instance of a shared error not hitherto cited is: ParPol 226.18: περιτομίδας, a passage derived from Apollodorus 155.11: περιστομίδας VP : περιτομίδας M. On the correct form περιστομής, and editorial confusion with περιτομής, see DAVID WHITEHEAD, *Apollodorus Mechanicus: Siege-matters* (Πολιορκητικά) (Historia Einzelschriften 216). Stuttgart 2010, pp. 99–100, 131, with bibliography.

manuscript of ParPol (V¹) were created in the following century, in theory leaving scope for pictorial influences in one or both directions. Ultimately, the mass of variable or conflicting data, and the maze of possible routes, leaves S. no option but to classify ParPol as a product of a complex contaminated pictorial tradition. As ParPol is an adaptation of ancient texts, rather than a scribal copy, this should not surprise. Second, S.'s pictorial analysis of V, P and E (pp. 313–317) affirms the long-held opinion of textual scholarship that E is a copy of V. In contrast, diverging from the consensus that V and P are 'twins' or close collateral descendants of their hyparchetype, S. argues that at least one illustration in P was copied directly from or influenced by V. Unnecessarily, S. overburdens her case by adducing, for comparative purposes, an obviously wrong and long-discredited stemma of DAIN (1946). Nonetheless, while I would require more evidence before accepting S.'s argument, her thesis is not intrinsically impossible or even unlikely, given the contemporaneous production of V and P in the same scriptorium. But one must insist more emphatically that this stemma could apply only to the illustrations; the texts transmitted in P are demonstrably not copied from V. I also wonder whether some of the pictorial features S. identifies might cohere with a prior inference (e.g. DENNIS 1981) that one or more copies intervene between P and the hyparchetype, as a way of explaining why the text in P is evidently more defective than in its 'twin' V.⁷

Section IV concerns, in the broadest sense, the reception of illustrated Byzantine poliorcetic manuscripts in western Europe in the later medieval/early Renaissance era. Most obviously, post-Byzantine copies permit analysis of the continuing evolution of illustrative traditions: S. emphasises dynamic variety — accidental misunderstanding and distortion, conscious innovation or conservatism, and current aesthetic tastes — and considers differing implications of linked, separate or contaminated transmission of text and image. At a subtler analytical level, another primary objective is to identify and evaluate possible Byzantine pictorial influences in military-technological books (*Kriegsmaschinenbücher*), specifically in Italy, France and Germany, in the fourteenth to fifteenth centuries, conceived as a creative process of transferring and actualising ancient knowledge. Discussion of documented or hypothesised availability of Byzantine manuscripts in late medieval Italy (pre-1450s) reviews long-disputed evidence and arguments, including disproven and obsolete opinions, without arriving at new

7. DENNIS, *Das Strategikon*, p. 36.

or firmer conclusions, though S.'s exposition of diverse theses is clearly presented and mostly cautious. Extended treatment of Vat. gr. 1605 (= Par-Pol) is justified by the complexity of the evidence, but also because it represents the best-case scenario of potential western access to such a Byzantine codex before the fifteenth century. Regarding the vexed identity of the poliorcetic collection that Giovanni Aurispa brought from Constantinople to Venice in 1423, S. (pp. 400–404, 497) largely follows recent scholarship in favouring V, not unreasonably, though some links in this reconstruction are weaker than they may seem.⁸ S.'s search for Byzantine pictorial inspiration in western European military-technological books is necessarily selective but well conceived. Prior scholarship is characterised by guesswork and ill-informed generalisations, though GIUSTINA OSTUNI's comparative observations on images in Guido da Vigevano's *Texaurus* (1335) and ParPol partly foreshadow S.'s approach.⁹ S.'s investigation is premised on the logic that reception of images in Byzantine manuscripts is feasible even if the Greek text was inaccessible to most western readers. Separately, S. demonstrates at length that ancient Latin technical literature, in any case mostly unillustrated, cannot have provided models for late medieval illustrations of machinery, which thus either emerged *ex nihilo* from the contemporary technological environment, as is commonly assumed, or under other external influences. Even allowing for the likelihood that the adaptive creativity of western illustrators might disguise any debts to Byzantine models, the results of S.'s inquiry are largely negative, but her cautious remarks on formal and stylistic resemblances merit consideration, most persuasively with regard to certain ornamental 'antique' motifs. Ultimately, S. can only raise questions, rather than provide answers, about the circumstances of posited Byzantine-Western literary-cultural contact, especially before the 1420s. Nonetheless, by examining improperly known or unexplored territory, her analysis should at least ensure that such early

8. See reservations expressed by SILVIA FIASCHI, Aelianus Tacticus. In: GRETA DINKOVA-BRUUN – JAMES HANKINS – ROBERT A. KASTER (eds), *Catalogus Translationum et Commentariorum* (Mediaeval and Renaissance Latin Translations and Commentaries 10). Toronto 2014, pp. 127–163 at 138–141 (with n. 31), 144–147. In addition, if Aurispa's codex was V, it becomes doubtful that it was also the manuscript owned by Alfonso I of Naples in the mid-1450s (thus S. on p. 497), inasmuch a Latin translation of a tactical work that Alfonso then commissioned is evidently based on E (or N/E). See the long overlooked implications of ALPHONSE DAIN's, *Les manuscrits d'Onésandros*. Paris 1930, pp. 24, 160, with stemma at 117 (N → Trad. lat.).

9. GIUSTINA OSTUNI, *Le macchine del re. Il Texaurus regis Francie di Guido da Vigevano*. Vigevano 1993.

interaction is not automatically dismissed as impossible. Finally, a short but rewarding extension into the sixteenth and seventeenth centuries shows how illustrations from the Byzantine poliorcetic tradition were adapted and interpolated in printed books, including insertion of images into previously unillustrated works from separate traditions, such as Vitruvius' *De architectura*.

An appended "Handschriftenkatalog" (pp. 493–555) provides general descriptions of the history, form and content of "einen Großteil" of those codices, medieval and *recentiores*, that transmit illustrated copies of poliorcetic works, along with basic bibliography. A distant footnote (p. 319 n. 804) lists unexamined codices, mostly late specimens, that are excluded. I note one omission, though the circumstances are exceptional.¹⁰ S. cannot identify a codex cited by WESCHER, but the fault is his.¹¹ Focusing on illustrations, the catalogue informs and justifies decisions underlying the preceding "bildkritisches" stemma. Inevitably, it largely compiles information from previous catalogues, editions and databases, and sometimes imports their defects.¹² Occasionally, descriptive content is uneven or arbitrary, and cited bibliography thin or partly obsolete (e.g. WESCHER 1867; posthumous DAIN 1967); ANDRÁS NÉMETH's doctoral dissertation (CEU, Budapest, 2010) is often cited but not the resultant monograph (Cambridge University Press 2018), in which arguments are refined or significantly revised.¹³ As most of the Byzantine codices have been inten-

10. One should add recently recovered Turin, BNU, C. II. 08 (Pasini 60), formerly thought destroyed in a fire in 1904. See PAOLO ELEUTERI – ERIKA ELIA, *Lost and Found: un codice greco torinese perduto e ritrovato*. *Codices Manuscripti & Impressi* 118 (2019) pp. 17–31, tav. 1–3, with further bibliography at <https://pinakes.irht.cnrs.fr/notices/cote/63570/>

11. S. observes (pp. 283–284 n. 698): "Weschers Stemma enthält außerdem einen Cod. regius Neapolitanus 143, bei dem es sich allerdings nicht um eine Handschrift des poliorketischen Korpus handelt". Here WESCHER cites a prior catalogue number (BAFFI 1796) of Naples, BN, III C 18 (= SCHONEVELD's N), though the codex had long been renumbered as 276 (CIRILLO 1826–32).

12. The cataloguing of some works exhibits routine confusion or inconsistency: e.g. in nearly all instances, the late ninth-/early tenth-century compilation known as the *Apparatus bellicus* is variously listed under the title/description of one, two or three of its constituent parts, typically initial excerpts from Julius Africanus' *Kestoi*. In Vienna, ÖNB, phil. gr. 55 (p. 513), spurious "Konstantinos VIII., Liber tacticus" (ff. 168^r–195^v) is correctly the *Taktika* of Nikephoros Ouranos: see ALPHONSE DAIN, *La "Tactique" de Nicéphore Ouranos*. Paris 1937, pp. 114–119. Likewise, in Vienna, ÖNB, phil. gr. 120 (p. 506), "Anonymus, Taktische Fragmente" (ff. 46–47) are from Ouranos' treatise.

13. ANDRÁS NÉMETH, *The Excerpta Constantiniana and the Byzantine Appropria-*

sively studied and possess large bibliographies, S.'s contribution is mostly synoptic. In contrast, many of the *recentiores* and their stemmatic relationships have drawn less attention: here S. usefully consolidates disparate scholarship, and is especially successful at integrating printed and online material. In some cases, S. unravels complex contaminated pictorial traditions, e.g. Paris, BnF, suppl. gr. 26 (pp. 391–392, 539–542). Overall, there are few errors or slips, mostly minor.¹⁴ I have relegated critical discussion of particular cases to an appendix below, but two observations are of general methodological significance. First, like much of prior scholarship on poliorcetic treatises, S.'s analysis occasionally suffers from a narrow focus. In VPE (as in their hyparchetype), and thence in many of their post-Byzantine descendants, the poliorcetic corpus shares a conjoined transmission with other treatises on tactics and generalship. Accepting that S.'s concern is the transmission of images rather than text, in some cases integration of available studies of the textual traditions of certain tactical works might have supported or simplified S.'s efforts to establish a stemma for the poliorcetic corpus. For example, in her discussion of early sixteenth-century Paris, BnF, gr. 2445 (= P⁸), S. (pp. 537–538) concludes that its illustrations are copied from V, rightly rejecting (n. 1602) GATTO's stemma of Athenaeus, in which P⁸ descends from P, for no good reason.¹⁵ Leaving aside that WESCHER (1867) long ago recognised the descent of the poliorcetic corpus in P⁸ from V, albeit without demonstration,¹⁶ S.'s "bildkritisch" approach does not take account of the wider transmissional framework. For example, as P⁸ also contains Onasander's *Strategikos* (1^r–21^r, 30^v–34^v), this issue was resolved almost a century ago by DAIN's study of the textual tradition of that work (1930), which demonstrated, beyond doubt, that P⁸ is simply a full apograph – or even "reproduction mécanique"

tion of the Past. Cambridge 2018.

14. Pp. 494, 506–507: Milan "C 262" = "C 262 inf." p. 495: "2. Hälfte 10. Jh." should read "2. Viertel" (thus p. 37); "Provenienz: Um 1470: Rom" applies only to "3. Teil". p. 498 n.1508: mistakenly reports a lacuna in V ff. 247/248; in fact, intercalated f. 247a is a later duplicate of f. 247. p. 500: "Die Datierung der Handschrift basiert teilweise auf dem durch den Text von Nikephoros II. Phokas (reg. 963–969) gegebenen *terminus post quem*": strictly, this terminus relates to the hyparchetype ("Mazoneus") rather than its copies P and V. p. 501: "P stellt ... eine Kopie von V ... dar": one should clarify that this statement can relate only to illustrations, but demonstrably not to the text. p. 539 n. 1607: in Paris, BnF, suppl. gr. 26 the copyist's notice is on f. 255^r not 266^r.

15. GATTO, *Il Περί μηχανημάτων*, pp. 170–174, where P⁸ is derived from P (via three intermediaries, two of them posited). My autopsy of variants in the initial folios of Athenaeus in P⁸ (ff. 114^v–115^v) leaves no doubt of its descent from V.

16. WESCHER, *Poliorcétique*, p. xxxiv, with stemma at p. xxxviii (P⁸).

– of V. Transmission of P⁸ from V is likewise demonstrable in the traditions of other constituent texts.¹⁷ Second, more attention might have been paid to individual copyists and scribal collaborations. For example, S. records (pp. 515, 538) that the copyist of Glasgow, UL, Hunter 220 (= G) and Paris, BnF, gr. 2521 (= P⁹), both descendants of E, has been identified as Camillo Zanetti, a prolific scribe active c.1540s–1560s, mostly in Venice (RGK I 212; II 299; III 351). S. notes also that Zanetti contributed to Milan, BAmbr, C 262 inf., likewise derived from E (p. 506); that he is possibly – if doubtfully – the/a copyist of Munich, SB, gr. 165 (= K) (p. 520: here styled “Camillus Venetus”); and that Paris, BnF, gr. 2441 (= P⁷) has been considered “vermutlich aus dem Atelier Zanetti” (p. 536). Besides copying Greek tactical texts in other manuscripts (e.g. Venice, BNM, gr. XI 30e), Zanetti was also one of three copyists of poliorcetic works in Turin, BNU, C. II. 08, of which S. seems unaware, another descendant of E, again copied in Venice and dated by watermarks to the 550s.¹⁸ Another of this scribal trio was Emmanuel Bembainēs, who, as S. notes (p. 521), collaborated on Munich, SB, gr. 195 (= K¹), c.550. Bembainēs is also the scribe of Vatican, BAV, Vat. gr. 1771 (see RGK III 188), which S. mentions but did not examine (p. 319 n. 804). Certainly, there is scope here for research on scribal-patronage networks underlying the sudden proliferation of full or partial copies of E, notably in Venice, in the 1540s–1550s, accepting that external factors increased overall demand for copies of Greek manuscripts at this time (e.g. proximity to the Council of Trent, 1545–63, as a “book market”). Greater clarity on this issue may in turn revise the history of E itself, inasmuch as scholarship currently infers, from limited evidence, that E was owned by the Convent of S. Pietro in Perugia from c.1518, until acquired from there by Diego Hurtado de Mendoza sometime post-1547, only after his residence in Venice as Imperial ambassador had ended (1539–47) and he relocated to Siena/Rome (1547–52).¹⁹ E permanently left Italy when Hurtado de Mendoza returned to Spain in autumn 1552. According to this scheme, how and when Venice-based copyists ac-

17. ALPHONSE DAIN, *Les manuscrits d’Onésandros*. Paris 1930, pp. 51–53 (SCHONVELD’S P⁸ = DAIN’S S). See also DAIN, *Inventaire*, p. 45 (n° 66) regarding the tradition of Leo’s *Taktika*. See also GILBERT DAGRON – HARALAMBIE MIHĂESCU, *Le Traité sur la guérilla (De velitatione) de l’empereur Nicéphore Phocas (963–969)*. Paris 1986, p. 19.

18. See above n. 10. See ELEUTERI – ELIA, *Lost and Found*, esp. 25–27.

19. See recently, e.g., TERESA MARTÍNEZ MANZANO, *La biblioteca manuscrita griega de Diego Hurtado de Mendoza: problemas y prospectivas*. *Segno e testo* 16 (2018) pp. 317–433 at 367 n. 159, with 320–321, 410, 417 (n° 266).

cessed E, directly or indirectly, not only remains a mystery but is not even recognised as a problem (e.g. one copy of E has a colophon dated 1545: London, BL, Burney 69, f. 358^r).

Ultimately, SCHONEVELD's monograph represents a significant reorientation of approaches to military-technological illustrations in Byzantine manuscripts, away from an ancillary source in studies of ancient siegecraft, towards a central place in scholarship on Byzantine book illumination, at the intersection of scientific illustrative techniques, reception of classical literature, and Byzantine military culture. Her thorough pictorial analysis revises prior views of stylistic development and substantially redefines the 'Byzantine' contribution and its didactic rationale. The assemblage of material, especially catalogues of images and manuscripts, not only underpins her method and conclusions but also furnishes resources for further inquiry. Certain aspects are perhaps bolder than SCHONEVELD's scholarly caution implies, notably the concept of a purely image-based stemma codicum and arguments for western medieval access to Byzantine illustrated codices. Some readers may have reservations about a "bildkritisches" stemma, constructed irrespective of or even in conflict with traditional textual analysis, but the merits of this technique are best assessed on a case-by-case basis, while future research should at least better integrate images with other evidence for transmission. The volume deserves a wide readership with interests in art history, codicology, technology, military studies, and classical and Byzantine reception. Given its pictorial focus and the large number of online links in the footnotes and bibliography, the publisher should consider a digital edition.

APPENDIX

There follow selected cases relating to the production and interrelationships of particular manuscripts. In different ways, they indicate the value and limitations of SCHONEVELD's image-critical ("bildkritisch") method, especially if applied in isolation.

1. S. (p. 508) formally follows DAIN (1946/47) in dating Basel, UB, A. N. II. 44 (= B) to 1530–35.²⁰ In a footnote (n. 1542), however, she registers reservations: "Denkbar ist sicherlich auch eine etwas spätere Datierung, da die Handschrift abhängig ist von Handschrift H.". Solely on the basis of

20. S. (p. 508 n. 1542) cites ALPHONSE DAIN, *Étude d'un travail de copie. Le Basileensis A. N. II. 14. REG 59/60 (1946/47) pp. 260–280 at 262–263 (throughout which A.N. II 44 is mislabelled A.N. II 14).*

the illustrations, S. (pp. 509, 516–518) argues that B is a copy of London, BL, Burney 69 (= H), even though H bears an inscribed completion date of 7 May 1545 (f. 358^r), thus, according to DAIN’s dating, 10–15 years later than B. Up-to-date bibliography would have clarified this issue. Interestingly, on unspecified grounds (palaeographical?), DAIN (1946) had previously dated B “vers 1545–1555”, consistent with S.’s argument.²¹ His subsequent examination of watermarks led him to redate B to 1530–35. Crucially, recent research on the watermark evidence, showing DAIN’s proposed chronology to be far too narrow, can date the paper of B no more precisely than “2. Drittel des 16. Jh.”.²² In this respect, there is no impediment to S.’s image-based analysis and her intuition on redating B is corroborated.

2. Regarding three evidently related manuscripts, again Basel, UB, A. N. II. 44 (= B), with Munich, SB, gr. 195 (= K¹) and Leiden, UB, Voss. gr. F° 3 (= L), S. concurs with DAIN (1946) that K¹ is a copy of B (pp. 393 n. 1093, 509, 522 n. 1570). DAIN made L in turn a copy of K¹. On the basis of pictorial analysis, S. wishes to make L instead a copy of B (pp. 509, 523), whereby K¹ and L become siblings. A wider focus, however, reveals shared peculiarities elsewhere in K¹ and L, especially with regard to Leo’s *Taktika*. As it seems most unlikely that the different copyists of both K¹ and L, separately, made identical adjustments to the textual content and arrangement of B, either DAIN’s linear stemma B → K¹ → L is to be preferred²³ or a lost intermediary between B and K¹L must be posited.²⁴

3. Regarding Paris, BnF, gr. 2435 (= P²), an ensemble copied from multiple antigraphs, c.1525–45, S. (pp. 528–530, also 290–291 n. 731, 318) insists that the transmitted poliorcetic corpus (ff. 1–71^v) – or “zumindest was die Illustrationen betrifft” (p. 529) – is a copy of P. In support of this view, S. (p. 529 n. 1583) cites DAIN (1935), whose exposition she otherwise closely follows, though here he was mainly concerned with a different section of P² (ff. 75–109).²⁵ Accordingly, S. “mit Bestimmtheit” (n. 1582) rejects al-

21. DAIN, *Inventaire*, p. 43 (again mistakenly Basel A.N. II 14).

22. See CLÉMENT MALGONNE: (November 2021), § “Beschreibstoff”, with cited bibliography.

23. DAIN, *Inventaire*, pp. 36–37, 43 nn. 34–35; likewise DAIN, *Étude d’un travail*, pp. 263, 280.

24. GATTO, *Περί μηχανημάτων*, pp. 178–183 posits two lost intermediaries (μ and ξ) separating B (= GATTO’s B¹) from K¹ (= K) and L (= L²).

25. ALPHONSE DAIN, *Les manuscrits d’Énée le Tacticien*. REG 48 (1935) pp. 1–32 at 12–19 (citing 14).

ternatives. S. seems unaware that, a few years later, DAIN significantly and explicitly modified his view on the antigraph(s) of P², ff. 1–71^v. In DAIN (1940), noting that he had previously placed undue faith in older scholarship, he demonstrated, beyond doubt, that the poliorcetic corpus in P² has in fact been transcribed from V, directly and meticulously, and cannot possibly derive from P, not least owing to lacunae in P. However, DAIN goes on to show that, subsequently, the copyist also consulted P and recorded its *variae lectiones*, both correct and erroneous, as marginal annotations.²⁶ As DAIN's argumentation appears to be irrefutable, S.'s view that the illustrations "mit großer Genauigkeit" (p. 530) derive from P should be reconsidered in terms of this model of contamination, even if the overall process of producing P², as well as the copyist's methodological rationale (why did he omit or reject the illustrations in V?), thereby become more difficult to understand and explain.²⁷

4. Regarding Madrid, BNE, 4720 (pp. 543–544 = S), SCHONEVELD observes that the illustrations exhibit "eine Verwandtschaft" (p. 544) with those in, among other manuscripts, Paris, BnF, gr. 2437 (pp. 532–533 = P⁴). Again, "bildkritisch" arguments are left unsupported by other evidence. It is surely also worth mentioning that: 1. The two codices are dated around a year apart, respectively 1554 (annotation at f. 390a^r) and c.1555; 2. The paper of both manuscripts has the same watermark;²⁸ 3. Paginal layout is almost identical: written surface 230 x 127/120 mm; 28 lines;²⁹ 4. DAIN demonstrated that both manuscripts, sharing an identical and distinctive textual rearrangement, descend from a common exemplar;³⁰ 5. DAIN believed they were even copied by the same scribe, who has since been tentatively identified for Madrid, BNE, 4720 as Nikolaos Malaxos,

26. See uncited ALPHONSE DAIN, *La Collection florentine des Tacticiens grecs*. Paris 1940, pp. 25–35, esp. 28–31.

27. GATTO, *Il Περὶ μηχανμάτων*, pp. 167–169 also recognises that Paris, BnF, gr. 2435 (= P²) as a product of contamination, but his stemma is defective. GATTO classifies P² as primarily a descendant of P, with indirect contamination from V, the reverse of DAIN's demonstration. However, all four of the readings that GATTO claims to be common to P and P² are misreported: two are simply not found in P² (which instead follows V), and the other two in P² are later interlinear corrections (to a copy of V).

28. MARK L. SOSOWER, *Signa officinarum chartariorum in codicibus Graecis saeculo sexto decimo fabricatis in bibliothecis Hispaniae*. Amsterdam 2004, p. 481 (Couronne 6); ANNE WEDDINGEN, BnF, *Archives et manuscrits, Grec 2437*: (March 2018).

29. GREGORIO DES ANDRÉS, *Catálogo de los códices griegos de la Biblioteca Nacional*. Madrid 1987, p. 292; WEDDINGEN, BnF, *Archives et manuscrits, Grec 2437*.

30. DAIN, *Inventaire*, pp. 42–44.

though DAIN's assessment appears valid whether or not this identification is correct.³¹

5. In a discussion of sixteenth-century Vatican, BAV, Vat. gr. 219 (= V³), S. (pp. 548–550, also 282–283, 318) observes a long-term misdating to AD 1406, originating in WESCHER (1867) and often uncritically repeated by successive editors, though this error has already been pointed out in several uncited studies.³² The quoted owner's inscription of George, Count of Corinth, that S. places "am Ende" (p. 547) in fact occurs at the beginning (f. 1^r), whereas a second ownership notice at the end (f. 421^v) is somewhat differently worded and contains additional details. S. (pp. 282, 548) is doubtless correct that the Greek and Arabic numerals on facing f. 422^r inspired WESCHER's error. The "länglichen Striche" that S. tentatively identifies as "besondere Markierungen" are diacritical *keraiai*. S. realises (p. 282) that this number is not a date, but, neglecting the partly superscript initial word, she seems unaware that it is a page count: φύλλ(α) ,υς´ ,406´ (presumably reflecting a prior foliation). More importantly, S. ostensibly implies that this erroneous early dating of V³ is the fatal flaw in previous text-analytical stemmata, in which this manuscript is the progenitor of numerous offspring in the sixteenth century. In contrast, "aufgrund bildkritischer Kriterien", S. can neither identify the antigraph of V³ nor trace a single descendant (p. 548, also 318–319 n. 802). Within her own "bildkritisch" methodological parameters, S. may be correct, though in an annotational caveat S. seemingly concedes that she is making assumptions about the textual evidence.³³ Nonetheless, correcting the date of V³ does not in itself invalidate all previous text-critical analysis or render it simply replaceable by S.'s pictorial analysis. Particularly unsettling (and not cited by S. in this context) is DAIN's study of the textual tradition of Leo's *Taktika* in descendants of E, independent of prior scholarship focused solely on their poliorcetic content. Perfectly aware of the correct date of V³, DAIN still made this manuscript the direct or indirect ancestor of four other sixteenth-century manuscripts: Naples, BN, III C 18 (= N¹), Vatican, BAV, Urb. gr.

31. DAIN, Inventaire, p. 42 n. 29; ANDRÉS, Catálogo, p. 292.

32. See most recently PHILIP RANCE, Late Byzantine Elites and Military Literature: Authors, Readers and Manuscripts (11th–15th Centuries). In: GEORGIOS THEOTOKIS – AYSEL YILIDIZ (eds), A Military History of the Mediterranean Sea – Aspects of War, Diplomacy and Military Elites. Leiden – Boston 2018, pp. 255–286 at 277–278, with bibliography in n. 76.

33. See p. 547 n. 1621: "Vorausgesetzt, dass in dieser späteren Zeit das Handschriftenstemma und Bildstemma einigermaßen ähnlich verlaufen". Conflicting results of S.'s pictorial analysis and prior textual analyses suggest that this may not always be the case.

79 (= V⁵), Paris, BnF, suppl. gr. 26 (P¹⁰) and Milan, BAmbr, C 262 inf. (= A). DAIN also identified the antigraph of Vat. gr. 219 as Oxford, Magdalen, gr. 14 (= O).³⁴ Even if it should turn out that DAIN's comparative textual analysis of all six manuscripts is drastically wrong in every respect or explicable by other transmissional factors, the stemmatic interrelationship of these manuscripts does not seem to me to be an issue that can be resolved on the basis of pictorial analysis alone.³⁵

Keywords

manuscripts; illustrations; military technology

34. DAIN, *Inventaire*, p. 43 with n. 30.

35. GATTO, *Il Περὶ μηχανημάτων*, pp. 158–167, 173–185, with stemma at p. 187, offers yet another alternative interpretation of interrelationships between five of these codices, but as he did not consult O, which DAIN regards as the progenitor of the other five, his analysis cannot be regarded as complete (though in some respects O equates to GATTO's posited ι).